

Meeting of the CTF Trust Fund Committee
Washington, DC
Friday, December 15, 2017

CTF DPSP III Proposal

PROPOSED DECISION

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1. Introduction

1. At its meeting in June 2017, the Clean Technology Fund (CTF) Trust Fund Committee requested the CIF Administrative Unit and the Multilateral Development Banks (MDBs) to develop a proposal for utilizing any resources available by July 1, 2017 for further programming and present the proposal to the Committee for decision at its next meeting.
2. In response to the above decision by the Trust Fund Committee, the CIF Administrative Unit, working with the Trustee, updated the CTF resource availability taking into account of the closure of the CTF pipeline as of July 1, 2017. It is estimated that around USD 520 million of CTF resources can be available for further commitment.¹
3. In developing a proposal for utilizing the available CTF resources, the CIF Administrative Unit, in consultation with the MDBs and Trustee, proposes a flexible programming approach following the one developed under the Dedicated Private Sector Programs (DPSP). While complementing the country-based investment planning process, the flexible approach will accelerate the programming cycle by focusing on a selected number of high-priority investment areas based on evolving sector demand across the eligible countries. This proposal is called CTF DPSP III and covers both public and private sector operations.

2. Brief Review of CTF Portfolio and DPSP

4. Established in 2008, the CTF aims to provide scaled-up financing to contribute to the demonstration, deployment, and transfer of low-carbon technologies with a significant potential for long-term greenhouse gas (GHG) emission savings. It started out with USD 4.5 billion pledges and contributions and 12 country investment plans and a regional program of Concentrated Solar Power (CSP) in the Middle East and North Africa (MENA). During the eight years of operation, CTF resources have grown to USD 5.6 billion while the programs now involve 15 country investment plans, one regional program, and two phases of DPSP.
5. As of June 30, 2017, the CTF Trust Fund Committee had approved a total of USD 5 billion to finance 109 projects and programs.² Among them, the MDBs had approved 93 projects with USD 4.2 billion in CTF funding, some of which have reached completion and others are at various stages of implementation.³
6. The current CTF portfolio is made up of two-thirds of public sector operations and one-third private sector operations. By sector and technology, renewable energy accounts for over 70 percent of the total Trust Fund Committee approved funding, with about 15 percent for energy efficiency, and 10 percent for sustainable transport, with the remaining 5 percent spread across various technologies and different types of interventions. Among renewable

¹ This includes potential cancellation of funding that has been previously approved by the Trust Fund Committee.

² The Trust Fund Committee agreed to a deadline of June 30, 2017 to submit projects from the current CTF pipeline. A number of projects were submitted by the deadline, but actual approval of funding decision took place after June 30, 2017. These projects are included here.

³ See *CTF Semi-Annual Operational Report* (November 2017) for further details.

energy projects, solar energy accounts for about half of the total approved CTF funding, followed by 19 percent of geothermal.

7. The DPSP was launched in 2013 to finance operations that can deliver scale (in terms of development impact, private sector leverage, and investment from CTF financing) and speed (faster deployment of CTF resources, more efficient processing procedures), while at the same time maintaining a strong link to country priorities and CTF program objectives. The DPSP has adopted a programmatic approach where MDBs collaboratively identify high-priority investment opportunities. Two phases of the DPSP were approved by the Trust Fund Committee in October 2013 and June 2014, respectively, with a total indicative allocation of approximately USD 500 million under six thematic areas: (i) geothermal power, (ii) mini-grids, (iii) mezzanine finance, (iv) energy efficiency, (v) solar photovoltaic power, and (vi) early stage renewable energy.
8. To date, almost 90 percent of DPSP program funds have been approved by the Trust Fund Committee, and over 60 percent have been approved by the MDBs for implementation. While the CTF portfolio is predominantly loans, approximately one-third of DPSP funds are dedicated for other instruments such as convertible/contingent recovery grants and first loss guarantees.

3. Objective, Principles, and Country Access for DPSP III

3.1. Objective and Principles

9. The objective of DPSP III will be consistent with the overall objective of the CTF, i.e., to provide scaled-up financing for the demonstration, deployment, and transfer of low-carbon technologies with a significant potential for long-term GHG emissions savings. The CTF investment criteria will apply to DPSP III projects and programs.
10. In developing the DPSP III proposal, the CIF Administrative Unit and the MDBs have taken into account the following principles: (i) readiness; (ii) fit with priority thematic areas identified; (iii) innovation; (iv) leverage; and (v) impact.
11. Readiness: In order to be considered for DPSP III funding, project/program proposals should be developed and ready for submission to the Trust Fund Committee for approval within a 12-month period, i.e., by the end of December 2018. All project concepts will provide an expected date of submission to the Trust Fund Committee and an expected date of MDB approval (see Annex 1).
12. Fit with thematic areas. The projects and programs identified for DPSP III pipelines should be consistent with one or more of the following thematic areas: (i) Energy Efficiency (EE), (ii) Renewable Energy Plus (RE+), and (iii) Sustainable Transport (ST). Although a project or program could focus on financial instruments for delivery, the underlying activities to be financed should be consistent with the sectors or technologies under these three themes and aligned with the host countries' Nationally Determined Contributions (NDCs).

13. **Innovation:** Projects and programs to be proposed under the DPSP III should demonstrate innovative features, which may involve new technologies, financial instruments, and/or delivery mechanisms. For proposals aimed at scaling up operations in sectors that have previously been supported by the CTF, they must demonstrate clear additionality and strong innovation.
14. **Leverage:** DPSP III projects and programs will aim to mobilize significant volumes of finance from other sources and particularly from commercial and private sector sources. At the portfolio level, the leverage ratio between CTF and co-financing should maintain a similar scale that is comparable to the current CTF portfolio. High leverage is also important to ensure additionality and high impact of CTF investments.
15. **Impact:** The existing CTF results framework will be used for project design and to monitor and report on the results of DPSP III projects and programs, including GHG emissions savings. Recognizing that in the short term innovative projects may not necessarily lead to high levels of direct emissions reduction at the project level, projects and programs financed under DPSP III should consider transformative aspects that go beyond the direct results of the investment and emissions reduction.

3.2. Country Access

16. DPSP III will be open to the same countries that are eligible for DPSP II, i.e., current CTF countries that have developed and implemented country investment plans and the regional program as well as countries that have been selected to participate in other programs of the CIF. Emphasis should be given to countries with high potential for long-term GHG emissions reduction and activities which can bring about transformational impact and unlocking of commercial and private sector investments.

4. Elaboration of Thematic Areas and Funding Windows

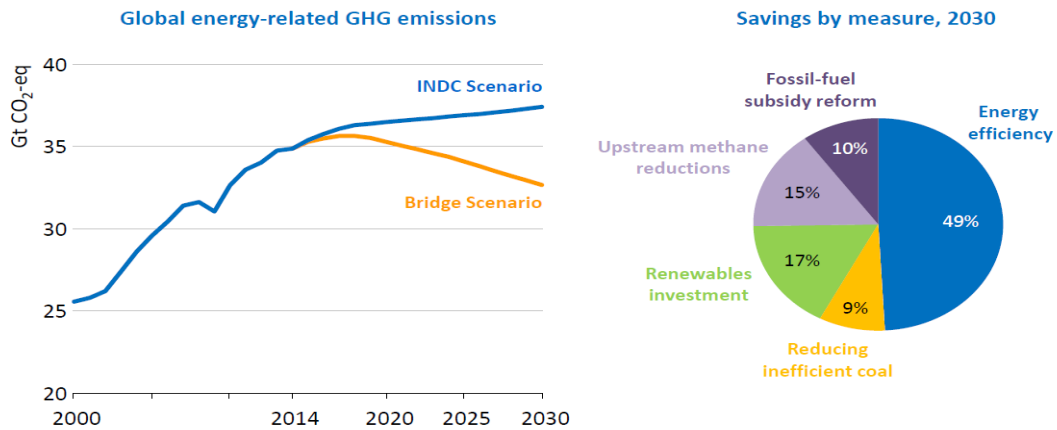
17. The proposed DPSP III will consist of four funding windows, including three thematic areas and one business development facility.

4.1. Window 1: Energy Efficiency (EE)

4.1.1. Rationale

18. About 40 percent of global GHG emissions originate from energy use in industry, transport, and buildings. According to the International Energy Agency (IEA), improving energy efficiency can contribute about 40 percent of reduction needed by 2030 (see Figure 1), while significant saving potentials exist in all end-use sectors as well as on the energy supply side. Improving energy efficiency is, therefore, fundamental to achieving global emissions reduction consistent with the 2°C target.

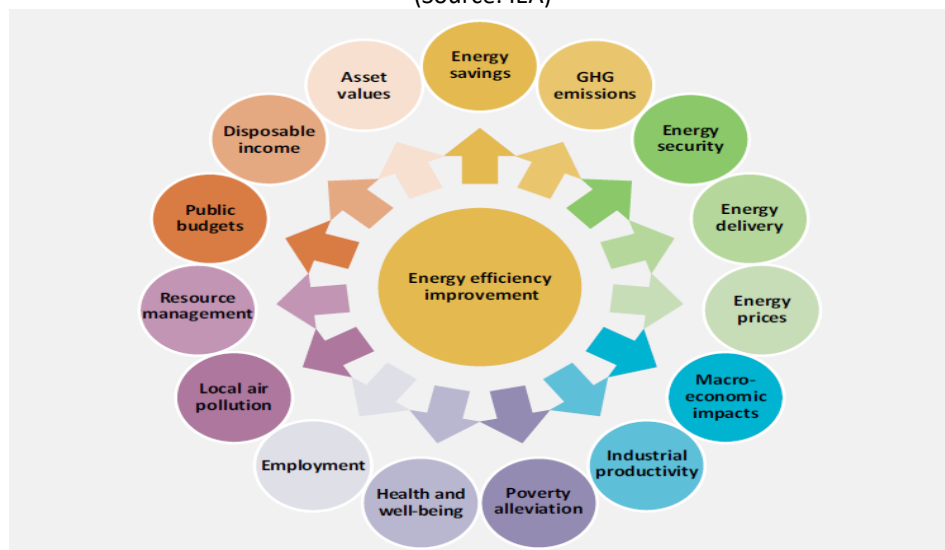
Figure 1: Energy Efficiency's Contribution to Global GHG Reduction
(Source: IEA)



Five measures – shown in a “Bridge Scenario” – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth

19. Energy efficiency has the potential to offer one of the most cost-effective options to reducing GHG emissions and provides multiple economic, social, and environmental benefits (see Figure 2). Although the benefits of energy efficiency are well recognized, it generally receives much less attention than renewable energy and the energy supply decarbonization. In fact, energy efficiency accounts for about 15 percent of the current CTF portfolio, in contrast to over 70 percent for renewable energy.

Figure 2: The Multiple Benefits of Energy Efficiency
(Source: IEA)



20. Despite the well-recognized benefits of energy efficiency, scaling up investments in energy efficiency still has many barriers, such as high upfront and transaction costs, lack of delivery capacities and mechanisms, low awareness or understanding, lack of a system to validate

savings that hinders flow of investments to the sector, and lack of information in the market. Concessional finance is still needed and can be critical in helping to absorb incremental transaction costs, provide performance assurances, and incentivize local financial institutions to embark on the energy efficiency market.

21. Drawing on the past experiences and lessons learned, the MDBs are working with countries to step up efforts in ramping up investments in energy efficiency in several emerging markets and key sectors of the economy and end-use applications, including industry, power, buildings, lighting, and appliances.

4.1.2. Prioritized EE Projects/Programs (indicative allocation: USD 180 million)

22. For DPSP III, the MDBs have identified and prioritized seven projects/programs (including three that cut across two or three thematic areas) totaling approximately USD 180 million in CTF funding (see Table 1).

Table 1: Prioritized EE Projects/Programs for DPSP III

Country	Project Title	MDB	CTF Amount (Million USD)
Brazil	Financial Instruments for Brazil EE Cities (FinBRAZEEC)	World Bank	20
Colombia	Clean Energy Development*	World Bank	20 (50 total for EE and RE+)
India	Transforming India through EE	ADB	48
Turkey	EE in Public Buildings	World Bank	50
Turkey and Ukraine	Industrial Innovation in Energy Efficiency (I2E2) Program – Phase 1 (2 of 6 countries)	EBRD	25
Ukraine	Finance for Technology Transfer Centre (FINTECC)*	EBRD	5 (10 total for EE and RE+)
Regional (eligible LAC countries)	Risk Tolerant Financial Instruments to Mobilize Private Sector Investment*	IDBG	12 (32 total for EE, RE+ and ST)
Subtotal			180

* Cross-cutting proposal; see summaries under Cross-Cutting Section. Amounts by theme are indicative.

23. The DPSP III EE projects and programs will come from four MDBs and will cover a diverse group of countries, including Brazil (which has not received CTF funding before), Colombia, India, Turkey, Ukraine, and multiple countries in Latin America and Caribbean (LAC). The projects/programs will also target a wide range of sectors and markets, from industry to buildings, street lighting, appliances, and equipment. Most projects/programs will request concessional loans and a small amount of grant for technical assistance and capacity building. Some projects intend to use the ESCO business model as a delivery mechanism, while leveraging private capital for energy efficiency investment is considered a key for most proposals, including those originating from the public sector.

24. The Brazil FinBRAZEEC EE Facility will provide innovative solutions to overcome key barriers for investment in urban energy efficiency. The project will target street lighting and industrial sectors, and concessional finance will be required to unlock investments from the private sector, especially in the current context of high local interest rates. The program aims to achieve electricity savings of 1.46 TWh annually and avoid GHG emissions of 1.19 million tons of CO₂ a year.
25. The India EE project aims to transform the markets for new, super-efficient technologies for municipal, commercial, and residential consumers, such as street lighting, ceiling fans, pumps, electric vehicles, as well as smart grids and tri-generation. It will build on the success of the India's Energy Efficiency Services Limited (EESL) – a super ESCO – and scale up operations and the business model in various end-use sectors and technologies. The transformative impact will include 15-20 percent savings from 40 million units of the targeted technologies or 3.5 billion kWh or electricity savings a year.
26. Two EE projects will be proposed in Turkey: one with the World Bank in public buildings and one with EBRD in industry (also including Ukraine). The EE in public buildings project will seek to develop and implement a national-scale program to improve EE in central and municipal government buildings by establishing and capitalizing a dedicated, specialized, sustainable EE revolving fund that can finance and implement EE investments in public buildings and facilities at scale. With a total cost of USD 250 million (from CTF, IBRD, and KfW), the project is expected to result in 627 GWh of annual energy savings and over 500,000 tons of annual CO₂ emissions reduction.
27. The EBRD Industry Innovation in Energy Efficiency (I2E2) Program (Turkey and Ukraine) aims to incentivize companies to identify, pursue and prioritize energy efficiency and emissions reductions investments when planning capital expenditure by financing the deployment of innovative technologies with low penetration in specific industrial processes. The program will target a wide range of energy-intensive industrial sub-sectors, such as chemicals, cement, pulp and paper, glass, iron and steel, and aluminum. Phase 1 of the program will involve Turkey and Ukraine, while Phase 2 will expand to Egypt, Kazakhstan, Morocco and Tunisia. The program seeks to achieve 1:10 leverage for CTF funding.

4.2. Window 2: Renewable Energy Plus (RE+)

4.2.1. Rationale

28. CTF has been at the forefront of financing renewable energy technologies in middle-income countries and emerging markets toward sustainable energy transition and low-carbon development. About 70 percent of the CTF portfolio is renewable energy. CTF financing has been successful in a number of markets in driving down technology costs, stimulating private sector participation, and catalyzing transformative change: (i) by providing gap-filling finance at a critical juncture to move markets; (ii) by supporting the first use of key technologies in a country; and (iii) through joint MDB effort to support the deployment of

technologies at scale at the national and global levels. In the process, the CTF has supported groundbreaking projects such as CSP and introduced innovative financing instruments such as contingent recovery grant for de-risking geothermal projects.

29. The context today for CTF to support renewable energy is quite different from what it was when the CTF was established nine years ago. Many developing countries have set ambitious targets for renewable energy and created dedicated policy and regulatory instruments. Furthermore, the price of renewable energy has decreased considerably, particularly for wind and solar PV. As a result, renewable energy capacity has increased rapidly in many developing countries. Despite the remarkable process, renewable energy deployment continues to face challenges. First, in order to grow capacity of variable wind and solar power, new investments to increase the flexibility of electricity grids are becoming indispensable. Second, distributed generation is increasingly competitive with centralized generation, yet business and finance models to profit from this opportunity remain to be developed. Finally, utility-scale solar power still needs support both for its deployment in new countries and markets and for the next generation of renewable technologies, such as floating solar and CSP-PV hybrid. Some of these technologies are considered risky by traditional investors, thereby discouraging their uptake by private sector entities to help scale up and bring down costs. Financing from the CTF can make a major impact by addressing specific barriers, demonstrating potential and viability through targeted risk-capital in order to facilitate and mobilize private sector financing.

4.2.2. Solar

30. Solar power offers significant mitigation opportunities not only through distributed generation projects but also in utility-scale power plants. Despite significant cost reductions in solar energy technologies, their deployment in many developing countries with good solar resources remain slow, due to a weak enabling environment, high financing costs, and lack of the necessary capacity, infrastructure and resources to integrate variable solar generation. An inadequate enabling environment, including limited government capacity for contractual negotiations and efficient public procurement of private power generation, as well as high payment risks associated with public off-takers with weak credit slow down development and drive up the costs.

31. Technical challenges (real or perceived) are also partially responsible for the slow pace of solar deployment in some regions. Utilities are reluctant to deal with integrating variable generation, having been used to operating large, predictable, central thermal power stations. Utilities and governments may also have limited operating capacity and knowledge of advances in technology. Finally, the transmission grid is often weak to evacuate the new power generated, and the control systems in place often make it difficult to assess the impacts of integrating RE into existing systems.

32. Concessional finance can play a critical role in de-risking investments through the provision of mitigation instruments and supporting first movers, in countries where little or no solar

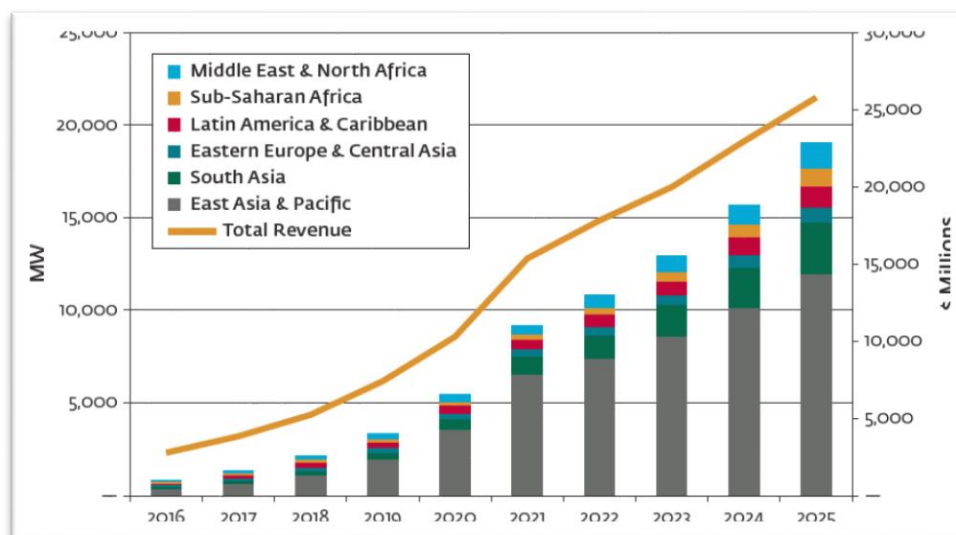
capacity has been installed to date and where it may not yet be competitive. Concessional finance will be essential, even in those countries that have already integrated a limited amount of solar energy, for “greening the grid”. The challenge – and cost – of integrating solar energy remains a concern even for middle-income countries that are rapidly increasing the level of solar (and wind) penetration. These countries need to modernize their regulatory frameworks, infrastructure and capacity to address areas such as RE technical standards and market design to achieve a flexible, balanced portfolio of energy assets.

4.2.3. Energy Storage

33. Conventional electricity grids can easily accommodate a small share of variable renewable energy capacity such as wind and solar. However, a larger share of renewable energy capacity would require investment and policy changes to increase grid flexibility, including (i) incorporation of energy storage such as batteries or hydro storage; (ii) strengthening of transmission networks to compensate variable resources with each other; (iii) management of electricity demand (e.g., via smart meters); and (iv) incorporation of flexible renewable energy generation assets or changes in their operation so that they can better complement various generation.
34. Energy storage is a particularly valuable technology for several reasons. First, increased penetration of intermittent renewable energy sources causes imbalances in the grid that must be managed by increasingly expensive peaking plants. Storage technologies such as batteries can support system ramping by reducing the need for and increased operational efficiency of any remaining fossil generation. Second, aging and congested transmission and distribution (T&D) networks create bottlenecks that prevent cost-effective sources of energy from reaching the areas where it is needed most and adding storage capacity is usually less costly than laying down new lines. Energy storage investments can accelerate deployment and dispatch of RE at scale much sooner than otherwise, when the T&D networks are rolled out. Third, excess energy produced that cannot be absorbed by the grid is wasted and curtailment adds to costs and reduces acceptance of additional RE deployment, while at the same time there are reliability issues related to the existing sources of supply.
35. Energy storage deployment in emerging markets worldwide are expected to grow over 40 percent annually in the coming decade, adding approximately 80 gigawatts (GW) of new storage capacity to the estimated 2 GW existing today (see Figure 3). Energy storage is emerging from niche applications to economic viability in mainstream settings. Despite the potential high demand, there are existing barriers hampering their wider uptake and deployment at scale worldwide, including high upfront costs, underdeveloped grid infrastructure, lack of familiarity with storage technology among utilities, regulators and financiers, and lack of conducive regulatory environment. Concessional sources of financing can facilitate the penetration and scaling-up through interventions that help bridge the gap to commercial project viability, mitigate real and perceived risks, finance first-of-its-kind

projects and provide technical assistance to promote regulatory framework convergence, establish testing and certification standards to ensure quality.

Figure 3: Projected Annual Stationary Energy Storage Deployments
(Source: Navigant Research)



4.2.4. Distributed Generation

36. It is widely recognized that a significant potential for the deployment of renewable energy lies in small scale generation installations located near the points of consumption in both grid-connected and off-grid contexts. Governments, private sector investors, local and international service providers have been harnessing this opportunity in markets across Sub-Saharan Africa, South Asia, and Latin America. Despite the significant demand and relevance of these investments, they generally offer insufficient risk-reward to private sector investors and to lenders for the following reasons: a) regulatory risks, given a lack of specific policies for such projects (e., net metering policies); b) higher upfront costs when compared with small scale fossil fuel choices in many countries; c) lack of access to long-term financing due to absence of a revenue model; and, d) complex stakeholder interests, in the form of competing priorities and vested interests.

37. Concessional finance can help overcome many of these challenges and could catalyze off-grid power markets in developing countries. Concessional finance can help lower the financing cost and improve affordability to the customers and put in place favorable policies and measures to mobilize additional resources for scaling up. Concessional finance can also help establish viable business models and track records for fully commercial investors through subordinated loans and help start-up ventures off the ground through early-stage equity.

4.2.5. Prioritized RE+ Projects/Programs (indicative allocation: USD 280 million)

38. A total of 12 projects and programs have been prioritized by the MDBs for support under the RE+ window (including three cross-cutting projects/programs). They include a wide range of regions and countries, from Cote d'Ivoire and Nigeria in Sub-Saharan Africa to Thailand in Asia, Colombia, Honduras, and Mexico in Latin America, Morocco in North Africa, two regional programs in Latin America and the Caribbean, and two global programs. In total, they request approximately USD 280 million in CTF funding (see Table 2).

Table 2: Prioritized RE+ Projects/Programs for DPSP III

Country	Project Title	MDB	CTF Amount Requested (Million USD)
Colombia	Clean Energy Development*	World Bank	30 (50 total for EE and RE+)
Cote d'Ivoire (plus Ghana, Kenya)	Asset-Backed Distributed Generation Program	AfDB	20
Honduras	Energy Storage in Existing Hydro Reservoirs	IDBG	18
Mexico	Developing Distributed RE Financing Market	IDBG	10
Morocco	Noor Solar Power Projects	World Bank	50
Nigeria	Utility-Scale Solar IPP Program	AfDB	24
Thailand	Integrated Renewable Energy and Energy Storage	ADB	38
Ukraine	Finance for Technology Transfer Centre (FINTECC)*	EBRD	5 (10 total for EE and RE+)
Global	Distributed Generation	IFC	30
Global	Waste to Energy	IFC	40
Regional (LAC eligible countries)	Risk Tolerant Financial Instruments to Mobilize Private Investment*	IDBG	12 (32 total for EE, RE+ and ST)
Regional (Bolivia, Colombia, Ecuador, Nicaragua, and Peru)	Latin America Distributed Energy Fund (LADEF)	IDBG	3
Subtotal			280

* Cross-cutting proposal; see summaries under Cross-Cutting Section. Amounts by theme are indicative.

39. **Distributed generation:** Four programs under the RE+ window will focus on distributed generation: one in Sub-Saharan Africa, two in Latin America, and one global program. The proposed program in Cote d'Ivoire (plus Ghana and/or Kenya) with AfDB will pilot a local currency asset backed financing structure to enable promoters to scale up the rollout of pay-as-you-go off-grid Solar Home Systems (SHS) to around 2 million people primarily in rural areas. The program will test a replicable and scalable local currency financing model for the off-grid SHS sector, where 90 percent of financing is in foreign currency.

40. The Mexico program with the IDB Group (IDBG) aims to create a financing market for distributed solar installations and address current market barriers for small and medium enterprises (SMEs). The program will develop a comprehensive package of bankable

business models and provide an innovative liquidity guarantee to support the operational financing requirements of beneficiary projects.

41. The Latin America Distributed Energy Fund (LADEF) with IDBG will offer capital, senior debt, and subordinated debt instruments to developers at the start-up stage and invite commercial banks to participate in senior tranches in later stages. Projects with min-hydro, wind, or solar PV technologies will be located in the peripheral segments of the distribution networks, thus minimizing transmission losses and improving system reliability.
42. The IFC global renewable DG program will work with strong sponsors with experienced local teams and sound business approaches and will target markets with favorable policy framework and market potential. The program will provide concessional funds in form of contractually subordinated loans to help attract commercial lenders, early-stage equity to help get ventures off the ground, risk participations or first-loss guarantees, and advisory services.
43. Energy storage: Two programs under the RE+ window will target energy storage and integration of various renewable energy resources.
44. The Honduras project with IDBG will support installation of additional turbines to existing hydropower plants, which will provide a cost-effective energy storage solution and an indispensable intervention in a country with one of the highest relative shares of renewables (solar PV and wind). The project will help increase flexibility of Honduras's electricity system, improve grid stability, and enable further growth of variable renewable energy capacity.
45. The Thailand renewable energy (solar, wind and/or biomass) and energy storage program with ADB will play a catalytic role in scaling up the adoption of solutions with integrated renewable energy production and power storage. It will advance private sector participation and build a track record of successful projects and scalable business models. The program intends to build on initial positive results in select countries in Southeast Asia to accelerate and mainstream the technology.
46. Solar: Two proposals under the RE+ window will focus on solar energy: one in Nigeria with AfDB on utility-scale solar program involving Independent Power Producers (IPPs) and one in Morocco with the World Bank to scale up the country's ambitious solar program. The Nigeria IPP program aims to support the deployment of utility-scale solar power plants that will contribute to increasing access to clean energy and diversifying its energy mix away from fossil-fuel based generations while reducing significantly GHG emissions. CTF funding will play a major role to: (i) help proving the demonstration effect and create valuable track record, (ii) mitigate high first mover risk, (iii) create the conditions for commercial investments flowing into renewables, (iv) address the hard currency liquidity issue, (v) enhance the participation of investors by leveling the risk exposure to the sector and the

country, and (vi) contribute to a reduction on capital costs which are currently prohibitive due to the inexistence of such projects on the ground. The proposed project will complement the existing CTF solar project with IFC in the country by allowing other IPPs to access the same concessional resources, thereby reducing market distortions and creating a level-playing field to support a long-lasting transformation of the private sector-led solar PV market in Nigeria.

47. The proposed Morocco project with the World Bank has several new, innovative features. CTF funding for Morocco CSP provided thus far has been highly concessional loans blended with IBRD and AfDB loans, along with other sources of funding. Unlike the previous CTF funding, the proposed request will be a guarantee package from CTF and IBRD that would partially guarantee a commercial loan to Morocco's sustainable energy agency (MASEN) to allow MASEN to accelerate the process to scale up future development and solar (CSP and PV) power projects, leverage private and commercial sources of funding for the first time, rather than relying solely on public sector debt and concessional funding. The CTF-IBRD guarantee package will allow MASEN to free up valuable equity and raise longer tenor and lower cost commercial financing to co-invest as part of a blended finance package in the Moroccan Solar Plan 2030.
48. Waste to energy: The proposed IFC project will aim to manage municipal solid waste (MSW) in a sustainable way by generating clean energy and supporting renewable sources of energy to combat climate change. The project will have drastic impact on climate change mitigation through three main ways: (i) diversion of organic (biogenic) waste from dumpsites where it produces methane, a potent GHG; (ii) displacing fossil fuel electricity generation with a renewable, baseload source; and (iii) reducing energy consumption by using the recovered recyclable content vs. using virgin material to produce commodity feedstocks (e.g., plastic, metal, fiber). The project will initially focus on waste to energy, but depending on the market situation other technologies for waste disposal, such as anaerobic digestion and composting could be considered, as well as waste collection, transport, and treatment of hazardous waste.

4.3. Window 3: Sustainable Transport (ST)

4.3.1. Rationale

49. Transport accounts for 23 percent of global (non-agricultural) CO₂ emissions and could rise by 70 percent by 2030, mostly from emerging economies. Not only is it possible to change the trajectory for transport emissions, but doing so would generate significant co-benefits such as reduced congestion, pollution and accidents, improved health, quality of life, enhanced productivity and economic growth.
50. However, switching to a lower carbon transport system typically requires a transformation that is complex and capital intensive. Low-carbon transport options tend to have higher upfront costs compared with carbon-intensive alternatives, and lack of long-term is often a

key barrier. Though investments generate economic co-benefits, revenue generating ability is often limited by affordability concerns; even operational cost recovery is often a challenge, making it difficult to attract private sector funds at scale. Counterparty risk guarantees for transport concession agreements, credit enhancement, innovative land-use and building fee or tax mechanisms, and transport bonds can also be used as potential instruments to facilitate access to long-term debt, and concessional finance has an important role to play to pilot and scale them up. In particular, mitigating revenue risk with concessional climate finance allows to adjust the risk profile of the project to the risk appetite of private investors. In addition, technical assistance and policy support is needed to put in place stable regulatory and tax policies, to integrate transport and urban development policies, and to integrate low-carbon and climate-resilient projects into planning decisions.

51. Sustainable transport accounts for about 10 percent of the current CTF portfolio. Concessional finance from CTF will help the MDBs accelerate on efforts to support developing countries in building sustainable, low-carbon transport systems. The transformational potential will arise from the demonstration effect of the viability of low-carbon transport approaches and technologies, as well as the adoption of policies and regulations by the government to enable the private sector and local financial institutions to invest in low-carbon transport solutions.

4.3.2. Prioritized ST Projects/Programs (indicative allocation: USD 46 million)

52. Four sustainable transport projects have been proposed for DPSP III (including one cross-cutting program)⁴. Two of them have been proposed by EBRD: one in Morocco and another one in Turkey, and another one has been proposed by IDBG in Jamaica. In total, they request approximately USD 46 million in CTF funding (see Table 3). More opportunities with transformational impact in the transport sector exist, but they require more preparation work and cannot meet short timeframe of DPSP III. Some MDBs will be requesting resources to support the preparation of these projects under the Business Development Facility (see Window 4 below).

Table 3: Prioritized ST Projects/Programs for DPSP III

Country	Project Title	MDB	CTF Amount (Million USD)
Jamaica	Improving urban transportation efficiency in Montego Bay	IDBG	5
Morocco	Casablanca Sustainable Urban Transport – Tramway Extension	EBRD	20
Turkey	Green Logistics Program	EBRD	13
Regional (LAC)	Risk Tolerant Financial Instruments to Mobilize Private Investment*	IDBG	8 (32 total for EE, RE+ and ST)
Subtotal			46

* Cross-cutting proposal; see summaries under Cross-Cutting Section. Amounts by theme are indicative.

⁴ A summary of the cross-cutting proposal is provided under the RE+ window.

53. All three ST projects are ground-breaking for several reasons. First, CTF has not funded ST projects in these three countries, so they will be the first of its kind for CTF. Second, the current CTF transport portfolio consists of projects from only ADB, IDBG, and the World Bank; the Morocco and Turkey projects will be the first ST projects for EBRD with CTF. Third, the activities proposed to be financed by the two EBRD projects – tramway lines in Morocco and green logistics in Turkey – represent new frontiers which CTF has not financed before.
54. The Jamaica project will support the government to move towards a more sustainable low-carbon transportation path through the design and implementation of an integrated traffic management system in Montego Bay. The main components of the project include: (i) preparatory studies and a mobility demand study for Montego Bay to better understand the current and projected future needs, modal split, and transportation management parameters; and (ii) investment in the design and implementation of an Integrated Traffic Management System and Integrated Operations Control Center (IOCC) that will better incentivize regulatory compliance and efficiency in the flow of traffic in the city. Innovative elements will include the use of information technology such as real-time programming of traffic light sequencing, integration and coordination of traffic signals, and installation of traffic cameras.
55. The Casablanca Sustainable Urban Transport Project will support the municipal government to increase the share of public transport to 21 percent by 2021 and to contribute to Morocco’s commitment under the Paris Agreement and to the implementation of its national strategy on logistics improvements, including modal shift from road to rail. CTF funding will finance two new tramway lines along with technical assistance on tariff studies promotion of integrated urban transport planning and competitive public serve contracts bidding process. The project is expected to have 1:11 leverage of co-financing from other sources and will avoid more than 350,000 tons of GHG emissions a year.
56. The Turkey Green Logistics Program aims to scale up private sector financing in maritime and intermodal transport. This project will be the first of its kind by the CTF to contribute to the decarbonization of the maritime sector. The project will invest in fuel and energy efficient technologies while supporting intermodal logistics with multiple environmental benefits and promoting private sector finance for green logistics. The project expects to result in avoidance of 40,000 tons of GHG emissions a year.

4.3.3. Cross-Cutting Projects/Programs

57. Three proposals prioritized by the MDBs include activities that cut across two or three of the above funding windows.
58. The proposed Clean Energy Development Project in Colombia with the World Bank will be a supplement to the existing CTF project aiming at further scaling up both RE and EE opportunities through guarantees with technical assistance. The combination of IBRD-CTF

guarantees is expected to mobilize about USD 1.67 billion of private investments in the initial phase, which is over 9.3 times the amount of the guarantees, while the total project size will be close to USD 2.2 billion. The additional CTF funding will enable the project to consider adding new dimensions related to battery storage and distributed generation.

59. The Ukraine FINTECC (Finance for Technology Transfer Center) with EBRD aims to promote innovation in medium-sized private sector enterprises predominantly in the agribusiness and manufacturing and services sectors. Potential interventions include heat recovery, energy storage, buildings insulation, tri-generation and Energy Management Systems. FINTECC will support up to 15 investments in Ukraine to support the deployment of innovative technologies with low market penetration.
60. IDBG's program on Risk Tolerant Financial Instruments to Mobilize Private Investment aims to provide a series of financial instruments that would help credit-enhance or provide risk-tolerant capital for investments that would provide valuable demonstration or significant scale-up of projects with high mitigation potential and implementing innovative technologies, business or financing models, including distributed generation solutions, ESCOs and energy efficiency performance contracts (e.g., for use in efficient public lighting under PPP models), and grid solutions that allow for further incorporation of renewables. The program will cut across all sectors and technologies under the three thematic areas of CTF DPSP III. Concessional/risk-tolerant capital will be used to address challenges and opportunities in three key areas: (i) mobilization of capital markets, (ii) mobilization of commercial banks non/limited-recourse financing, and (iii) mobilization of risk/growth capital. Financing instruments to be considered include guarantees, loans, equity, backstop bond subscriptions, and grants for technical assistance.

4.4. Window 4: Business Development Facility (BDF) (indicative allocation: USD 14 million)

61. In addition to the above three funding windows of EE, RE+, and ST, it is proposed that a fourth window of Business Development Facility (BDF) with an indicative allocation of USD 14 million be established under DPSP III.
62. The purpose of the BDF is to provide funding to support MDBs and countries to develop project pipelines to be financed by multiple sources of climate finance. The BDF will target sectors and innovative projects that face challenges to access climate finance or projects and programs that will take an extended time to develop. For example, sustainable transport projects, which represent a small share of the CTF portfolio, have continued to represent a small share of the DPSP III sealed pipeline. New sectors, such as sustainable cities, or emerging technologies, such as floating solar PV, may hold promises for future investment opportunities that require grant funding for business development.
63. Once the DPSP III Proposal is endorsed, the MDB Committee will further discuss and prioritize areas that require grant funding for business development. An indicative list of programs/projects requesting preparation grants will be shared with the Trust Fund

Committee for information by February 28, 2018. Subsequently, the MDBs may submit requests for project preparation grants (PPGs) under the BDF.

64. Aside from supporting preparation of future projects, the BDF may support other types of business development activities. For example, the World Bank, recalling previous discussions on the Risk Mitigation Facility (RMF), has indicated that it would like to request funding from BDF to pilot RMF-related enabling activities, such as (i) developing detailed financial, legal, operational and risk management processes including programming approaches and investment criteria for risk mitigation for clean technology projects on the basis of cash available and reflows from the CTF; and (ii) developing an indicative pipeline of projects and testing the likely market feedback on the demand for such CTF financial instruments that could be offered. The pilot would simulate approaches most likely to provide the greatest potential for CTF to support priority projects in the near to medium term while enhancing the efficient use of public resources.
65. The existing guidelines⁵ will be applicable for the approval and management of the PPGs, including maximum allocation of USD 1 million grant funding per project. The deadline for submitting PPGs under the BDF window will be October 31, 2018.
66. The BDF will not fund preparation of projects to be financed under DPSP III as project proposals prioritized for funding under DPSP III already have high degrees of readiness, with a target submission date by December 31, 2018.

5. DPSP III Pipeline Management and Timeline for Implementation

67. DPSP III will consist of two project pipeline: (i) a sealed pipeline prioritized by the MDBs for DPSP III (see Section IV and Annex I); and (ii) a reserve pipeline of additional projects. Should funding space become available due to projects dropping out of the sealed pipeline, projects in the reserve pipeline, with funding amount equal to or less than the dropped amount, may enter the sealed pipeline. The amounts of allocation to the three windows and the BDF are indicative and are subject to adjustments. The CIF Administrative Unit, in collaboration with the MDBs, will keep the two pipelines under review periodically and will inform the Trust Fund Committee if there are changes to the sealed pipeline.
68. The current sealed pipeline consists of a total of 19 of projects and programs with a total indicative CTF allocation of USD 506 million (see Annex 1), plus USD 14 million for the BDF. The reserve pipeline consists of 15 projects and programs requesting a total of USD 491 million in CTF funding (see Annex 2). Table 4 provides a summary of the two pipelines by project count and by thematic area.

⁵ See https://www.climateinvestmentfunds.org/sites/default/files/meeting-documents/ctf_guidelines_approval_mgt_ctf_prep_grants_public_pv_tprojects_final_0.pdf.

Table 4: Summary of DPSP III Pipelines
(Number of Projects/Programs)

	Sealed Pipeline	Reserve Pipeline
Energy Efficiency	4	5
Renewable Energy+	9	9
Sustainable Transport	3	1
Cross-cutting	3	0
Total no. of projects/programs	19	15
Total CTF funding amount	USD 506 million	USD 491 million

69. The DPSP III Proposal will be submitted to the Trust Fund Committee for endorsement at its meeting on November 27, 2017. Once endorsed by the Committee, the MDBs may submit project/program proposals under DPSP III to the Trust Fund Committee for funding approval.
70. All proposals in the sealed pipeline have a target date of submission to the Trust Fund Committee no later than December 2018. In exceptional cases, the Trust Fund Committee may agree to consider submissions after December 31, 2018, but no submissions will be accepted beyond March 31, 2019.
71. Guidelines that have been approved by the Trust Fund Committee under the *CTF Pipeline Management and Cancellation Policy (August 2016)*⁶ will apply, including timeframes between funding approval by the Trust Fund Committee and MDB board approval will apply, i.e., 12 months for public sector projects, 24 months for stand-alone private sector programs, and 36 months for private sector programs with sub-projects.

⁶ https://www.climateinvestmentfunds.org/sites/default/files/meeting-documents/ctf_pipeline_management_and_cancellation_policy_final_revised_0.pdf.

Annex 1: DPSP III Sealed Pipeline and Project Concepts

Summary of CTF DPSP III Sealed Pipeline						
Country	MDB	Project Title	Energy Efficiency	Renewable Energy Plus	Sustainable Transport	CTF Amount (Million USD)
India	ADB	Transforming India through EE	48			48
Thailand	ADB	Integrated Renewable Energy and Energy Storage		38		38
Subtotal						86
Cote d'Ivoire (+1)	AfDB	Asset-Backed Distributed Generation Program		20		20
Nigeria	AfDB	Utility-Scale Solar IPP Program		24		24
Subtotal						44
Morocco	EBRD	Casablanca Sustainable Urban Transport - Tranway Extension			20	20
Turkey	EBRD	Green Logistics Programme			13	13
Ukraine	EBRD	Finance for Technology Transfer Centre (FINTECC)	5	5		10
Regional (Turkey, Ukraine)	EBRD	Phase 1 (2 of 6 countries) - Industrial Innovation in Energy Efficiency (I2E2) Programme	25			25
Subtotal						68
Honduras	IDB	Energy storage in existing hydro reservoirs		18		18
Jamaica	IDB	Improving urban transportation efficiency in Montego Bay			5	5
Mexico	IDB	Developing the Distributed Energy Financing Market		10		10
Regional (eligible LAC countries)	IDB	Risk Tolerent Financial Instruments to Mobilize Private Investment	12	12	8	32
Regional (Peru, Ecuador, Colombia, Nicaragua and Bolivia)	IDB	Latin America Distributed Energy Fund (LADEF)		3		3
Subtotal						68
Global	IFC	Renewable Distributed Generation		30		30
Global	IFC	Waste to Energy		40		40
Subtotal						70
Brazil	World Bank	Financial instruments for Brazil Energy Efficient Cities - FinBRAZEEC	20			20
Colombia	World Bank	Clean Energy Development	20	30		50
Morocco	World Bank	Noor Solar Power Projects		50		50
Turkey	World Bank	Energy Efficiency in Public Buildings	50			50
Subtotal						170
Total			180	280	46	506

Project Concept for DPSP III – ADB – India Transforming India through Energy Efficiency

Country	India		
Project Title	Transforming India through Energy Efficiency		
Investment Area	Energy Storage:	Building Energy Efficiency: XX	Sustainable Transport:
	Distributed Generation:	Solar Energy:	
Implementing MDB (specify public or private)	ADB South Asia Energy Division (SAEN – public) Project officer: Jivan ACHARYA		
Brief Description (including project objectives, components, and innovation aspects)	<p><u>Objective:</u> Globally, one of the main challenges for implementing energy efficiency measures is incorporating the performance of energy efficient measures in the business model. Energy Service Companies (ESCOs) globally uses various performance contracting models such as shared savings, guaranteed savings, deemed savings and energy supply/management. Energy Efficiency Services Limited (EESL), implementing arm of Bureau of Energy Efficiency under the Ministry of Power, has gained extensive experience in street lighting and domestic lighting projects as an ESCO. The success of EESL in executing these projects is reflected in increase of its turnover from \$1 million in 2012, to \$15 million in 2014, with about \$100 million in 2016. The proposed project will build on the experience that EESL has gained in the lighting sector in terms of application of energy efficiency business models and seek to (i) scale up in these established sectors through additional financial support, and (ii) demonstrate widespread success in ESCO project implementation through projects targeting municipal, commercial and domestic consumers that can be leveraged to expand EESL’s operations into other technologies such as efficient pumps, ceiling fans, tri-generation, electric vehicles and smart-grid technologies.</p> <p><u>Components:</u> The project will be organized in three main interlinked components to deploy about 40 million units of these technologies with estimated energy savings of 15 to 20% leading to about 3.5 million MWh/year:</p> <p>(i) expand EESL business in existing domestic and municipal energy efficiency programs for rapid and large scale emissions reductions. This will expand EESL’s business in domestic as well as street lighting, replacement of conventional with more efficiency ceiling fans, replacing inefficient pumps with efficient ones. This will also support EESL in reviewing the existing business models of EESL and methods for their improvisation. This will lead to rapid and large scale deployment of the improvised business model for large scale deployment of these technologies;</p>		

	<p>(ii) expand EESL business in 5 – 7 new technology areas such as super-efficient ceiling fans, smart grids, tri-generation, electric vehicles etc.; and</p> <p>(iii) EESL will also be supported through technical assistance in diversifying these technologies with new business models and collaborations with other local private sector ESCOs as well as strong monitoring and verification system for the entire program. This will be coupled with gender-sensitive social marketing campaigns for target consumers, electricity distribution companies, municipalities and suppliers.</p> <p><u>Innovation aspects:</u> The project is envisaged as the game changer to demonstrate ESCO based business model to be a test bed to successfully implement large programs and produce business models for those technologies which are at pilot stage. This will help to create much needed market access, implement innovative business models, handhold private sector ESCOs in an effort to ensure replication.</p> <p>This project will help fully operationalize sustainable financing mechanism, in the form of energy efficiency revolving fund to support “proof of concept” investments and scale up energy efficiency financing and program development. It will help address some of the upfront risks in such investments in diversified technologies. Detailed design and structuring of such a revolving fund or other similar mechanism in EESL is already underway by ADB with support from Global Environment Facility. Some pilot projects will also be financed through this fund of about \$13 million in the establishment phase to gain market experience of these technologies and business model options. All profits generated by EESL after loan repayments will be re-invested in their energy saving business through the Fund.</p>
Expected CTF Financing (million USD)	\$48million
Financial Instrument (grant, loan, guarantee, equity, etc.)	CTF soft loan to cover investments in these more efficient end-use technologies. Possible guarantee or other instrument to support private sector investment through local ESCOs at the state level.
Expected Leveraging and Co-financing by Source (million USD)	ADB ordinary capital resources: \$350 million Government/EESL: \$400 Private sector (ESCOs): \$200 million
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 3.5 million MWh/year x 0.82 tons CO ₂ e/MWh = 2.87 million tCO ₂ e/year
	Installed capacity (MW):
	Energy savings (MWh; specify total or annual): 3.5 million MWh/year
	Other key indicators/targets, as applicable:

	<ul style="list-style-type: none"> • The Indian power sector has on average 30% aggregate technical and commercial losses with a potential for reduction, down to around 8%. • Reconsideration and development of new standards for the existing technologies can form one element of broader “Smart Cities” initiative. • Replication and scale-up potential across developing Asia and globally.
Expected Date of Submission to CTF Trust Fund Committee	October 2018
Expected Date of MDB Board	March 2019
Status of Consultation with Recipient Country	Preliminary consultation with the government on-going.

Version June 8, 2017

Project Concept for DPSP III – ADB – Thailand Integrated Renewable Energy and Energy Storage

Country	Thailand		
Project Title	Integrated Renewable Energy and Energy Storage		
Investment Area	Energy Storage: X	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation: X	Solar Energy: X	Other: Wind, biomass X
Implementing MDB (specify public or private)	Asian Development Bank - Private		
Brief Description (including project objectives, components, and innovation aspects)	<p>Utility scale renewable energy power generation has grown exponentially in recent years, and large markets now exist in many parts of the world including Europe, the US, Japan and developing Asia (mainly India and China). Globally, more renewable power capacity is being added annually than from fossil fuels combined; an estimated 147 GW of renewable power generation was added in 2015 (the largest annual increase to date). In this regard, utility scale wind and solar power is becoming mature. However, some regions such as Southeast Asia are not yet as advanced, and there is strong potential for private sector participation in these countries to scale up in coming years. There have been some encouraging initial results, particularly in countries with reliable government support, but there is still significant room for growth. A track record of successful projects and scalable business models is needed to capitalize on the initial uptake.</p> <p>Energy storage at scale is a relatively new addition to the clean energy space, and is rapidly being developed in advanced economies. It is being integrated into national grids for stability purposes and to enhance the availability of renewable power (giving the ability to dispatch both peak and base load clean energy). With high economic growth rates, increasing populations and an expanding middle class, the potential in Southeast Asia for energy storage combined with renewable power generation is high. This program presents a unique opportunity for CTF to play a catalytic role in its adoption and scale up.</p> <p>Developing countries are increasingly recognizing the value of renewable energy and storage solutions for climate benefits as well as their ability to mitigate the risk of over-dependence on natural gas and improve energy security. Renewable generation combined with storage is critical for clean base load power supply. Integration of renewables and storage will help deal with power fluctuations by allowing electricity to be stored for periods of peak demand. It will improve renewable energy generation efficiency (minimize grid export limitations and/or power dumping) and make better use of countries' indigenous solar and wind resources.</p>		

	Southeast Asian countries have shown positive results from initial efforts to establish renewable energy and early-stage power storage solutions. Several key governments are also supportive of growth in this area. The aim of this CTF program is to build on these initial results, and to help scale up, accelerate and mainstream the adoption of renewables and power storage. As seen in developed regions such as Europe and the US, this combination is likely to constitute a new phase of clean energy development. It will be an essential step in transitioning Asia to a low carbon economy in the longer term.
Expected CTF Financing (million USD)	USD 38 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	CTF funds would likely be provided as senior and subordinated loans to help attract commercial lenders. CTF risk participations or first-loss guarantees, and advisory grants may also be used in other contexts. Specific financing instruments will be selected and tailored at a project level reflecting specific project risks, cost structure, micro-economic conditions, sectoral dynamics, etc.
Expected Leveraging and Co-financing by Source (million USD)	USD 200 million, including funds provided by project sponsors and other financiers (including ADB)
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 192,282_tCO2e / year Installed capacity (MW): 130 MW Energy savings (MWh; specify total or annual): N/A Other key indicators/targets, as applicable: TBD
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q1 2018
Expected Date of MDB Board (month and year)	Q3 2018
Status of Consultation with Recipient Country	Discussing potential transactions with clients

Version June 8, 2017

**Project Concept for DPSP III – AfDB – Cote D’Ivoire
Asset-Backed Distributed Generation Program**

Country	Cote d’Ivoire + 1 CIF Country		
Project Title	Asset-Backed Distributed Generation Program		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation: X	Solar Energy:	
Implementing MDB (specify public or private)	AfDB (Private)		
Brief Description (including project objectives, components, and innovation aspects)	<p>The program would pilot a local currency asset backed financing structure to enable promoters to scale-up the rollout of pay-as-you-go off-grid solar home systems (SHS) to around 2 million people (approximately 400,000 households) primarily in rural areas in Côte d’Ivoire and in another CIF country where AfDB is pursuing similar projects.</p> <p>AfDB is targeting business models that entail selling solar kits via lease-to-own contracts (creating predictable receivables payable with mobile money). These models facilitate underserved lower middle-income customers access clean electricity — and also contributes to their financial inclusion (building credit history, access to finance and asset ownership). The program would: (i) test a replicable and scalable local currency financing model for the off-grid SHS sector, where 90% of financing is in foreign currency, and (ii) develop a best practice asset backed financing structure that lays the foundation for a subsequent securitization operation in the capital markets.</p> <p>In in Côte d’Ivoire, electricity access reached 88% of the population in urban areas, while in rural areas access is still limited to 29%. Although increasing, the overall electricity access rate is 56%, with 11 million people of the 23.7 million population without access to electricity mainly in rural areas. Additionally, on-grid demand has been growing rapidly over the past years, fueled by recent economic growth. Peak demand is increasing by 8% a year, putting the supply/demand balance at risk. This has led the Government of Côte d’Ivoire to launch an ambitious demand management program with the rolling out of CFL/LED light bulbs and an increased interest of on-grid population in off-grid solutions to address unreliable grid supply with frequent power cuts.</p> <p>It is expected that the program will enable the provision of clean electricity to around 400,000 low and middle income households by 2021. It will improve health outcomes from the reduction of harmful kerosene and charcoal use and contribute to around</p>		

	100,000 tCO2 reduction, improve the socio-economic status of the target population through the provision of clean energy services, create savings for households, encourage the intensive use of mobile payment to promote financial inclusion and contribute to the development of the financial sector through the piloting asset backed financing models.
Expected CTF Financing (million USD)	USD 20 million (to be divided across a maximum of two projects)
Financial Instrument (grant, loan, guarantee, equity, etc.)	To be determined on a case-by-case basis depending on the specific barriers faced by each project and on the principle of minimum concessionality. It may include a combination of grant, loan and guarantee or stand-alone instruments.
Expected Leveraging and Co-financing by Source (million USD)	Leverage: 1/4 Co-financing: USD 80 million
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 100,000 total over a period of 3 years
	Installed capacity (MW): To be determined following due diligence
	Energy savings (MWh; specify total or annual): N/A
	Other key indicators/targets, as applicable: Number of households with access to SHS = 400.000
Expected Date of Submission to CTF Trust Fund Committee (month and year)	The first project under the program would either be submitted before the end of 2017 or in early 2018 depending on the date of approval of the DPSP III. The second project would be approved during the third trimester of 2018.
Expected Date of MDB Board (month and year)	December 2017 / September 2018
Status of Consultation with Recipient Country	Ongoing

Version June 8, 2017

Project Concept for DPSP III – AfDB – Nigeria
Utility Scale Solar IPP Program

Country	Nigeria		
Project Title	Utility Scale Solar IPP Program		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy: X	
Implementing MDB (specify public or private)	African Development Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>With just a little over 5,000MW of available grid electricity generation capacity for a population of 170 million, Nigeria is unable to meet its current demand. The installed energy mix is approximately 36% hydro, 64% oil and other fossil fuels. In order to close the gap between electricity demands and supply to achieve its goals of industrialization, the Federal Government of Nigeria (FGN) has targeted to have 20,000MW of installed capacity by 2020. Due to prolific irradiation levels in northern Nigeria and given that all the natural gas resources are located in the South and Niger Delta, solar power is a cheaper option for northern Nigeria.</p> <p>Although the FGN has taken positive steps towards developing the renewable energy market in the country, progress has been slow due to significant deterioration of the energy sector’s sustainability and limited liquidity. To rectify the situation, the FGN embarked on a concerted effort to develop and implement a Power Sector Recovery Program (2017 – 2021) (PSRP). Developers remain interested in advancing their projects and recent early progress of the PSRP has reactivated the discussions around several large-scale solar Independent Power Producers schemes.</p> <p>By supporting the deployment of utility-scale solar power plants that contributes to increasing access to clean energy while reducing significantly GHG emissions, the proposed program would help Nigeria diversify its energy mix away from fossil-fuel based generations and deliver on the PSRP.</p> <p>The proposed program will support the Bank’s ongoing activities in appraising and investing in utility-scale solar IPPs in Nigeria and would involve setting up a concessional lending program with CTF for co-financing high development impact low-carbon projects. The CTF funding would play a major role in: (i) help proving the a demonstration effect and create valuable track record, (ii) mitigate high first mover risk, (iii) create the conditions for an increase, over time, of commercial investments flowing into renewables in the country, (iv) address the hard currency liquidity issue facing by the FGN, (v) enhance the participation of investors (including AfDB and other DFIs) by leveling the risk exposure to the sector and the country, and (vi) contributing to a reduction on capital costs which are currently prohibitive due to the inexistence of such projects on the ground.</p> <p>The CTF contribution to the Program would be capped at USD 24 million in the form of long-term concessional debt and/or subordinated debt and guarantees.</p>		

	<p>Resources would be allocated to up to two IPPs that would have a combined installed capacity of up to 200 MW.</p> <p>The Program is expected to leverage approximately USD 200 million of co-financing in the two solar IPPs. Further, by delivering new RE capacity, increasing energy supply, improving quality of access to sustainable electricity, and displacing carbon-intensive generation in Nigeria.</p>
Expected CTF Financing (million USD)	USD 24 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	Senior Concessional Debt, Subordinated Concessional Debt, Guarantees (TBD during appraisal with the objective of maximizing the value added of CTF resources)
Expected Leveraging and Co-financing by Source (million USD)	USD 120 million (USD 36 million from private sponsors; USD 36 million from AfDB and USD 48 from other private sector sources or DFIs)
Expected Results	<p>GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 1,500,000 (total)</p> <p>Installed capacity (MW): 100MW</p> <p>Energy savings (MWh; specify total or annual): N/A</p> <p>Other key indicators/targets, as applicable: TBD</p>
Expected Date of Submission to CTF Trust Fund Committee (month and year)	07/2018
Expected Date of MDB Board (month and year)	09/2018
Status of Consultation with Recipient Country	Discussions with the FGN and different project sponsors are at a very advanced stage. Solar generation is one of the priorities of the revised Nigeria Investment Plan

Project Concept for DPSP III – EBRD – Morocco
Casablanca Sustainable Urban Transport – Tramway Extension

Country	Morocco		
Project Title	Casablanca sustainable urban transport - tramway extension		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport: <input checked="" type="checkbox"/>
	Distributed Generation:	Solar Energy:	
Implementing MDB (specify public or private)	European Bank for Reconstruction and Development (public)		
Brief Description (including project objectives, components, and innovation aspects)	<p>Urban travel demand in Morocco rose sharply in the last decades due to constantly growing urban sprawl and socio-economic development. However, supply of public urban transport has not kept up with the demand and has not modernised which results in infrequent, unreliable and inadequate service. This drives citizens increasingly favouring private vehicles and taxis, often informal, which worsens air pollution and congestion. Being the largest city in Morocco, Casablanca has the most critical situation of urban mobility as well as the associated GHG emission and air pollution. With the number of vehicles quadrupled between 2001 and 2013 in Greater Casablanca, the congestion of the city has been further accentuated and the resulting deteriorated air quality made Casablanca rank among the top 7 most polluted cities in Africa (with transportation being among the highest contributors of such pollution). In order to help Greater Casablanca achieve significant modal shift from polluting modes (notably bus, private vehicles, shared taxi and motorcycles) to more sustainable modes, the proposed project aims to build the tramway line 3 (14km) and line 4 (18km) expecting to jointly carry over 48 million passenger journeys per year. Together with tramway line 1 (31 km; operating since 2012) and line 2 (15 km; under construction), the proposed project will contribute to the municipal government’s objective of increasing the share of public transport from 13% in 2004 to 21% by 2021. In addition to improving urban mobility, the associated benefits of the proposed project are aligned with the commitment of Princess Lalla Hasnaa of Morocco to reduce GHG emissions and air pollution.</p> <p>The project will contribute to Morocco’s Nationally Determined Contributions in which there is a commitment to reduce energy consumption in buildings, industry and transport by 12 % by 2020 and 15 % by 2030. The breakdown of expected energy savings per sector is 48 % for industry, 23% for transport, 19 % for residential and 10%for services. Morocco has developed a National strategy on Logistics improvement which, among several other measures, includes a modal shift from road to rail.</p>		

	The proposed project has three components: i) provide financial resource to finance two new tramway lines; ii) provide technical assistance to a) conduct tariff studies, b) promote an integrated approach of urban transport, c) introduce competitive public service contracts bidding process and selecting private operators to provide higher standard of services; iii) continue the policy dialogue with the government on broader institutional and financial reforms to support the development of non-sovereign lending for urban transport. Additionally it will be proposed to review and monitor the GHG savings effectively achieved by the project. The project will help to further improve and expand the GHG methodologies for urban transport systems, and advise on the adequate monitoring of such.
Expected CTF Financing (million USD)	USD 20m in EUR equivalent
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan
Expected Leveraging and Co-financing by Source (million USD)	EBRD: EUR 30m EIB: approx. EUR 190 m Other sources: EUR 140m Total co-financing: EUR 360m Expected leverage of CTF resources: approx. 1:2.5 (co-funding with EBRD only) or approx. 1: 11 considering EIB parallel co-financing)
Expected Results	With the transportation modal shift from outdated buses and private vehicles to tramway, it is expected that at least 40,000 tonnes CO ₂ would be avoided per year, or 800 kT CO ₂ eq over an assumed twenty year asset life. A study on methodology and transport modal shift and related GHG savings will be performed as part of EBRD's due diligence process and will enable to further refine the GHG saving calculations.
	Installed capacity (MW): n/a
	Energy savings (MWh; specify total or annual): n/a
	Other key indicators/targets, as applicable: Air pollution alleviated (indicator to be provided) Urban congestion reduced (indicator to be provided)
Expected Date of Submission to CTF Trust Fund Committee (month and year)	H1 2018
Expected Date of MDB Board (month and year)	H2 2018
Status of Consultation with Recipient Country	The EBRD is in contact with Casa Transport about the project and discussed already the possibility to support the investment; more detailed discussions are occurring at the moment with Casa Transport management.

Project Concept for DPSP III – EBRD – Multi Country Industry Innovation in Energy Efficiency (I²E²) Programme

Country	Phase 1 (Turkey, Ukraine) Phase 2 (Kazakhstan, Egypt, Morocco and Tunisia)		
Project Title	Industry Innovation in Energy Efficiency (I ² E ²) programme		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy:	Energy efficiency: YES
Implementing MDB (specify public or private)	European Bank for Reconstruction and Development (private)		
Brief Description (including project objectives, components, and innovation aspects)	<ul style="list-style-type: none"> • The industrial sector worldwide accounts for 36% of total final energy consumption and is responsible for 8.3 Gt of CO₂ emissions, or 24% of total CO₂ emissions in 2014. The EBRD operates in countries that are among the world highest carbon intensity economies, with values ranging up to nearly 50 t CO₂/TJ, compared to the approx. 32-25 t CO₂/TJ of EU or USA. • The industrial sector faces challenges when pursuing innovative energy savings or emissions reductions technologies. Companies are often inadequately informed about such opportunities when making new investments and do not base their investment decisions on, the potential energy savings that could be achieved from each new investment. Moreover, due to insufficient regulatory incentives, first-movers in this sector are generally unable to overcome local market barriers to attract finance. The industrial sector is capital intensive and existing investment is locked into plant with long asset lives. Without additional incentives for operators to invest in innovation, the turnover rate of existing assets is insufficient to accelerate the uptake of advanced technologies and processes. • The Industry Innovation in Energy Efficiency (I²E²) programme seeks to address barriers to, and accelerate, investment in innovative technologies in the industrial sector which improve energy efficiency and reduce greenhouse gas emissions as well as local pollution. The programme will incentivize companies to identify, pursue and prioritise energy efficiency and emissions reductions investments when planning capital expenditure by financing the deployment of technologies with low penetration in specific industrial processes. • Specific industrial sub-sectors that may be targeted by this programme and associated possible interventions are: <ul style="list-style-type: none"> ○ Chemicals: bio-based feedstocks, waste heat recovery, combined heat and power generation, production of ammonia using hydrogen from low-carbon electricity and 		

	<p>production of methanol, olefins and BTX from hydrogen and CO2.</p> <ul style="list-style-type: none"> ○ Cement: lowering clinker content, improving thermal efficiency of kilns, use of alternative fuels and raw materials, implementing waste heat recovery systems. ○ Pulp and paper: Combined heat and power generation, fuel switching, process optimization, shift to new bio-based products, increased use of recovered fibre. ○ Glass manufacturing: improved process control, increased use of cullet, increased furnace size, use of regenerative heating, oxy-fuel technology, batch and cullet pre-heating and reduction of reject rates. ○ Iron and steel and aluminium: energy efficiency improvements and alternative production processes and decarbonisation of electricity supply. <ul style="list-style-type: none"> ● CTF funding will mobilise EBRD and other sources of finance to stimulate demand in industrial companies for innovative energy efficiency technologies such as these and catalyse local financial markets for best available energy efficiency solutions in the sector. The programme builds on the success of several projects carried out recently by the EBRD, such as the low-carbon roadmap developed for cement industry (in Egypt and Kazakhstan), the downstream oil modernisation project (in Egypt, Kazakhstan, Ukraine, Morocco and Tunisia), as well as EBRD’s extensive experience in investments carried out in the industrial sector in the region. The programme would fund up to 10 stand-alone projects in the proposed countries. ● Following detailed assessment of the specific markets this Programme will target, pilot interventions will be coupled with policy dialogue at government level and industry associations to promote the wider uptake of the identified technologies in the local industries. This demonstration effect is intended to stimulate additional demand in the broader market and lead to substantial indirect emissions reductions. ● The Programme will focus on the rehabilitation of existing facilities but opportunities to invest in new production capacity may also be considered. Investments will be accounted for in line with the Joint MDB Climate Finance tracking methodology and will only be considered for CTF funding where they are expected to lead to a substantial reduction in emissions intensity of technologies in the relevant sub-sector when compared with industry benchmarks. Investments will be subject to full Environmental and Social due diligence in line with standard EBRD policies and procedures.
<p>Expected CTF Financing (million USD)</p>	<p>USD 40 million (USD 25 million phase 1, including USD 2 million TA grants; USD 15 million phase 2, including USD 1 million TA grants)</p>

Financial Instrument (grant, loan, guarantee, equity, etc.)	USD 37 million loan and USD 3 million TA grants
Expected Leveraging and Co-financing by Source (million USD)	EBRD co-finance: USD 165 million Other sources of co-finance e.g. sponsor equity: USD 150 million Total co-financing: USD 350 million (USD 197 million phase 1, USD 118 phase 2) Expected leveraging: approx. 1 to 10
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 1,800 kT CO2 eq
	Installed capacity (MW): n/a
	Energy savings (MWh; specify total or annual): TBC
	Other key indicators/targets, as applicable: n/a
Expected Date of Submission to CTF Trust Fund Committee (month and year)	January 2018
Expected Date of MDB Board (month and year)	June 2018
Status of Consultation with Recipient Country	<p>This proposal is based on the active and operational relationship the EBRD has, through its local Resident Offices, with public sector representatives and private sector clients in beneficiary countries.</p> <p>All countries targeted by this programme are parties to the United Nations Framework Convention on Climate Change and have adopted or ratified the Paris Agreement on climate change in 2015. All countries have submitted Nationally Determined Contributions pledging to reduce energy consumption and associated emissions and many have made additional commitments to reduce energy consumption and emissions associated with industrial processes.</p> <p>This programme is aligned with the EBRD’s “Mobilising 100 Financial Institutions for Energy Efficiency” initiative, which was developed in collaboration with United Nations Environment and aligns with the work of the G20 Energy Efficiency Finance Task Group. Signatories to the initiative’s statement on energy efficiency finance include financial institutions in all of the participating countries.</p>

Project Concept for DPSP III – EBRD – Ukraine
Finance for Technology Transfer Centres (FINTECC)

Country	Ukraine		
Project Title	Finance for Technology Transfer Centres (FINTECC)		
Investment Area	Energy Storage: YES	Building Energy Efficiency: YES	Sustainable Transport:
	Distributed Generation: YES	Solar Energy: YES	
Implementing MDB (specify public or private)	European Bank for Reconstruction and Development (private)		
Brief Description (including project objectives, components, and innovation aspects)	<ul style="list-style-type: none"> • Ukraine is one of the largest emitters of greenhouse gas emissions in EBRD’s region of operations, and commercial and industrial activities account for a substantial proportion of national GHG emissions. However, the carbon intensity of Ukraine’s economy is over five times the world average, implying a significant potential for investment in climate technologies. • Many innovative technologies with climate change mitigation impact are economically and technically viable, but they have low or no market penetration in Ukraine due to multiple market barriers. First-mover private sector companies face commercial, financial and capacity barriers to investing in advanced climate technologies. Most Ukrainian businesses do not invest in innovative climate technologies because such technologies are either unavailable locally, would incur high financing costs or because the companies do not face regulatory incentives to improve energy efficiency performance such as energy efficiency standards, eco-design requirements, labelling programmes and carbon pricing mechanisms. • FINTECC aims to promote innovation in medium sized private sector enterprises predominantly in the agribusiness and manufacturing and services sectors in Ukraine, which together account for a significant proportion of Ukraine energy consumption and greenhouse gas emissions. Potential interventions that FINTECC aims to support in Ukraine include heat recovery, energy storage, buildings insulation, tri-generation and Energy Management Systems. • Investment in the deployment of technologies under FINTECC is expected to create a demonstration effect and promote the development of local supply chains to mainstream these technologies in the local market. In time, it is expected that the 		

	<p>strategic support provided by FINTECC will lead to an improved investment environment where Ukrainian companies are able to deploy climate technologies and gain the associated competitiveness benefits independently of CTF finance.</p> <ul style="list-style-type: none"> • FINTECC will support up to 15 investments in Ukraine to support the deployment of innovative technologies with low market penetration. The eligibility of technologies will be assessed on a case-by-case basis, with the size of the CTF tranche of each individual investment capped at 35%. EBRD will also seek other sources of donor funds to fund technical assistance activities that help companies assess the costs and benefits of different investment scenarios. • CTF funding for FINTECC will build on the successful Global Environment Facility-EBRD co-financed FINTECC programme in Eastern Europe, Ukraine and Kazakhstan, which, combined with the EBRD FINTECC Programme operating in the Southern and Eastern Mediterranean region, have to date mobilised USD 102.2 million in EBRD co-financing for 30 investments in advanced mitigation and adaptation technologies and generating 222,000 tCO₂-e in greenhouse gases reductions per year. This CTF framework will represent an innovation in the evolution of the FINTECC programme in Ukraine by moving from the current capital expenditure grant-based financial mechanism to a concessional lending approach.
Expected CTF Financing (million USD)	USD 10 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan (USD 10 million) Grants for technical assistance (USD 1 million)
Expected Leveraging and Co-financing by Source (million USD)	EBRD finance: USD 100 million Other sources of finance: USD 50 million Total co-financing: USD 150 million Expected leverage: approx. 1 to 10
Expected Results	<p>GHG emissions reduction (tons of CO₂ eq.; please specify total or annual): 250 kT CO₂ eq</p> <p>Installed capacity (MW): TBC</p> <p>Energy savings (MWh; specify total or annual): TBC</p> <p>Other key indicators/targets, as applicable: n/a</p>
Expected Date of Submission to CTF Trust Fund Committee (month and year)	January 2018
Expected Date of MDB Board (month and year)	June 2018

<p>Status of Consultation with Recipient Country</p>	<p>This proposal is based on the active and operational relationship the EBRD has, through its local Resident Offices, with public sector representatives and private sector clients in beneficiary countries.</p> <p>FINTECC is consistent with the Energy Strategy of Ukraine 2030 which aims to achieve an energy efficient economy and places emphasis on increased renewable energy. In addition the project is fully in line with the Comprehensive National Programme on Energy Conservation that aims to reduce energy-intensity through technological and structural changes.</p> <p>Ukraine is a party to the United Nations Framework Convention on Climate Change. The country's 5th National Communication to the UNFCCC focuses on energy efficiency and aims to both reduce GHG emissions and reduce the country's dependence on energy imports, noting that the vast majority of the potential of energy efficiency is yet to be realised. Ukraine has adopted and ratified the Paris Agreement on climate change and has pledged a Nationally Determined Contribution to reduce its emissions compared to a business-as-usual pathway. The project is also in line with the EU – Ukraine Association Agreement of 27th June 2014.</p>
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Project Concept for DPSP III – IDBG – Honduras
Flexibilization of Existing Generation Capacity to Accommodate Variable RE:
Energy Storage in Existing Hydro Reservoirs

Country	Honduras
Project Title	Flexibilization of existing generation capacity to accommodate variable RE: Energy storage in existing hydro reservoirs
Investment Area	Energy Storage
Implementing MDB (specify public or private)	IDBG – public window
Brief Description (including project objectives, components, and innovation aspects)	<p>The electricity sector in Honduras still has a high dependence on imported fossil fuels. In 2016 50.2% of the electricity was supplied from thermal power. The country’s power sector has also been heavily affected by prolonged draught seasons, a vulnerability strongly correlated with climate change that is set to increase.</p> <p>In order to face these problems, the Government of Honduras (GoH) has fostered the development of non-conventional renewable energy (NCRE). As a result of the Renewable Energy Promotion Law, passed in 2007, by 2016 a total of 890.5 MW (433MW of PV, 176 MW of wind, 209MW of biomass and 71.8 MW of small hydro) of privately developed and operated capacity were added into the system. Since peak demand in Honduras is only 1,515 MW, the country currently has one of the highest relative shares of variable renewables (solar PV and wind) in electricity generation in the World (16.5%).</p> <p>The incorporation of variable NCRE capacity (solar photovoltaic and wind) has led to some challenges in terms of grid stability. In order to be able to continue increasing its variable NCRE capacity, Honduras needs to (i) address its transmission bottlenecks; (ii) strengthen its interconnections with the rest of the Central American Electricity Interconnection System (SIEPAC), and (iii) increase the flexibility of its electricity system.</p> <p>The country is making progress in the first two actions, with the support of SREP and IDB. But the third action is necessary in order to enable the growth of additional NCRE capacity.</p> <p>In the context of Honduras, the most effective energy storage solution consists in the installation of additional turbines to existing hydropower plants.</p> <p>The <i>El Cajón Dam</i>, officially known as <i>Central Hidroeléctrica Francisco Morazán</i>, is a hydropower plant located in Western Honduras. With 226m, it is the 16th highest dam in the world. It has four 75MW turbines and room for a fifth 75MW turbine.</p>

	Given the hydrology of the Comayagua River, this additional turbine would have a limited impact in increasing the annual energy output of El Cajón—most of its benefits would be in terms of energy storage and increased flexibility.
Expected CTF Financing (million USD)	18M
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan
Expected Leveraging and Co-financing by Source (million USD)	134 M including IDB, other IFIs and GoH
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD
	Installed capacity (MW): 75MW
	Energy savings (MWh; specify total or annual):
	Other key indicators/targets, as applicable: Energy storage (in MWh: TBD
Expected Date of Submission to CTF Trust Fund Committee (month and year)	November 2018
Expected Date of MDB Board (month and year)	February 2019
Status of Consultation with Recipient Country	Advanced

Project Concept for DPSP III – IDBG – Jamaica
Improving Urban Transportation Efficiency in Montego Bay

Country	Jamaica
Project Title	Improving urban transportation efficiency in Montego Bay
Investment Area	Sustainable Transport
Implementing MDB (specify public or private)	IDBG-Public window
Brief Description (including project objectives, components, and innovation aspects)	<p>While urban mobility is crucial to improve citizen’s quality of life in Montego Bay, it is closely linked to global warming that causes climate change. Based on the greenhouse gas (GHG) emission inventory for Montego Bay, Jamaica,⁷ a total of 0.85 MtCO₂e/year are emitted to the atmosphere, of which more than one third come from mobile units, predominantly vehicles. The same study found that this is projected to increase by approximately 100% by 2030 if changes are not implemented.</p> <p>To combat the increase in emission of GHG caused by the urban mobility within the transport sector, the Government of Jamaica (GoJ) is seeking to move towards a more sustainable low-carbon transportation path through the design and implementation of an integrated traffic management system in Montego Bay. The main components of the project include: (i) Preparatory Studies including a review of relevant policies, laws and regulations; and a mobility demand Study for Montego Bay to better understand the current and projected future needs, modal split, and transportation management parameters; and (ii) Investment in the design and implementation of an Integrated Traffic Management System and Integrated Operations Control Center (IOCC) that will better incentivize regulatory compliance and efficiency in the flow of traffic in the city, leading to a reduction in greenhouse gas emissions among other benefits.</p> <p>Innovative elements will include the use of information technology such as real-time programming of traffic light sequencing, integration and coordination of traffic signals, and installation of traffic cameras. These technologies will allow for a more efficient use of scarce resources in traffic management while yielding better environmental outcomes.</p>
Expected CTF Financing (million USD)	5
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan (USD4M) and grant for technical assistance (USD1M)

⁷ Geoadaptive, 2014. *Greenhouse Gas Emissions Inventory, Montego Bay, Jamaica*. IDB. 2015. One Bay for All. Sustainable Montego Bay Action Plan.

Expected Leveraging and Co-financing by Source (million USD)	This proposal is part of an Integrated Urban Revitalization Project currently being scoped by the IDBG with the Government of Jamaica. That operation will likely include the creation of a large green public area on the waterfront (financed largely by counterpart funding of approximately USD5M), as well as strategic redevelopment of the main Market (loan value TBD), and housing improvements (USD5M request to IDB already received from GoJ) among others.
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD
	Installed capacity (MW): NA
	Energy savings (MWh; specify total or annual): NA
	Other key indicators/targets, as applicable: TBD
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q1 2018
Expected Date of MDB Board (month and year)	Q2-2018
Status of Consultation with Recipient Country	Advanced: The IDBG has been providing Technical Assistance (including detailed background studies) under the Emerging and Sustainable Cities Initiative to Montego Bay since 2012, culminating in the One Bay for All Action Plan which is widely viewed as the blueprint for transforming the city to greater sustainability. The proposed urban transportation efficiency project is one of the priority investments identified in the One Bay for All Plan. This proposal has been developed in conjunction with the Urban Transit Company and the National Works Agency that have been conducting further surveys and analysis in support of enhanced traffic management. These agencies are very interested in the prospect of CTF support for the finalization of the design and implementation. The IDBG is particularly well placed to support this initiative, since we have been financing a similar traffic management system in the capital, Kingston.

**Project Concept for DPSP III – IDBG – Multi Country
Latin American Distributed Energy Fund (LADEF)**

Country	Peru, Ecuador, Colombia, Nicaragua and Bolivia
Project Title	Latin American Distributed Energy Fund – LADEF
Investment Area	Distributed Generation
Implementing MDB (specify public or private)	IDBG-private window
Brief Description (including project objectives, components, and innovation aspects)	<ul style="list-style-type: none"> • Projects will generate clean energy and feed it to the peripheral segments of the distribution networks, thus minimizing transmission losses and improving system reliability. • Expected technologies are: 70% mini-hydro; 15-30% wind, 15-30% PV • LADEF will create a “single window” for developers, offering three instruments (capital, senior debt and subordinated debt), and encouraging the participation of banks through financing schemes where the Fund takes on capital and subordinate tranches in the start-up stage of DG projects, and invites banks to participate in senior tranches in later stages. • The Fund will also provide technical support and supervision of plant operation and management, by a specialized service provider. • Accompaniment will be provided, in order to generate positive impacts on local communities. • Projects will improve climate resilience of communities located far away from main transmission infrastructure.
Expected CTF Financing (million USD)	USD3M
Financial Instrument (grant, loan, guarantee, equity, etc.)	Equity
Expected Leveraging and Co-financing by Source (million USD)	IDB (MIF): \$3M Other equity and debt for LADEF: \$50M Other equity and debt for the projects: \$8M
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 0.070 per year
	Installed capacity (MW): 24
	Energy savings (MWh; specify total or annual):
	Other key indicators/targets, as applicable
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q1-2018
Expected Date of MDB Board (month and year)	Q2-2018
Status of Consultation with Recipient Country	To be undertaken

Project Concept for DPSP III – IDBG – Mexico
Developing the Distributed Energy Financing Market in Mexico

Country	Mexico
Project Title	Developing the Distributed Energy Financing Market in Mexico
Investment Area	Distributed Generation
Implementing MDB (specify public or private)	IDBG – public window
Brief Description (including project objectives, components, and innovation aspects)	<p>The Mexican net-metering regulations allow for auto-generation below 30 KWp without special permits and up to 500 KWp with a simple grid connection. More than a quarter of Mexico’s five million SMEs could benefit in the long-term from installed distributed energy.</p> <p>However, access to financing is a significant barrier to renewable energy investments in Mexico, due to the following sector specific factors: (i) the high initial investment cost; (ii) the banks’ apprehension to develop new or unproven business/products lines, linked to the lack of relevant expertise to analyze and structure energy projects with weak credit and/or unfamiliar risk profiles of potential clients (e.g., energy users or generators); (iii) the lack of sufficient regulatory incentives; (iv) tightened Basel III regulations limit the ability of banks to lend long-term (i.e. at most 10 years), and (v) despite PV cost reductions and the presence of local technology providers and manufacturers in Mexico, the absence of access to adequate long-term finance, suitable business models, and the lack of information and awareness have stymied the massive application of this technology.</p> <p>All these factors have resulted in the lack of adequate financial instruments to support distributed energy projects, which translates into relatively high transaction costs and high interest rates or excessive requests for collateral.</p> <p>The program goal is to create a massive financing market for photovoltaic installations and address current market barriers. The program will develop a comprehensive package of bankable business models for distributed solar generation for (i) SMEs in the hotel sector, (ii) exporting SMEs and clusters, and (iii) access to renewable energy mini-grids applying international best-practice adapted to the Mexican context, and with a view to create lessons learnt and resilience for replicability in other LAC countries.</p> <p>The program will provide an innovative liquidity guarantee as support for the operational financing requirements of beneficiary projects through contingent credit lines that address the temporary shortage of cash flow throughout the project’s lifetime. This liquidity guarantee will allow investments to bridge the risk of</p>

	<p>weaker than expected power generation or lower than expected energy prices and thereby ensure the debt service. The proposed activities are:</p> <ul style="list-style-type: none"> • Preparation of a national market study on the specific potential for installations in SMEs in the hotel sector, exporting SMEs, and in unconnected remote areas such as eco-hotels. • Development of a bankable business and financing models differentiated by end-consumers. • Development of a first-loss guarantee fund to cover credit risks for financial institutions pioneering in the financing models. • Development of a financial strategy with longer term tenors and lower cost of capital through grant resources, to address perceived technology risks and incentivize financial institutions' risk-taking, including local currency lending. • Institutional coordination to ensure an alignment of incentives among existing strategic partners (national development bank, government agencies, public utility, technology providers and manufacturers).
Expected CTF Financing (million USD)	9M loan, 1M grant for technical assistance
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan
Expected Leveraging and Co-financing by Source (million USD)	National development bank: 40M Local financial institutions: 40M Private investors: 20M
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD
	Installed capacity (MW): TBD
	Energy savings (MWh; specify total or annual): N/A
	Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q2 2018
Expected Date of MDB Board (month and year)	Q3 2018
Status of Consultation with Recipient Country	Initial consultations

**Project Concept for DPSP III – IDBG – Multi Country
Risk Tolerant Financial Instruments to Mobilize Private Capital**

Project Title	Risk tolerant financial instruments to mobilize private capital		
Country	Mexico, Colombia, Chile, Brazil, Peru, Guatemala, Ecuador, Honduras, Nicaragua, Bolivia, Jamaica, Haiti, Guyana		
Investment Area	<input checked="" type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input checked="" type="checkbox"/> Sustainable Transport
	<input checked="" type="checkbox"/> Distributed Generation	<input checked="" type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input checked="" type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	IDB Group (private window)		
Brief Description (including project objectives, components, and innovation aspects)	<p>The objective of the program is to provide a series of financial instruments that would help credit enhance or provide risk-tolerant capital for investments that would provide valuable demonstration or significant scale-up of projects with high mitigation potential and implementing innovative technologies, business or financing models. Below we provide three challenges and opportunities, that are relevant transversally across sectors and technologies of CTF focus, along with the financial instruments and rationale for utilizing concessional/ risk-tolerant capital to help address them:</p> <p><u>Area #1 - Mobilization of capital markets</u></p> <p>Challenge/opportunity. The volume and type of financial resources required for development at scale (beyond the initial phase) of clean energy and transport infrastructure require the development of financing solutions and investment vehicles that allow participation of a larger scope of capital market participants (incl. institutional investors).</p> <p>Relevant financial instrument. Risk mitigation instruments (RMIs) and backstop bond subscriptions.</p> <p>Relevance of the use of concessional finance. RMIs are required to credit enhance projects or portfolios whose real or perceived risks may not meet the requirements of certain capital market participants; in such cases, concessionality may be required in the form of reduced pricing or subordination.</p> <p>Backstop bond subscriptions are required when the innovative (and thus, less understood) profile of a bond's underlying assets may require mitigating placement risk with an MDB willing to play an anchor investor role; in such cases, concessional finance could be required to co-fund such anchor investor position. Typically, the MDB's backstop subscription would be provided ahead of formally launching the issuance and disclosed to market. The subscription would then be reduced as a function of investors' appetite down to an adequate floor (especially in case where</p>		

	<p>anchoring the transaction around an MDB would be viewed as a key risk mitigant for noteholders).</p> <p><u>Area #2 – Mobilization of commercial bank non/limited-recourse financing</u></p> <p>Challenge/opportunity. In certain development markets (most commonly in those with sub-investment grade ratings and/or not fully developed financial markets) availability of non/limited-recourse project financing (particularly in terms of tenors, but also in terms of currency, among other) is not adequate to allow the more capital intensive clean technologies to be competitive. This normally have to do with restrictions posed by general investment conditions in the country, regulatory risk, or specific challenges associated with off-takers or tender/PPA provisions, among other.</p> <p>Relevant financial instrument. Risk mitigation instruments</p> <p>Relevance of the use of concessional finance. RMIs, for example in the form of refinancing guarantees, could allow sponsors to utilize shorter-term financing solutions, such as mini-perms, and, conversely, allow commercial banks with shorter tenor or more limited risk-taking possibilities (either because of lack of experience, banking regulatory requirements, etc.) to participate in the initial financing of these projects. Ongoing liquidity support may also be provided as a structural enhancement to crowd in financing into projects that would otherwise not be financeable on commercial terms and conditions.</p> <p><u>Area #3 – Mobilization of risk/growth capital</u></p> <p>Challenge/opportunity. Certain clean technology investments are often developed by companies with limited capital relative to the size of the investments required by their clients. This is typically the case of most ESCOs, as well as of innovative distributed RE companies implementing third-party finance models. Taking their businesses to scale requires growth capital and debt leveraging not always available in local capital markets.</p> <p>Relevant financial instrument. Equity/mezzanine capital</p> <p>Relevance of the use of concessional finance. Equity/mezzanine capital from concessional sources could be required to supplement similar positions taken by MDBs (but which are limited in size by risk management guidelines) and/or to take subordinated positions that allow further debt leveraging of the company.</p>
<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Phase I: USD 32M Phase II: USD 120M</p>
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>Guarantees, loans, equity, backstop bond subscriptions, TA grants</p>

<p>Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.</p>	<p>Leverage in individual projects in the Program will typically range between 1:4 and 1:10.</p> <p>Co-financing IDBG: USD 50-80M Project sponsors: USD 50-100M Co-lenders / B-lenders / Bond investors: USD 100-200M</p>
<p>Expected Date of Submission to CTF Trust Fund Committee</p>	<p>March 2018</p>
<p>Expected Date of MDB Board</p>	<p>Most projects will be submitted between Q3 2018 and Q1 2019</p>
<p>Status of Consultation with Recipient Country</p>	<p>To be undertaken</p>

Project Concept for DPSP III – IFC – Global Renewable Distributed Generation

Country	Global Program		
Project Title	Renewable Distributed Generation		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation: X	Solar Energy: X	
Implementing MDB (specify public or private)	International Finance Corporation - Private		
Brief Description (including project objectives, components, and innovation aspects)	<p>Two primary forces are driving the need for distributed energy generation in coming years: 1) rising peak energy demands through localized energy solutions (peak shaving), and 2) energy access to the 1.4 billion (mostly poor) people that are not connected to electricity grids. Distributed generation (DG) assets are modular and adaptable to a variety of applications and hence are best suited to address both these needs.</p> <p>For industrial and commercial customers, peak demand charges can at times make up to 30% of the utility bill. Distributed generation can be used to save money by lowering the reliance on expensive utility generated energy at peak times as well as providing overall energy security (captive power). Peak shaving also helps reduce the likelihood of grid outages, and reduces the need for costly generation and distribution upgrades for utilities.</p> <p>On the bottom of the pyramid opportunity, while almost 2 billion people across the world have been connected to the grid over the last twenty years, one in five still lacks grid access. About 1.4 billion people (~300 million households) continue to lack access to basic energy services and electricity. The total annual expenditure by the global poor on traditional energy solutions is estimated at \$37 billion, with kerosene and other liquid (fossil) fuels burnt to meet lighting requirements in households without electricity alone causing about 190 million metric tons of CO2 emissions annually. The cost of stringing power lines that carry centrally generated energy into remote or remaining low income areas is expensive. Distributed energy systems - particularly solar PV, facilitated by falling prices and unmatched modularity, offer a solution to reach these energy-poor households.</p> <p>The program will stimulate establishment and scaling of new viable business models structured around delivering energy solutions by private sector in off-grid or poor-quality-grid settings. The program may need to provide a greater degree of risk mitigation compared to grid connected RE.</p>		
Expected CTF Financing (million USD)	USD 30 million		

<p>Financial Instrument (grant, loan, guarantee, equity, etc.)</p>	<p>Majority of the funds are expected to be deployed in a risk-taking manner, through either assuming subordinated lending or equity positions in the capital structure.</p> <p>The program will work with strong sponsors with experienced local teams and sound business approaches and will target markets with favorable policy framework and market potential. Nevertheless, the current nascent and dynamic nature of the DG markets, with potentially high speed of technological and regulatory changes, pose significant uncertainties and risks to the first mover DG projects. In addition, the untested business model, particularly as it relates to technology obsolescence, offtake credit risk, scale up/ financing, regulation and FX, further elevate the level of uncertainty.</p> <p>To mitigate these effects, some funds will need to be provided in form of contractually subordinated loans (to help attract commercial lenders), early stage equity (to help get ventures off the ground), risk participations or first-loss guarantees, and advisory grants.</p> <p>Specific financing instruments will be selected and tailored at a project level reflecting specific project risks, cost structure, micro-economic conditions, sectoral dynamics, etc.</p>
<p>Expected Leveraging and Co-financing by Source (million USD)</p>	<p>USD 105 mil, including funds provided by IFC, project sponsors, and other investors and lenders</p>
<p>Expected Results</p>	<p>GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD at the time of the program proposal</p> <p>Installed capacity (MW): TBD</p> <p>Energy savings (MWh; specify total or annual): TBD</p> <p>Other key indicators/targets, as applicable: TBD</p>
<p>Expected Date of Submission to CTF Trust Fund Committee (month and year)</p>	<p>06/2018</p>
<p>Expected Date of MDB Board (month and year)</p>	<p>12/2018</p>
<p>Status of Consultation with Recipient Country</p>	<p>Consultations with all relevant stakeholders, financiers, and beneficiaries are ongoing. IFC's activities in each country will fully conform to the WBG's Country Partnership Framework objectives, sector strategies, and IFC country engagement.</p>

Project Concept for DPSP III – IFC – Global Waste to Energy

Country	Global		
Project Title	Waste to Energy		
Investment Area	Energy Storage: X	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation: X	Solar Energy:	
Implementing MDB (specify public or private)	International Finance Corporation – Private		
Brief Description (including project objectives, components, and innovation aspects)	<p>The global Waste to Energy (WtE) market is expected to reach US\$44.0 billion by 2024 from a base of US\$25.3 billion in 2013, growing at a CAGR of 5.1%. A large amount of this growth is expected to be driven by emerging markets that are looking to improve their waste management systems. In India alone, new projects with a combined treatment capacity of 30,000 to 40,000 tpd or the equivalent of 400-500 MW of power generation are expected to be commissioned between 2016 to 2021.</p> <p>Growth in WtE in emerging markets stems from the following factors:</p> <ul style="list-style-type: none"> • Increase in waste volumes: Significant increase in MSW and non-hazardous industrial waste volumes in emerging markets is driven by growing economic prosperity and urbanization. The growing urban population in these markets is straining the existing waste management systems in many developing countries, with negative effects in health, environmental ecosystems, and climate. • Increase in private sector participation through PPPs: According to one report, municipalities in developing countries might be spending 20% - 50% of their budgets on solid-waste-management. As a result, many municipalities are looking to the private sector waste operators to get involved through concessions or other forms of PPPs to take away the financial pressure and inject much-needed expertise into the local waste management. • Land constraints: Large sites for landfills are no longer available or are too expensive or too near urban centers. The governments are forced to move away from landfills as a treatment and disposal solution to other more efficient and environmentally friendly alternative solutions. • Shift towards renewable energy: Governments look at WtE as a win-win solution for both waste disposal and clean energy generation. As such, WtE projects are expected to also benefit from enabling policies that support renewable energy in many developing countries. <p>The project will manage increasing municipal solid waste (“MSW”) in a sustainable way (i.e. generating clean energy through WtE), and support renewable sources of energy to combat climate change. The project will have drastic impact on climate change mitigation through three main ways (i) diversion of organic (biogenic) waste from dumpsites where it produces methane, a potent greenhouse gas ("GHG"); (ii); displacing fossil fuel electricity</p>		

	<p>generation with a renewable, baseload source; and (iii) reduce energy consumption by using the recovered recyclable content vs. using virgin material to produce commodity feedstocks (e.g. plastic, metal, fiber). The Project will also help facilitate inclusive growth since the poor suffer disproportionately due to improper waste disposal.</p> <p>The project will initially focus on Waste to Energy, but depending on the market situation other technologies for waste disposal such as anaerobic digestion and composting could be considered, as well as waste collection, transport, and treatment of hazardous waste.</p>
Expected CTF Financing (million USD)	USD 40 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	<p>Funds might be provided in form of senior loans or contractually subordinated loans (to help attract commercial lenders), early stage equity (to help get ventures off the ground), risk participations or first-loss guarantees, and advisory grants.</p> <p>Specific financing instruments will be selected and tailored at a project level reflecting specific project risks, cost structure, micro-economic conditions, sectoral dynamics, etc.</p>
Expected Leveraging and Co-financing by Source (million USD)	USD 200 mil, including funds provided by IFC, project sponsors, and other investors and lenders
Expected Results	<p>GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD at the time of the program proposal</p> <p>Installed capacity (MW): TBD</p> <p>Energy savings (MWh; specify total or annual): TBD</p> <p>Other key indicators/targets, as applicable: TBD</p>
Expected Date of Submission to CTF Trust Fund Committee (month and year)	10/2018
Expected Date of MDB Board (month and year)	12/2019
Status of Consultation with Recipient Country	Consultations with all relevant stakeholders, financiers, and beneficiaries are ongoing. IFC's activities in each country will fully conform to the WBG's Country Partnership Framework objectives, sector strategies, and IFC country engagement.

Project Concept for DPSP III – World Bank – Brazil
Financial Instruments for Brazil Energy Efficient Cities – FinBRAZEEC

Country	Brazil		
Project Title	Financial Instruments for Brazil Energy Efficient Cities - FinBRAZEEC		
Investment Area	<input type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	World Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>The objective of this program is to: (i) provide innovative solutions to overcome key barriers for investment in urban EE in Brazil, namely municipal credit risk, constrained balance sheets, high transaction costs, and; (ii) provide technical support the Brazilian government in achieving its EE commitments. To overcome the challenges to invest in EE in the urban industrial and street lighting sectors, FinBRAZEEC proposes the creation of a EE Facility that will offer financing (concessional loans, guarantees, and potentially equity⁸) to EE projects in these sectors. The objective of this Facility and underlying financial arrangements is to create new asset classes that can attract the interest of a wide range of investors and bondholders. The EE facility will be managed by a local public bank⁹.</p> <p>This proposal envisions a concessional loan of US\$20M from the CTF to the EE facility (housed in the local public bank), operationalized through the World Bank. The World Bank will provide a Deferred Drawn Option (DDO) investment loan of US\$200M to back-stop payments from the facility to its debtors. The World Bank backstopping can improve credit rating (“AAA” of IBRD) of the financial products offered by the local Bank and in turn will boost private investors’ confidence and mobilize private capital at competitive borrowing terms to the EE facility. The World Bank is also applying for funds for the GCF (US\$ 200 MM) to the facility, that, it obtained will help to scale -up the project.</p> <p>Beneficiaries:</p> <p>The immediate beneficiary of the DDO and concessional loans will be the EE facility created by the local public bank. The final beneficiary will be cities and private sector entities investing in public street lighting and industrial EE. The ultimate beneficiaries of the facility will be the population in general, which will receive a better quality of lighting services resulting in an enhanced perception of safety and increased</p>		

⁸ Equity can either be offered through the fund or directly to the projects without aggregation at the fund level.

⁹ The World Bank team has an in-depth engagement with Caixa Economica Federal (CFE), who is expected to play this role.

economic activity and wellbeing of the population at large. On the industrial EE space, the industry will be more competitive, will preserve existing jobs, with co-benefits of cleaner air and water resulting from less industrial pollution.

Components:

These funds will be managed by the same facility, and then be used to finance and/or provide credit and payment guarantees to EE projects in the industrial and street lighting sectors.

In the case of street lighting, the facility will primarily lend to Special Purpose Vehicles (SPVs) established by the private sector, which will be granted concessions by the municipalities to modernize and operate the street lighting system on a PPP basis. The SPVs will use this capital to invest in EE equipment and provide services to operate and maintain this equipment over a fixed period corresponding to the duration of the concession contract. The municipality will pay a monthly fee (required revenue) to the concessionaire (resulting from a competitive bid). Typically, costs for street lighting services in Brazil are funded by a dedicated levy on the electricity consumer. Payments made by the municipality to the SPV will be used by the SPV to repay the FinBRAZEEC EE facility, and ultimately by the EE facility to repay its investors and debtholders, including the CTF. If there is a default on the payment stream from the EE facility to its debtors, the World Bank DDO may be called to back-stop a portion of the EE facility's liability. A sovereign guarantee will back-stop the CTF loan and the World Bank DDO loan. The proposed size for the street lighting modernization program (considering US\$210M from CTF and GCF combined and a US\$ 200M IBRD IPF DDO) corresponds to approximately 1.6 million luminaires replaced, roughly 8.7% of Brazil's total, benefiting a population of about 18.2 million inhabitants.

In the case of Industrial Energy Efficiency, a special account/fund should be created within the EE facility, which will make investments in the industrial customer's premises (host company) in exchange for a fixed payment which represents the deemed energy savings for the company. This business model offers several advantages, the main one being the provision of an off-balance sheet financing vehicle, therefore removing one of the main barriers for industrial customers to invest in EE that is the lack of certainty in the stream of payments deriving from EE gains. Furthermore, by simplifying Measurement and Verification (M&V) and giving more certainty to cash flows, the mechanism will enable the creation of a new asset class for investments in energy efficiency, therefore attracting a wider range of potential investors, including those interested in investing in green bonds. Debentures issued by the facility will likely qualify as green bonds. In case there is a default on the payments from the industrial companies to the EE facility or from the facility to its debtors, the World Bank DDO may be called to back-stop a portion of the EE facilities' liability. A sovereign guarantee will back-stop the CTF and GCF loans and the World Bank DDO loan.

	<p>Innovative aspects</p> <p>Caixa Econômica Federal (CEF) is the public financial institution which will be responsible for identifying, appraising, analyzing credit risks, approving, and investing (or providing credit enhancements) to a pipeline of EE sub-projects in the industrial and public street lighting sectors. CEF is well positioned to play those roles, given its knowledge of the WB lending process, its granularity (coverage in the entire country), its familiarity with many of the facility potential clients, and the fact that CEF has decentralized technical skills to identify and appraise projects.</p> <p>It is envisioned that the so called “facility” can be structured as a senior-subordinate Loan (A/B loan), with CEF’s leading a syndication arrangement with multiple lenders. CEF could be an A lender, holding a subordinate component of the overall loan, while other private lenders would hold senior components of the Loan. A Co-Lender agreement would provide the relative payment priorities. Details are yet to be discussed.</p> <p>The Loan will charge risk-based fees for each product that it offers to potential PPPs or aggregators (e.g. consortium of cities organized under a single PPP). Sub-projects need to comply with eligibility criteria to benefit from the IBRD and GCF and CTF lending support.</p>
<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Expected CTF financing: US\$ 20M</p>
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>Loan</p>
<p>Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.</p>	<p>The total estimated financing of the FinBRAZEEC EE Facility is \$1,006M (\$722 M for the Street Lighting PPP and \$279 M million for the F2E sub-programs, plus \$5M of technical assistance.</p> <p>As previously mentioned, the project seeks concessional loans from GCF and CTF. The concessional loans will flow through the World Bank to the local public bank’s EE Facility. It is currently estimated that \$82 M of the concessional loans will be directed to investments in industrial EE and around \$214M to investments in public street lighting EE and \$4 M in technical assistance. Concessional lending to private partners is required in the current context of high local interest rates in Brazil, the high volatility of the exchange rate which triggers high hedging costs, as well as municipal credit risk in the case of public street lighting. Working with GCF also attracts the interest of local financial institutions and provide a “seal of approval” on the quality and perception of climate-friendliness of investments, attracting interest from other financiers. In principle, CEF would contribute with \$180 million in A loans. The exact contribution of CEF is still being discussed.</p>

	<p>The financing structure also includes the World Bank provision of \$200 M as a DDO Investment project financing (IPF), in addition to a potential IFC \$25M equity or mezzanine debt participation. World Bank DDO IPF is needed to improve the credit rating of the facility to attract a wider range of investors and to reduce the facility’s cost of funding (including loans and potentially green bonds). Equity or Mezzanine debt from IFC, the private arm of the World Bank, will be important to increase private sector investor confidence and attract additional sources of equity to the transactions.</p> <p>The proposed structure is expected to leverage an additional \$400M from other private financiers. It is also expected that the private sector will provide volumes of equity of about \$100M to support at sub-project level.</p> <p>On this basis, the total estimated leverage of the CTF + GCF loans is about than 1:36.25 (i.e., every dollar of CTF concessional funding will secure \$36.25 of additional funding for the project from both public (20% of total project) and private (50% of total project) sectors. Private sector is fundamental in order bring scale to investments in EE in these sectors in Brazil. Other details about financing leverage as shown in the following table:</p> <table border="1" data-bbox="548 905 1170 1108"> <tr> <td colspan="2">Financing leverage</td> </tr> <tr> <td>WB / (CTF + GCF) ratio:</td> <td>1.67</td> </tr> <tr> <td>Private / (CTF + GCF) ratio:</td> <td>1.32</td> </tr> <tr> <td>Total / (CTF + GCF) ratio:</td> <td>5.8</td> </tr> </table>	Financing leverage		WB / (CTF + GCF) ratio:	1.67	Private / (CTF + GCF) ratio:	1.32	Total / (CTF + GCF) ratio:	5.8							
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Expected Results	<p>GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 1,19M tons CO2 eq/year</p> <table border="1" data-bbox="548 1220 1195 1419"> <tr> <td colspan="3">TOTAL GHG reduction (13 years)</td> </tr> <tr> <td></td> <td>Tons Per Year</td> <td>Tons - Lifetime</td> </tr> <tr> <td>Industrial EE</td> <td>1,031,721</td> <td>13,412,368</td> </tr> <tr> <td>Street Lighting</td> <td>155,185</td> <td>2,017,409</td> </tr> <tr> <td></td> <td>1,186,906</td> <td>15,429,777</td> </tr> </table> <p>Installed capacity (MW): N/A</p> <p>Energy savings (MWh; specify total or annual):</p> <p>1.46 TWh per year (electricity) 14.3 Million MMBTU per year (natural gas)</p> <p>Other key indicators/targets, as applicable:</p>	TOTAL GHG reduction (13 years)				Tons Per Year	Tons - Lifetime	Industrial EE	1,031,721	13,412,368	Street Lighting	155,185	2,017,409		1,186,906	15,429,777
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Expected Date of Submission to CTF Trust Fund Committee¹⁰	FY18
Expected Date of MDB Board¹¹	FY18
Status of Consultation with Recipient Country	The project has been provided no Objection by the National Designated Authority for GCF funds, Caixa Economica Federal do Brazil has accepted to become the intermediary financier and agent and submitted the Carta Consulta to COFIEX (committee of approval of international financed project). CMU is leading parallel discussions with Treasury to ensure the availability of sovereign guarantee for the IBRD DDO.

¹⁰ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

¹¹ Bank Board dates should be no later than 12 months after CTF approval.

**Project Concept for DPSP III – World Bank – Colombia
Colombia Clean Energy Development Project**

Country	Colombia		
Project Title	COLOMBIA CLEAN ENERGY DEVELOPMENT PROJECT (P161713)		
Investment Area	<input checked="" type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input checked="" type="checkbox"/> Distributed Generation	<input checked="" type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	World Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>The project development objective is to support Colombia’s clean energy goals of increasing electricity generation capacity from non-conventional renewable energy sources and energy savings in the industrial sector mobilizing private investment through a combination of <i>technical assistance</i> and <i>credit-enhancement</i> products.</p> <p>On the technical assistance side, the GoC requested the WBG to support them in the design of auctions and in improving and modernizing market and commercial rules to create a competitive, level, playing field for renewable energy. Under the credit-enhancement provision, the WBG is planning to guarantee FDN for innovative credit enhancement and risk mitigation products so as to unlock significant private investments involving renewable energy and energy efficiency projects.</p> <p>There is limited experience in the implementation of non-conventional renewable energy (both grid connected and in distributed generation schemes) and energy efficiency projects with private financing. This proposal is intended not only to scale-up the support currently provided to FDN in line with the large potential for RE in Colombia, but also to explore and test how to unlock additional deployment mechanisms such as energy storage systems, distributed generation (e.g. rooftop and floating solar) as well as supporting energy service companies in the delivery of performance contracts for buildings and industrial energy efficiency. CTF and IBRD guarantees will support FDN in creating and delivering suitable financial product interventions in its initial phase, the proposed Project will also help build a track record and create a scalable platform for private investments. Once initial phase is financed and implemented with IBRD-CTF support, GoC and FDN can replicate the proposed structure by learning and adjusting from this initial experience.</p>		

Beneficiaries:

The proposed Project beneficiaries will primarily be private and public sector institutions as well as industrial and residential consumers. The IBRD and CTF guarantee will directly benefit FDN, as the public-sector agency in charge of developing the clean energy program, they will be able to provide additional contingent capital, and will be a direct beneficiary of technical assistance.

Indirect beneficiaries include:

- the private investors covered within the initial phase of the Project through increased certainty of investment returns,
- XM, the market operator, through increased diversity of resources during times of hydro scarcity or other constraints,
- industrial consumers, through cost reductions and energy savings through energy efficiency actions,
- current and future consumers, through reliable energy at competitive tariffs,
- the population living in areas where new wind and solar resources will be deployed, with the possibility of earning extra income without being displaced,
- and ultimately GoC, through mobilizing private investments in clean energy to meet their NDC and other clean energy targets

Components:

The Project will support the development of clean energy projects, including both renewable energy and energy efficiency. The goal is to initiate an effort that will contribute to unlock Colombia's abundant clean energy resources through targeted technical assistance and credit enhancement and de-risking instruments. The proposed activity will support three categories of projects via technical assistance and financial instruments:

- Category 1. Large-scale renewable energy (wind, solar, > 20 MW).
- Category 2. Small-scale renewable energy (<20 MW)
- Category 3. Energy efficiency activities in the industrial sector.

Proposal of additional funding

The proposed request is to supplement funds of US\$ 50 million to the existing CTF contribution of US\$ 41 million to the Colombia Clean Energy Development Project (P161713). From the US\$ 91 million, US\$ 88 million will be used to provide guarantees, and the rest would support technical assistance (US\$ 3 million). The combination of IBRD-CTF guarantees, is expected to mobilize about US\$ 1.67 of private investments in the initial phase, which is over 9.3 times the amount of the guarantees. The total project size is close to US\$ 2.2 billion. Once initial phase is financed and implemented with IBRD-CTF support, GoC and FDN can replicate the proposed structure by learning and adjusting from this initial experience.

The Technical Assistance Component of US\$ 3 Million will be used as follows;

1. Strengthening of regulatory framework and market rules to integrate large and small scale renewables.

2. Strengthening of regulatory framework and market rules to prepare the system for the deployment of storage technology (to support the development of a vibrant demand side retail market in combination with solar) (US\$ 3 Million).

This second TA component would consider the following:

- a) Assess the attractiveness of large scale electric storage to provide a variety of ancillary services in the Colombian power market, specifying the nature of the products involved, at what part of the supply chain storage should be located (generation, transmission, sub-transmission), corresponding benefits to the grid, and cost-attractiveness of electric storage when comparing to other forms of storage in the Grid (e.g. thermal, demand-side-management, thermal-solar, hydro, pumped hydro, etc.)
- b) Review the above analysis considering expected changes in the supply and demand sides, such as a larger percentage of renewables, electric cars, need for fast ramp-up generators (duck-curve), daily and hourly complementarity between hydro, solar and wind energy.
- c) Evaluate the institutional arrangements and regulations necessary to be put in place to “monetize” the benefits of electricity storage in each part of the supply chain. Discuss, market rules, dedicated auctions, etc. Compare the existing market mechanisms in the Colombian market with those in countries/regions where electric storage has ramped up.
- d) Assess the technical and economic aspects of installing storage behind the meter and identify situations where it may make more sense, including, inter alia, the possibility of load management and price arbitrage opportunities when Time of Use Rates are present.
- e) Support piloting of a subproject that includes storage.

Indicative Project Costs, Guarantee Sizing, and Private Sector Investments

Description	Energy Efficiency Window	Renewable Energy Window (Small Scale < 20 MW)	Renewable Energy Window (Utility Scale)	Total
Timing (Year)	2018 - 2023	2018 - 2023	2020 - 2023	
Location		Across the country	La Guajira Area (large scale wind, solar)	
Installed Capacity (MW)		1002.00	703.00	1705.00
Generation or savings (GWh/year)	1258.30	4031.00	2,293.60	7,582.90
Capital Structure				
Total Investments (Million USD)	249.07	1,295.15	684.93	2,229
Equity (Million USD)	62.27	323.79	171.23	557
Debt (Million USD)	186.8	971.36	513.7	1,672
Of which commercial debt (commercial banks and Institutional Investors) (Million USD)	124.5333333	647.5733333	342.4666667	1114.573333
Of which DFIs and ECAs (including FDN, IFC and MIGA supported financing) (Million USD)	62.26666667	323.7866667	171.2333333	557.2866667
Total private capital (Million USD)	186.80	971.36	513.70	1,671.86
Guarantee Sizing				
IBRD-CTF Guarantee Amount (Indicative) (Million USD)	12 (IBRD)	64 (IBRD)	15 (IBRD)	179.00
	8 (CTF)	40 (CTF)	40 (CTF)	
Private capital mobilization ratio ^[1] (Private capital / IBRD-CTF Guarantee Size) (Million USD)	9.34	9.34	9.34	9.34
Technical Assistance (Million USD)		2	1	3

[1] Based on total private investment, including commercial debt and equity

	<p>Performance Indicators</p> <p>PDO Statement The project development objective is to assist Colombia in increasing electricity generation capacity from non-conventional renewable energy sources and energy savings in the industrial sector with mobilization of private investment.</p> <p>These results are at: Project Level</p> <p>Project Development Objective Indicators</p> <table border="1"> <thead> <tr> <th rowspan="2">Indicator Name</th> <th rowspan="2">Baseline</th> <th colspan="6">Accumulated Target Values</th> </tr> <tr> <th>YR1</th> <th>YR2</th> <th>YR3</th> <th>YR4</th> <th>YR5</th> <th>End Target</th> </tr> </thead> <tbody> <tr> <td>Avoided Greenhouse Gas Emissions (million tCO₂eq)</td> <td>0</td> <td>1.45</td> <td>1.88</td> <td>2.40</td> <td>2.66</td> <td>2.95</td> <td>55.49</td> </tr> <tr> <td>Non-Conventional Renewable Energy Generation Capacity (MW) (Core)</td> <td>0</td> <td>308</td> <td>479</td> <td>1049</td> <td>1588</td> <td>1705</td> <td>1705</td> </tr> <tr> <td>Increased energy efficiency, energy savings (GWh/year) (Core)</td> <td>0</td> <td>449</td> <td>942</td> <td>1225</td> <td>1225</td> <td>1258</td> <td>1258</td> </tr> <tr> <td>Private capital mobilized (million US\$) – (Number) – (Core)</td> <td>0</td> <td>376</td> <td>589</td> <td>1090</td> <td>1566</td> <td>1672</td> <td>1672</td> </tr> </tbody> </table> <p>Intermediate Results Indicators</p> <table border="1"> <thead> <tr> <th rowspan="2">Indicator Name</th> <th rowspan="2">Baseline</th> <th colspan="6">Annual Target Values</th> </tr> <tr> <th>YR1</th> <th>YR2</th> <th>YR3</th> <th>YR4</th> <th>YR5</th> <th>End Target</th> </tr> </thead> <tbody> <tr> <td>GHG emissions avoided (million tCO₂) – (Number) – (Custom)</td> <td>0</td> <td>1.45</td> <td>1.88</td> <td>2.40</td> <td>2.66</td> <td>2.95</td> <td>55.49</td> </tr> </tbody> </table>	Indicator Name	Baseline	Accumulated Target Values						YR1	YR2	YR3	YR4	YR5	End Target	Avoided Greenhouse Gas Emissions (million tCO ₂ eq)	0	1.45	1.88	2.40	2.66	2.95	55.49	Non-Conventional Renewable Energy Generation Capacity (MW) (Core)	0	308	479	1049	1588	1705	1705	Increased energy efficiency, energy savings (GWh/year) (Core)	0	449	942	1225	1225	1258	1258	Private capital mobilized (million US\$) – (Number) – (Core)	0	376	589	1090	1566	1672	1672	Indicator Name	Baseline	Annual Target Values						YR1	YR2	YR3	YR4	YR5	End Target	GHG emissions avoided (million tCO ₂) – (Number) – (Custom)	0	1.45	1.88	2.40	2.66	2.95	55.49
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<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Expected (additional) CTF financing: US\$50M</p>																																																																				
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>Guarantee</p>																																																																				
<p>Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.</p>	<p>With the additional funding of US\$ 50 million from CTF (and equivalent from IBRD), we expect that the total project size may reach about US\$ 2.2 billion, representing a private capital mobilization ratio of about 9.3 (Private resources over CTF+IBRD guarantees). The program will enable the construction of 1.7 GW of clean generation, and energy savings of 1.2 TWh/yr.</p>																																																																				
<p>Expected Results</p>	<p>GHG emissions reduction (tons of CO₂ eq.; please specify total or annual):</p> <ul style="list-style-type: none"> 55.5 million tons of CO₂ eq for the life of the sub-projects combined <p>Installed capacity (MW): 1,705 MW</p> <p>Energy savings (GWh; specify total or annual):</p> <ul style="list-style-type: none"> 1,258 GWh of energy savings 																																																																				

	Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee¹²	FY18
Expected Date of MDB Board¹³	FY18
Status of Consultation with Recipient Country	<p>The implementing agency for the proposed project will be FDN with the specific function of catalyzing investments in Colombian clean energy infrastructure and addresses market failures that affects optimal infrastructure financing. FDN’s mandate is to be the principal agent in developing the infrastructure finance market in Colombia. It offers products and services, at competitive market rates, that are critical to financing infrastructure—including long tenor loans, subordinated debt, and credit enhancements. On September 2, 2016, FDN entered into an inter-agency cooperation agreement (<i>Convenio Interadministrativo de Cooperación</i>)¹⁴ with the Ministry of Mines and Energy (MINMINAS) whereby FDN and MINMINAS agree to join forces to undertake the technical, financial and legal studies necessary to develop a new Renewable Energy Program (<i>Programa de Energías Renovables</i>, or PER).</p> <p>The World Bank is at advanced stage of negotiation with FDN as part of the existing COLOMBIA CLEAN ENERGY DEVELOPMENT PROJECT (P161713). <i>The addition of CTF funds will not entail additional work and can be handled very smoothly. Furthermore, the WB, together with FDN, has already identified a portfolio of clean energy projects that can be financed by the additional funds made available to the program.</i></p>

¹² 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

¹³ Bank Board dates should be no later than 12 months after CTF approval.

¹⁴ Under Colombian law, “public entities” (which includes *sociedades anónimas de economía mixta* in which GoC has a greater than 50 percent participation) may enter into interagency cooperation agreements (*convenios interadministrativos de cooperación*) in furtherance of administrative functions or to jointly provide services under their responsibility.

Project Concept for DPSP III – World Bank – Morocco Scaling up Solar Power Projects - Commercial Financing

Country	Morocco		
Project Title	Scaling Up Solar Power Projects - Commercial Financing		
Investment Area	<input type="checkbox"/> Energy Storage	<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input checked="" type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	World Bank guarantee		
Brief Description (including project objectives, components, and innovation aspects)	<p>The proposed project concept is a guarantee package from CTF and IBRD that would partially guarantee a commercial loan to Morocco’s sustainable energy agency (MASEN), to allow MASEN to accelerate the process to scale up future development and solar (CSP and PV) power projects in line with their ambitious NDC goals, leveraging private and commercial sources of funding for the first time, rather than relying solely on public sector debt and concessional funding, as previously.</p> <p>The proposed project includes a CTF guarantee of \$50 million and an IBRD guarantee of US\$50 million. The guarantee package from CTF and IBRD would allow MASEN to free up valuable equity and raise longer tenor and lower cost commercial financing to co-invest as part of a blended finance package in the Moroccan Solar Plan 2030¹⁵. The next large projects under this plan are Noor-Midelt phase 2 of about 800 MW and Noor-Tata of about 800 MW as well.</p> <p>Early public support in the form of direct concessional investment financing has been instrumental to kick start the CSP market in Morocco, lowering the development and financing cost in the early phase of the technology’s adoption. The successful deployment of the first demonstration projects has generated interest from private and commercial financiers for the next development phases and thus, reducing initial market barriers. Continued public support is nonetheless required to improve the borrowing terms (interest rate, maturity) to allow for a significant scale up of the initial developments. Over time, the experience gained by blending commercial finance with concessional finance</p>		

¹⁵ Morocco 2030 solar plan has targets of 2000 MW by 2020 and 5000 MW by 2030. Overall, the Government of Morocco ambitions to have 52% of installed capacity from renewable energy (including 20% from solar) by 2030.

	<p>will lead to a more sustainable basis for Morocco to meet its solar plan ambitions in context of its NDC.</p> <p>Morocco also has the ambition of becoming an exporter of renewable electricity to Europe, and Morocco is currently leading the Sustainable Electricity Trade (SET) initiative with four European countries and technical support from the World Bank, with the aim of making this ambition a reality.</p>
Expected CTF Financing (million USD) and justification of concessionality	\$50 million to be structured in the form of a guarantee for the benefit of a commercial bank lending to MASEN. The CTF concessional terms would play a crucial role in raising commercial loan to finance future solar projects.
Financial Instrument (grant, loan, guarantee, equity, TA etc.)	<p>Mainly Guarantee.</p> <p>Guarantees enable attractive pricing and most importantly access to longer maturity debt financing. Possible structures have been analyzed using a combination of IBRD guarantee, combined with a CTF guarantee, with a focus on optimal use of concessional resources, cost of funding, and sustainable debt profiling. In addition, a blend of direct financing and guarantee is also explored in order to buy down financing costs from commercial lenders.</p>
Expected Leveraging and Co-financing by Source (million USD) must include some private, either directly or indirectly over time.	\$50M from CTF and \$50M from IBRD would leverage \$150-\$200 M commercial loan. This would provide MASEN's equity contribution to a future project of a similar magnitude to Noor-Midelt phase 1, which has an aggregate cost of around US\$ 2.3 billion. Such costs will be financed by a combination of commercial and private (debt and equity) financing along with public and concessional financing.
Expected Results	<p>GHG emissions reduction (t): 72 million tonnes of CO2 eq. over lifetime Noor-Midelt Project phases 1 and 2; 200 million tonnes of CO2 eq. over lifetime of Morocco's Solar Plan 2030.</p> <p>Installed capacity (MW): 800 MW for Noor-Midelt phase 2; 5,000 MW for Morocco's Solar Plan 2030.</p> <p>Energy savings (MWh; specify total or annual): N/A</p> <p>Other key indicators/targets, as applicable: Power capacity additions from renewable sources; Commercial debt mobilized through CTF guarantee</p>
Expected Date of Submission to CTF Trust Fund Committee ¹⁶	January 15, 2018, and before MDB Board date imperatively
Expected Date of MDB Board ¹⁷	March 31, 2018

¹⁶ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

¹⁷ Bank Board dates should be no later than 12 months after CTF approval.

Status of Consultation with Recipient Country	Discussions have been on-going with MASEN, the agency in charge of the Noor Plan, and the Government of Morocco on how to bring in more CTF financing as a catalyst to attract more commercial debt into the Moroccan Solar Program. There are on-going discussions between the Bank and Masen on structuring the CTF/IBRD guarantee package so as to maximize its benefit on lowering the cost of the proposed commercial loan.
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Project Concept for DPSP III – World Bank – Turkey
Energy Efficiency in Public Buildings

Country	Turkey		
Project Title	Energy Efficiency in Public Buildings (P162762)		
Investment Area	<input type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	World Bank, KfW		
Brief Description (including project objectives, components, and innovation aspects)	<p>The project objective is to reduce energy consumption public buildings in Turkey. The project will seek to develop and implement a national-scale program to improve the energy efficiency (EE) in central and municipal government buildings by establishing and capitalizing a dedicated, specialized, sustainable energy efficiency revolving fund (EERF) that can finance and implement EE investments in public buildings and facilities at scale.</p> <p>As government buildings in Turkey have budgetary limitations and borrowing restrictions, compounded by other barriers to EE, limited progress has been made in this sector. The World Bank has developed a new financing scheme for public buildings, utilizing an innovative approach called an energy service agreement, or ESA. Under an ESA, the EERF offers a full package of services (energy audit through commissioning) to identify, finance, implement and monitor EE investments for public clients on a revolving basis. The client is required to continue to make their “baseline energy bill payments” into an escrow account, which are then used to pay their reduced bills and repay the investment and associated fees to the EERF for the full contract duration. In this way, the government building administrator does not have to assume any debt and is only obliged to pay what it is paying today without taking on associated investment or performance risks. The EERF would then subcontract all the energy audit, design and implementation to local construction firms and energy service companies (ESCOs).</p> <p>The project will have two components: (i) EE investments, which will capitalize the EERF and cover the costs for pre-investment (energy audits, technical designs, procurement) and construction works; and (ii) Fund management and TA, which would cover EERF staffing and training, environmental management,</p>		

	<p>monitoring and reporting, capacity building and policy/legal reviews.</p> <p>Basic eligibility conditions and secondary technical and financial criteria will be developed, and would include confirmation of public ownership, structural soundness, etc. along with reasonable technical and financial characteristics (reasonably high baseline comfort/service levels, <10-year simple payback periods, project investments of at least US\$50,000, etc.), and demonstrated payment discipline. Investments would include typical building-level energy measures such as building envelope (windows, doors, wall/roof insulation), heating/cooling systems (boilers, piping and insulation, radiators, valves/controls, chillers, ventilation, solar water heating), pumps/fans, lighting, and improved operations and maintenance practices.</p>
<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Proposed CTF contribution: US\$50 million</p> <p>Creation of an EERF is a new concept in Turkey and poses several significant risks and challenges. The public sector has a number of inherent barriers to EE investments, including perverse incentives, public procurement limitations, constrained budgets for investment and financing restrictions, limited technical and implementation capacity and high transaction costs. The most critical gap is the lack of suitable and sustainable financing mechanisms, along with supporting institutional structures, for public building programs to be implemented at scale. The creation of a national-level program, with access to financing, technical assistance, specialized ESCO procurement schemes with standardized audit/contracts, specialized ESCO windows, etc. could substantially unlock this sector. However, such an undertaking requires substantial support, technical advice, capacity building and risk management, which the World Bank with CTF support would help provide.</p>
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>US\$45 million concessional CTF loan (to be used for initial EERF investments to develop, test and refine EERF scheme) US\$5 million CTF grant to cover TA</p>
<p>Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.</p>	<p>Total estimated project cost: US\$250 million, including US\$150 million (IBRD), US\$50 million (KfW), US\$50 million (proposed CTF)</p> <p>It is proposed that the EERF initially focus on public buildings in order to test the institutional set-up, financing modalities and implementation performance. If successful, such a scheme could easily be expanded to other public sub-sectors (e.g., public lighting, water and sanitation, transport). As savings are realized and repayments from energy savings schemes are made operational, transition arrangements would be developed to develop a more sustainable structure, with a (second phase) or recapitalization of US50-100 million in Year 6, which would</p>

	include private sector co-financing from commercial banks, pooled financing structures, ESCO project financing, and other schemes as appropriate.
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): An analysis of more than 1,000 buildings along with 26 representative energy audits shows that the EERF could result in more than 11.4 million tonnes of cumulative CO ₂ reductions over the lifetime of equipment installed within a 15-year investment period, or about 500,000 tonnes of CO ₂ savings each year. (This assumes the funds revolve for 15 years with a US\$50 million recapitalization in Year 6, which would lead to a total of US\$470 million in total investment by the EERF.).
	Installed capacity (MW):
	Energy savings (MWh; specify total or annual): Similarly, the EERF could result in more than 9,412 GWh in total lifetime energy savings (assuming a 15-year lifetime of installed equipment) or about 627 GWh in annual savings.
	Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee¹⁸	October 15, 2018
Expected Date of MDB Board¹⁹	March 15, 2019
Status of Consultation with Recipient Country	The project is in the current draft Bank Country Partnership Framework for Turkey, which will be submitted for Board approval in late August 2017. The government has initially agreed to the project with the expectation of accessing GCF funds, given the innovative nature of the design and inherent risks. When Turkey's GCF eligibility became unclear, the project was placed on hold by the Treasury. There is a letter of request for the project from the Ministry of Energy and Natural Resources and the addition of CTF funds would be instrumental in helping to allow the project to move ahead.

¹⁸ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

¹⁹ Bank Board dates should be no later than 12 months after CTF approval.

Annex 2: DPSP III Reserve Pipeline and Project Concepts

Summary of CTF DPSP III Reserve Pipeline						
Country	MDB	Project Title	Energy Efficiency	Renewable Energy Plus	Sustainable Transport	CTF Amount (Million USD)
Bangladesh	ADB	Utility-Scale Solar Development - Kaptai Floating Solar Program		25		25
Indonesia	ADB	Geothermal Power Mainstreaming Program		20		
Vietnam	ADB	Accelerated Utility-Scale Solar Program - Floating Solar		50		50
Nigeria	AfDB	Rural Electrification		20		20
Armenia	EBRD	Early Stage Geothermal Development Programme (PLUTO)		6		6
Multi-country (Turkey & Kazakhstan)	EBRD	Gas Sector Energy Efficiency	20			20
Multi-country (Egypt, Kazakhstan, Morocco, Tunisia)	EBRD	Phase 2 (4 of 6 countries) - Industrial Innovation in Energy Efficiency (I2E2) Programme	15			15
Mexico	IDB	Green Housing and Infrastructure Services for Mexican Households	30			30
Multi-country	IFC	Sustainable Urban Transport			45	45
Chile	World Bank	Energy Efficiency Guarantee	40			40
Multi-country (Colombia, Indonesia, Mexico)	World Bank	Energy Efficiency in Oil and Gas	40			40
Indonesia	World Bank	Geothermal Power Development		75		75
Nigeria	World Bank	Climate Innovation Center		5		5
Philippines	World Bank	Renewable Energy Fund		100		100
Vietnam	World Bank	Scaling up Energy Efficiency for Industrial Enterprises	145	301		446
Total			145	301	45	491

Project Concept for DPSP III – ADB – Bangladesh
Utility Scale Solar Development / Kaptai Floating Solar Program

Country	Bangladesh		
Project Title	Utility-scale Solar Development / Kaptai Floating Solar Program		
Investment Area	Energy Storage: XX	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy: XX	
Implementing MDB (specify public or private)	ADB South Asia Energy Division (SAEN – public) Project officer: Hongwei ZHANG		
Brief Description (including project objectives, components, and innovation aspects)	<p><u>Objective</u>: accelerated development of up to 500 MW of utility-scale solar to meet Government near-term targets (500 MW by 2017). <u>Components</u>: (i) 30-50 MW of floating solar in existing Kaptai hydropower reservoir (500 MW potential identified); (ii) upgrade of existing grid infrastructure & generation assets for integrated solar-hydro hybrid operation; (iii) major rehabilitation and upgrade of hydro generation assets; (iv) upgrade of transmission line (if necessary); and (v) conventional ground-mounted solar farms (depending on land availability). <u>Innovation aspects</u>: auction of solar generation tracts to private sector IPPs; first-of-a-kind system in developing Asia, with replication potential across the region and globally</p>		
Expected CTF Financing (million USD)	\$25 million		
Financial Instrument (grant, loan, guarantee, equity, etc.)	CTF soft loan to cover upgrades for solar-hydro integrated operation; possible guarantee or other instrument to support private sector investment in solar generation assets		
Expected Leveraging and Co-financing by Source (million USD)	ADB ordinary capital resources: \$100 million Private sector (IPPs): \$100 million (or more, depending on scale of solar development; ADB Private Sector Operations Department may support selected IPPs if warranted)		
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 100 MW x 4 hours /day x 365 days/year x 0.5 tons CO ₂ e/MWh = 73,000 tCO ₂ e/year		
	Installed capacity (MW): 100 MW <u>minimum</u> (500 MW technical potential has been identified)		
	Energy savings (MWh; specify total or annual):		
	<p>Other key indicators/targets, as applicable:</p> <ul style="list-style-type: none"> • Additional solar parks using ground-mounted systems may be included in the ADB project. • Replication and scale-up potential across developing Asia and globally. ADB is identifying similar investment candidates in Central and West Asia and Southeast Asia (Vietnam) 		
Expected Date of Submission to CTF Trust Fund Committee	December 2018		
Expected Date of MDB Board	June 2019		

Status of Consultation with Recipient Country	Preliminary consultation in Q2 2017; reconnaissance mission being fielded 27 July – 1 August 2017; ensuing project to be re-confirmed in country program for 2019.
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Project Concept for DPSP III – ADB – Indonesia
Geothermal Power Mainstream Program

Country	Indonesia		
Project Title	Geothermal power mainstream program		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy:	Other: Geothermal
Implementing MDB (specify public or private)	Asian Development Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>A. Problem Statement</p> <p>Geothermal is recognized as efficient and large scale renewable energy resources in the world, but its potential has not been fully utilized in developing countries. Indonesia has an identified geothermal project pipeline of 3,200 MW, which accounts for 24% of the capacity of geothermal projects planned globally.</p> <p>There have been two geothermal programs that CTF supported and ADB implemented, namely i) Private Sector Geothermal Energy Program, and ii) Utility Scale Renewable Energy: Geothermal. Those programs contributed to successful financial close of Sarulla Geothermal project and Muara Laboh Geothermal project. Third project, Rantau Dedap Geothermal project, is under due diligence and expected to reach financial close soon. CTF programs have been quite effective to materialize these geothermal power projects.</p> <p>On the other hand, in 2016, only 5% of the country's total geothermal potential was developed. Although there are several geothermal projects that are successfully implemented by private sector as mentioned above, geothermal power has not been reached to mainstreamed base load power source of the country.</p> <p>Furthermore, regulatory environment for geothermal power in Indonesia has changed dramatically since January 2017. Government of Indonesia issued Regulation of Minister of Energy and Mineral Resources No. 12/2017 on the Utilization of Renewable Energy Resources for Electricity Supply (Regulation No.12) in January 2017. The Regulation No.12 intends that the PPA tariff payable by PT Perusahaan Listrik Negara (PLN), a state-owned utility, from renewable energy sources should be aimed at lowering (or at the very least not increasing) the existing average cost of generation (known by its Indonesian acronym, BPP) on the relevant local grid, which often is driven by cheap coal fired power plants especially where geothermal resources can be found. The net result of this new regulation is that PPA tariff for geothermal will be suppressed down to the point where it is difficult for private sector investors to invest in the sector due to insufficient return on the high investment needed upfront for exploration. In addition, the regulation requires that PLN is only permitted to sign PPA with</p>		

geothermal developers where the exploration reserves have been proven. This change brings uncertainty in terms of power offtake and further disincentivizes investment into geothermal. With this recent unfavorable regulatory environment, translating the immense geothermal opportunity into reality in the country is becoming even more challenging than before. Drilling exercises to identify and develop geothermal resource requires very high capital expenditure upfront and results of the exploration would vary. If result were not favorable, private project developer may not recover any investment. Therefore, exploration/development of geothermal is regarded as too risky for private sector to cover and there is still a large gap between private sector's risk appetite and geothermal project's inherent exploration/development risk.

ADB is under discussion with several project developers that have invested in early stage works of geothermal resource development in Sumatra island and Java island, in total equivalent to 440MW size. However, those private developers face difficulty to justify further investment with high exploration/development risk and recent unfavorable regulatory environment with Regulation No.12.

To make geothermal power into mainstream base load power source of the country, additional innovative approach to tackle exploration/development risk of geothermal resource is needed.

B. Proposed Transformation

To encourage private sector investment in geothermal resources in Indonesia, the proposed program is designed to mitigate exploration risk of geothermal resource through using private insurance company's insurance capability. Several project developers in Indonesia have conducted initial exploration surveys for potential geothermal resources. However, to examine accurate generation capacity of the geothermal resources, large scale drilling works are needed. Given its high-risk nature and recent unfavorable regulatory environment due to Regulation No.12, those private project developers cannot justify upfront high capital expenditure to its shareholders, and they need some party to share the risk in case results of exploration are negative. ADB has been discussing solutions for such risk with project developers, and an idea of private insurance product to cover exploration risk has received strong interests from the project developers. A few more additional demonstrative geothermal projects would be needed to prove this new business model, and make geothermal project as mainstreamed base load power source in Indonesia.

C. Innovative features of the proposal

The innovative features of the insurance program are: (i) the use of private insurance company's expertise to cover exploration risk, (ii) leveraged feature of convertible grant to back finance insurance premium, and (iii) replicable model for further investment in

	<p>geothermal once the insurance product for exploration risk in the country is established.</p> <p>ADB will discuss with private insurance companies and the project developers to come up with geothermal exploration risk insurance product.</p>
Expected CTF Financing (million USD)	20 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	<p>Main instrument would be convertible grant to pay premium of private insurance products to cover risk of exploitation of geothermal resources. CTF convertible grant is used initially to pay for the premium of insurance. The insurance would cover ADB's non-recourse loan to the project company for part of the exploration cost, and the insurance (purchased using CTF convertible grant) will cover the resource risk for that ADB loan.</p> <p>Through this structure, private developers appropriately mitigate the exploration risk. If result of exploration is positive and project developers decide to move forward to investment phase, project developer will repay funds from CTF. To the extent the exploration risk insurance product is unfeasible, there may be a possibility to use it as concessional or subordinated debt for exploration/development stage.</p>
Expected Leveraging and Co-financing by Source (million USD)	Use 20 million CTF convertible grant to mobilize approximately 200 million USD.
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 2,337,000 tCO2 per year.
	Installed capacity (MW): total 440MW for two projects
	Energy savings (MWh; specify total or annual):
	Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q2 2018.
Expected Date of MDB Board (month and year)	Q4 2018
Status of Consultation with Recipient Country	Initial discussion with the government on-going

**Project Concept for DPSP III – ADB – Vietnam
Accelerated Utility Scale Solar Program / Floating Solar**

Country	Vietnam		
Project Title	Accelerated Utility Scale Solar Program / Floating Solar		
Investment Area	Energy Storage: XX	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy: XX	
Implementing MDB (specify public or private)	ADB South Asia Energy Division (SEEN – public) Project officer: Shannon Cowling		
Brief Description (including project objectives, components, and innovation aspects)	<p><u>Objective:</u> accelerated development of utility-scale solar to meet Government target of 850 MW by 2020. <u>Components:</u> (i) 100+ MW of floating solar in existing hydropower reservoirs (> 900 MW potential identified); (ii) upgrade of existing grid infrastructure & generation assets for integrated solar-hydro hybrid operation; (iii) major rehabilitation and upgrade of hydro generation assets depending on system age; (iv) upgrade of transmission lines (if necessary); and (v) conventional ground-mounted solar farms (pending availability of land). <u>Innovation aspects:</u> auction of solar generation tracts to private sector IPPs; first-of-a-kind system in developing Asia, with replication potential across the region and globally</p>		
Expected CTF Financing (million USD)	\$50 million		
Financial Instrument (grant, loan, guarantee, equity, etc.)	CTF soft loan to cover upgrades for solar-hydro integrated operation; possible guarantee or other instrument to support private sector investment in solar generation assets		
Expected Leveraging and Co-financing by Source (million USD)	ADB ordinary capital resources: \$100 million Private sector (IPPs): \$500+ million (depending on scale of solar development; ADB Private Sector Operations Department may support selected IPPs if warranted)		
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): <u>100 MW</u> x 4 hours /day x 365 days/year x 0.7 tons CO ₂ e/MWh = 102,200 tCO ₂ e/year		
	Installed capacity (MW): <u>100 MW minimum</u> (> 900 MW technical potential has been identified)		
	Energy savings (MWh; specify total or annual):		
	<p>Other key indicators/targets, as applicable:</p> <ul style="list-style-type: none"> • Additional ground-mounted and marine floating solar may be potentially viable. • ADB is identifying similar investment candidates in Central and West Asia, South Asia (Bangladesh), and Southeast Asia (Indonesia, Lao PDR) 		
Expected Date of Submission to CTF Trust Fund Committee	December 2018		
Expected Date of MDB Board	June 2019		
Status of Consultation with Recipient Country	Related technical assistance agreed in Q2 2017; ensuing project in country program for 2019.		

Project Concept for DPSP III – AfDB – Nigeria
Nigeria Rural Electrification Agency

Country	Nigeria		
Project Title	Nigeria Rural Electrification Agency		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation: X	Solar Energy: X	
Implementing MDB (specify public or private)	African Development Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>In Nigeria, it is estimated that only 36% of the rural population of 90 million people have access to electricity. In 2005, the Rural Electrification Agency (REA) established the Rural Electrification Fund (REF or “Fund”) to support and provide rural electrification through public and private participation in order to achieve more equitable regional access to electricity and stimulate innovative approaches to rural electrification. The REF will provide funding towards the initial capital costs of qualified renewable energy schemes that promote the objectives of the Federal Government of Nigeria (FGN) in terms of rural electrification and aims at encouraging the participation of a broad range of potential service providers, including community-based organizations, private sector entities, non-governmental organizations and others who may have been excluded in the past due to high start-up costs. The Fund will provide low cost funding in an attempt to address barriers to investment, to support small scale IPPs (for local communities, hospitals, and universities), DESCOs, mini grids, off-grid energy services, renewable and/or hybrid generation assets.</p> <p>The proposed project will be designed to facilitate private sector participation in off-grid electrification through a financial intermediary facility established by REA and funded by the Ministry of Finance (MoF) of the FGN. The facility will address financial barriers to private sector entry, as well as help improving the investment environment for private sector participation in off-grid electricity services. The proposed project will be structured around two main components: (i) the structuring and operationalization of the REF and (ii) project implementation support by REF.</p> <p>(i) <u>Rural Electrification Fund</u>: This component will support setting up a facility that will promote financing to private sector investors in off-grid energy services, as well as deliver technical assistance and capacity building where required. It is envisaged that this component will support access to finance for off-grid and mini-grid projects (USD 100,000,000) and technical assistance and enabling environment support in different areas including undertaking market development support and mini-grid project pipeline development among others (USD 500,000).</p> <p>FGN has already seeded an investment of circa USD 6 million (in local currency) to the REF and the total targeted Fund size is USD 100 million for</p>		

	<p>a first close. The REF seeks to raise up to USD 94 million in senior debt, mezzanine capital, guarantees and equity from Development Financial Institutions, institutional investors, impact investors, donor agencies and commercial investors where feasible.</p> <p>It is expected that CTF concessional funding of USD 20 million as well as the bulk of non-commercial funding will be provided to the MoF towards supporting the capitalization of the REF. AfDB is considering an investment into the REF of an amount of USD 10 million through the MoF and will provide support to the FGN to raise the additional financing required for the Fund.</p> <p>(ii) <u>Project Implementation Support</u>: This component will include activities to support management and successful implementation of the project (USD 2 million). Activities could include, inter alia, project management support, improving technical and procurement capacity of the project implementation unit, studies, audit, monitoring and evaluation, and among others, safeguards.</p> <p>Supporting and catalyzing private investment into rural electrification will have a significant demonstration effect of the business opportunities within the sector and shall, overtime attract additional investments. The REF is identified in the Rural Electrification Strategy and Implementation Plan (RESIP) as a critical means to facilitate the promotion of private sector participation in rural electrification.</p> <p>CTF will be instrumental in leveraging other sources of funding by credit enhancing the Fund’s business model. It is estimated that the CTF’s concessional financing of USD 20 million concessional financing to MoF could have a direct leverage factor of 4, given the fund’s total size of USD 100 million. This figure will increase significantly as soon as REF starts investing directly into projects.</p> <p>The FGN has also requested a grant to support project preparatory activities to design the facility including developing a robust business plan, institutional framework and developing a credible pipeline of projects for funding. The Bank will collaborate with other development partners including USAID who are also supporting the activities of the Rural Electrification Agency and REF to provide technical assistance funding to structure and operationalize the REF.</p>
<p>Expected CTF Financing (million USD)</p>	<p>USD 20 million</p>
<p>Financial Instrument (grant, loan, guarantee, equity, etc.)</p>	<p>Loan</p> <p>(Note: This loan will be channeled through AfDB into the MoF and shall benefit from a Sovereign Guarantee. The financial instruments provided by the MoF to REF will be structured in a way that credit enhance the Fund (and its business model) in order to allow it to tap into non-commercial or less concessional funding)</p>

Expected Leveraging and Co-financing by Source (million USD)	Expected leverage of 1 to 4 (direct with additional leverage expected downstream) Co-financing of USD 80 million (FGN, DFIs, Commercial Banks, Local Investors)
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD
	Installed capacity (MW): TBD
	Energy savings (MWh; specify total or annual): TBD
	Other key indicators/targets, as applicable: TBD
Expected Date of Submission to CTF Trust Fund Committee (month and year)	02/2019
Expected Date of MDB Board (month and year)	06/2019
Status of Consultation with Recipient Country	Consultation with the FGN has gone through the first round with the Managing Director of the Rural Electrification Agency and the Executive Director of Rural Electrification Fund. This project is in line with FGN's request to the AFDB for funding to support investment operations in the power sector.

Project Concept for DPSP III – EBRD – Armenia
Early Stage Geothermal Development Programme (PLUTO) Regional Expansion

Country	Armenia		
Project Title	Early Stage Geothermal Development Programme (PLUTO) Regional Expansion		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy:	Geothermal Energy (power, heating and cooling): YES
Implementing MDB (specify public or private)	European Bank for Reconstruction and Development (EBRD) – private & sub-sovereign (municipal)		
Brief Description (including project objectives, components, and innovation aspects)	<p>Many regions of the world are already tapping geothermal energy as an affordable and sustainable solution to reducing dependence on fossil fuels, and the global warming and public health risks that result from their use. For example, as of 2016 more than 13,000 megawatts (MW) of utility-scale geothermal capacity was in operation globally, with expected c. 10,000 MW in planned capacity additions on the way. Geothermal powerplants (GPPs) provide generally clean and reliable renewable electricity, which can also be combined with direct use for district and industrial heating purposes.</p> <p>Nevertheless, geothermal energy is burdened by high exploration risks and drilling costs (up to 40% of project costs for GPPs and 70% for district heating projects), and lack of availability for early stage development finance. Historically, geothermal development has been supported – if not entirely driven – by governments and public institutions, which significantly limited the availability of funds for exploration and ultimately the rate of increase of installed capacity.</p> <p>To support the efforts towards unlocking new geothermal resources and increasing the rate of geothermal developments, the EBRD piloted its innovative Early Stage Geothermal Development Programme (PLUTO, as the classical god of the underground wealth) in Turkey in 2016. Compared to traditional geothermal exploration financial support mechanisms, PLUTO proposes to further enhance leverage by combining a set of financing options for (mostly) private sector geothermal developers. Summarised in the diagramme below, these include: (1) quasi-equity support at early stages; (2) commercial financing post-exploration phase; and (3) use of a revolving fund to stimulate further investments; currently not available in the market.</p>		

	<p>PLUTO in Armenia combines USD 5 million per project from CTF – managed by the EBRD via its standard project approval processes – with at least the same amount from the project developer as equity contribution, to finance early stage geothermal exploration (Phase I). Once the geothermal resources are successfully developed, the CTF funds are recovered by the EBRD (thus PLUTO acts as a revolving fund, supporting additional exploration projects) and replaced with EBRD and other lenders commercial financing for power plant construction (Phase II).</p> <div data-bbox="505 548 1463 814" data-label="Diagram"> </div> <p>Additionally, PLUTO offers free-of-charge technical assistance to developers in order to mitigate exploration risks, select optimal technologies and prepare the project company for GPP financing. These funds are combined with policy activities to enhance the environmental & social standards applied in these projects and mitigate associated risks, including the management of non-condensable gases (NCGs).</p> <p>The PLUTO Regional Expansion to Armenia would benefit from the experience hitherto acquired through EBRD’s operations in Turkey, where the Bank has financed c. 50% (or 439 MW) of the current GPP installed capacity. This innovative holistic (financial, technical, policy & knowledge-sharing) approach to supporting geothermal exploration and scale-up will be replicated across EBRD’s countries of Operation (CoOs) and extended to geothermal heating and cooling projects, as well as water desalination. The PLUTO expansion will initially target Armenia and combine USD 5 million CTF funds to support a geothermal energy project (for power production, district heating/cooling and/or water desalination) with at least USD 5 million from equity investors for Phase I. If the exploration phases (Phase I) are successful, the EBRD may provide a combined financing amount of up to c. USD 17.5 million and will mobilise up to c. USD 17.5 million from additional co-lenders. If the exploration phase is not successful in the project, the Sponsor will repay the CTF loan within ten years of its first disbursement.</p>
<p>Expected CTF Financing (million USD)</p>	<p>USD 5 million</p>

Financial Instrument (grant, loan, guarantee, equity, etc.)	USD 5 million loan ²⁰ USD 1 million TC grant
Expected Leveraging and Co-financing by Source (million USD)	At least USD 17.5 million in EBRD financing and additional USD 17.5 million in commercial co-financing, i.e. 1 to 6.7 (CTF to MDB mobilised financing) Additional contributions are expected from equity investors
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): Subject to resource confirmation (see below)
	Installed capacity (MW): Subject to resource confirmation (see below)
	Energy savings (MWh; specify total or annual): Subject to resource confirmation (see below)
	Other key indicators/targets, as applicable: Once resources are confirmed: <ul style="list-style-type: none"> - GHG emissions reductions: at least 300 kT CO2 - Installed capacity: 1 MW - Energy savings: 0.4 TWh(thermal)/y
Expected Date of Submission to CTF Trust Fund Committee (month and year)	June 2018
Expected Date of MDB Board (month and year)	PLUTO was already approved for Turkey in November 2015. Expansion approval expected in March 2018.
Status of Consultation with Recipient Country	This proposal is based on the active and operational relationship the EBRD has, through its local Resident Office in Armenia, with public sector representatives and private sector clients.

²⁰ Proposed CTF terms & conditions under PLUTO: unsecured senior loan to the project Sponsor with 10 years grace with bullet repayment at 100 bps fixed.

Project Concept for DPSP III – EBRD – Turkey and Kazakhstan Gas Sector Energy Efficiency

Country	Turkey and Kazakhstan		
Project Title	Gas Sector Energy Efficiency		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport:
	Distributed Generation:	Solar Energy:	Energy efficiency: YES
Implementing MDB (specify public or private)	European Bank for Reconstruction and Development (public and private)		
Brief Description (including project objectives, components, and innovation aspects)	<ul style="list-style-type: none"> • It is estimated that over 230 billion cubic meters of natural gas (6% of the annual production) are lost in the oil and gas supply chains worldwide as a result of flaring/venting in the upstream segment and intentional/unintentional methane emissions in the transmission and distribution segments. This results in reduced energy efficiency and global GHG emissions of over 5 Gt of CO₂e per year (source: Rhodium Group, 2015), or approximately 10% of global anthropogenic GHG emissions. • There are significant knowledge gaps in oil & gas companies in relation to the level of methane emissions generated by industrial processes, making the assessment of the costs and benefits of energy saving technologies challenging. Such technologies are often foreign and not proven internally in oil & gas companies, which are generally risk-averse. From a commercial perspective, the internal rate of return on projects to implement such technologies is typically not sufficient for companies to prioritise them over other capital needs. • This project aims to support investment in oil & gas supply chain infrastructure to improve energy efficiency and reduce greenhouse gas emissions as well as local pollution, through the following interventions: <ul style="list-style-type: none"> ○ Innovative technologies to reduce/prevent flaring and venting in upstream operations (utilisation of gas to produce power, CNG, LNG and other products). ○ Innovative technologies and techniques to detect and eliminate methane emissions along the supply chains (upstream, pipelines, processing and storage facilities). ○ Innovative technologies and techniques to recover energy from supply chain infrastructure. • CTF funding will be used to mobilise direct lending by EBRD to support the early deployment and expansion of innovative 		

	<p>investments related to the above sustainability opportunities. Funding will support the penetration of innovative technologies and business models, including public-private cooperation and third party access, which still face important commercial and technological barriers for a sustained investment. The deployment of pilot and demonstration technologies has the potential to unlock further investment in Turkey and Kazakhstan’s over 30,000 km of gas pipelines, almost 70 compressor stations, and gas distribution networks, leading to significant reductions in emissions from this sector in both countries.</p> <ul style="list-style-type: none"> • The programme builds on the success of pilot investments in Russia, Kazakhstan and Greece (upstream flaring reduction) as well as Egypt (both flaring reduction and a first-of-its-kind waste heat recovery project currently under approval by the EBRD) and will help developing a strong pipeline of new projects across the region (with a focus on Kazakhstan and Turkey).
Expected CTF Financing (million USD)	USD 20 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan
Expected Leveraging and Co-financing by Source (million USD)	EBRD and/or other sources of finance: USD 180 million Total project value: USD 200 million Expected leverage: 1 to 10
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 2000 kT CO2 eq
	Installed capacity (MW): n/a
	Energy savings (MWh; specify total or annual): TBC
	Other key indicators/targets, as applicable: n/a
Expected Date of Submission to CTF Trust Fund Committee (month and year)	January 2018
Expected Date of MDB Board (month and year)	June 2018
Status of Consultation with Recipient Country	<p>This proposal is based on the active and operational relationship the EBRD has, through its local Resident Offices, with public sector representatives and private sector clients in beneficiary countries.</p> <p>Kazakhstan and Turkey are both parties to the United Nations Framework Convention on Climate Change and adopters of the Paris Agreement in 2015. Both countries have submitted Intended Nationally Determined Contributions pledging to reduce greenhouse gas emissions. Additionally, Kazakhstan is an endorsing</p>

	<p>country of the World Bank-led “Zero Routine Flaring Initiative”, which seeks to reduce methane emissions in the oil and gas sector. In Kazakhstan the EBRD recently signed a Memorandum of Understanding with the national gas company KazTransGaz on enhanced cooperation in the area of energy efficiency and climate change, therefore there is a short-term opportunity to explore sustainable energy investments in line with the proposed programme. In Ukraine, the national gas company Naftogas is an existing client of the Bank, thus cooperation on energy efficiency investments could be possible, including in cooperation with other co-financiers such as the EIB.</p>
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Project Concept for DPSP III – IDBG – Mexico
Green Housing and Infrastructure Services for Mexican Households

Country	Mexico
Project Title	Green housing and infrastructure services for Mexican households
Investment Area	Building Energy Efficiency
Implementing MDB (specify public or private)	IDBG (public window)
Brief Description (including project objectives, components, and innovation aspects)	<p>This project would build on the CTF-funded Ecocasa project. The proposed USD 30 Million CTF participation in the Program is expected to be blended with an IDB housing credit line of USD 100 million to include energy efficient and renewable technologies, waste and water management, and green materials in the house-building process. The program is a vehicle to further leverage an additional USD 95 million of public and private investment, assuming that local financial institutions incorporate the knowledge from the pilot, adjust their risk models and replicate the Program criteria in their own credit lines.</p> <p>Due to the combined effect of the following factors, it is expected that the market will evolve at least towards a certain efficiency level in the medium term. Further progress (up to the highest “passive house” standard) may be possible with additional international climate finance.</p> <p>The transformational effect in the residential sector is expected to manifest through: (i) the deployment of new building standards for houses, retrofitting standards, and complementary green infrastructure services (energy, water, sanitation, waste and transport) with a performance-based policy that should raise awareness and demonstrate via financed demonstration projects to developers, citizens and local financial institutions alike the advantages of these housing model in terms of energy savings and living comfort; (ii) over the period of reinvestment of the funds, the Bank, with the help of the proposed TA package, will seek to introduce simulation models with the ability to accurately forecast ex-ante the energy consumption and GHG emissions of houses, and to identify and measure water saving, location and building material criteria that will further enhance the impact of the program beyond its execution, and (iii) by providing lessons learnt for the further development of an enabling policy framework, including local building codes, and policies and programs of federal housing sector institutions.</p>
Expected CTF Financing (million USD)	USD 30M
Financial Instrument (grant, loan, guarantee, equity, etc.)	Loan

Expected Leveraging and Co-financing by Source (million USD)	IDB loan: \$100M LFIs: \$50M Developers / buyers: \$45M
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 1.43MtCO ₂ e over 40 year lifetime
	Installed capacity (MW):
	Energy savings (MWh; specify total or annual):
	Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Q1 2018
Expected Date of MDB Board (month and year)	Q2 2018
Status of Consultation with Recipient Country	Advanced

Version November 14, 2017

Project Concept for DPSP III – IFC – Global Sustainable Urban Transport

Country	Global Program		
Project Title	Sustainable Urban Transport		
Investment Area	Energy Storage:	Building Energy Efficiency:	Sustainable Transport: X
	Distributed Generation:	Solar Energy:	
Implementing MDB (specify public or private)	International Finance Corporation - Private		
Brief Description (including project objectives, components, and innovation aspects)	<p>With continued economic growth and changing composition of economic sectors, many developing countries see rapid urbanization, with urban transport systems becoming economically inefficient, socially exclusive and environmentally damaging. Designing effective and sustainable solutions for urban transport is, therefore, one of the critical enablers of healthy, inclusive expansion of cities and continued economic growth.</p> <p>Further, existing traffic inefficiencies constitute a major drag on local economies and cost many developing countries a sizable fraction of GDP due to congestion, noise and air pollution, road accidents and fatalities. For example, Manila alone is losing an estimated USD 64 million per day, or 0.8% of country GDP, due to gridlock – without even accounting for the health costs. A large share of poor citizens in many Sub-Saharan agglomerations have to resort to informal and often unsafe private transportation modes due to a lack of affordable public alternatives, limiting their access to economic opportunities. Low density urban development has further stressed the need for a systematic and economically viable urban transport systems.</p> <p>Transport is also a major contributor to cities pollution as fuel combustion from road vehicles produces a variety of air pollutants linked to negative health outcomes, including particulate matter, nitrogen oxides, ozone, carbon monoxide and benzene. Finally, the transport sector emits about a quarter of total energy-related GHG of which close to half can be related to urban transport. For example, fuel used for transportation is the single largest energy-consuming sector in Philippine’s Cebu City (51 percent), Vietnam’s Da Nang (45 percent), and Surabaya in Indonesia (40 percent), and contributes notably to GHG emissions in each of the three cities (40%, 46%, 20% respectively).</p> <p>Many cities are, therefore, in need to develop and strategically implement green transport projects, allowing them to become more competitive, inclusive, environmentally sustainable and livable. Numerous strategies, business models and technologies offer solutions. For example, transit-oriented development plans and integrated transportation strategies take a comprehensive urban development perspective for promoting dense and inter-linked mixed-used centers. The application of advanced information and communication technologies additionally allows for the improved management and planning of</p>		

	<p>transportation infrastructure and a reduction of congestion. Furthermore, a shift from private vehicle ownership to alternative transportation modes does not only reduce greenhouse gas emissions and air pollution, but also enhances access for poor and vulnerable populations. Public transport, mass public transit as well as the promotion of electric vehicles are important solutions that urgently require additional investments.</p> <p>This program will provide financing to test new private-sector driven approaches to support expanding mass transit systems and improve non-motorized transport options in the context of judicious land use, across several countries. This work will stimulate the creation of an urban environment that reduces residents’ overreliance on private cars, even as cities grow bigger and richer.</p> <p>At the moment, IFC is pursuing a pipeline of fairly early stage projects across several countries, with some projects expected to move relatedly swiftly. The current pipeline includes: (a) Significant expansions to metro networks in some of the ECA countries, which are likely to have a major impact on the cities’ transport infrastructure; (b) Major improvement to a city’s public transport system by creating a full circle of the city through tramway, leveraging some existing train infrastructure in an ECA country as well; (c) Improvements to the logistical side as well as modernizing and decarbonizing the rolling stock of the buss transit systems across multiple countries in AFR, EAP, ECA, and LAC regions.</p>
<p>Expected CTF Financing (million USD)</p>	<p>USD 45 million</p>
<p>Financial Instrument (grant, loan, guarantee, equity, etc.)</p>	<p>Majority of the funds are expected to be deployed in a low capital cost manner. In an environment with a volatile currency movement and lack of certainty, and difficulty in mobilizing private investors, a lower average cost of funds is likely to be required to ensure active participation of credible private sector actors and navigate more efficiently against economic shocks.</p> <p>The program will work with strong sponsors with experienced local teams and sound business approaches and will target markets/municipalities with favorable policy framework and market potential. Nevertheless, uncertain and not fully developed nature of the markets across the transportation sector, with sometimes unclear policy choices and oftentimes weak regulatory environments, make these untested investment areas perceived as high investment risk, resulting in high capital cost to the first movers. A participation of concessional source of capital to reduce the overall capital cost, de-risk the perception of the sector and demonstrate financial viability to the follow up private investors is very likely a necessity for these types of projects.</p> <p>Specific financing instruments will be selected and tailored at a project level reflecting specific project risks, cost structure, micro-economic conditions, sectoral dynamics, etc.</p>

Expected Leveraging and Co-financing by Source (million USD)	USD 160 mil, including funds provided by IFC, project sponsors, and other investors and lenders
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): TBD at the time of the program proposal
	Installed capacity (MW): TBD
	Energy savings (MWh; specify total or annual): TBD
	Other key indicators/targets, as applicable: TBD
Expected Date of Submission to CTF Trust Fund Committee (month and year)	Reserve pipeline. 10/2018, if moved to the sealed pipeline
Expected Date of MDB Board (month and year)	12/2018
Status of Consultation with Recipient Country	Consultations with all relevant stakeholders, financiers, and beneficiaries are ongoing. IFC's activities in each country will fully conform to the WBG's Country Partnership Framework objectives, sector strategies, and IFC country engagement.

Project Concept for DPSP III – World Bank – Chile

Energy Efficiency Guarantee

Country	Chile		
Project Title	Energy Efficiency Guarantee		
Investment Area	<input type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	World Bank		
Brief Description (including project objectives, components, and innovation aspects)	<p>The ME is strongly committed to the implementation of energy efficiency (EE) to transition to a low-carbon economy and help meet its Nationally Determined Contribution (NDC) targets, in particular achieving a 20 percent reduction in the energy consumption forecast by 2025. EE is one of the four pillars of its Energy Policy 2050 (PE2050) and is included in its 2050 targets of decoupling energy consumption from economic growth, 100 percent of new buildings have OECD EE standards, and 100 percent of appliances sold in the market are energy efficient.</p> <p>However, despite the large potential, achieving EE has been elusive. Consumption per capita is double that of the average in the LAC region, and energy intensity for the past 2 decades is almost double the average of OECD countries.</p> <p>Achieving energy efficiency improvements has been difficult, despite the large potential. According to the National Energy Balance (2014) 21 percent of energy consumption comes from buildings, of which 72 percent is consumed by the residential sector (56 percent in heating, 18 percent in water heating, 23 percent in appliances, and 3 percent in lighting). However, the disaggregated and fragmented nature of energy efficiency measures adds a lawyer complexity, especially from a perceived risk from commercial banks to provide financing for these type of investments. Work remains to be done to actually develop a financial and operational mechanism that can adequately mitigate the risks to commercial financiers and foster their involvement in EE retrofit programs.</p> <p>Thus the development of an EE Guarantee could help the country scale-up of EE by reducing the perceived risks and help mobilizing private investment. This could help unlock the EE potential to help the country meet its NDC and Energy Policy commitments, thereby decoupling energy consumption from economic growth.</p>		

Expected CTF Financing (million USD) and justification of concessionality	CTF Financing: US\$40 M. To scale-up clean energy sector, governments need to create the enabling environment effectively, including addressing market failures. In the case of Chile this relates to establishing a risk mitigation instruments, such as guarantees, would be needed to reduce the perceived risk from commercial banks and increase knowledge and comfort level with these type of projects, and to enable EE sub-projects to be bankable and reach successful financial close. Guarantees are designed to provide comfort in support of good financially viable sub-projects and typically designed not to be called in the normal course of operations. The aim of an IBRD and CTF guarantees is to provide additional comfort to the lenders and investors of energy efficiency sub-projects.
Financial Instrument (grant, loan, guarantee, equity, TA etc.)	Guarantee
Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.	According to the latest report of Financial Solutions (August 1, 2017), guarantees can have a financial leverage of its financial capacity of 2.3 times. Therefore with a US\$40M guarantee, the leveraging capacity would be of up to US\$52M.
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 0,2 MtCO ₂ / year Installed capacity (MW): Energy savings (MWh; specify total or annual): 50,000 MWh Other key indicators/targets, as applicable:
Expected Date of Submission to CTF Trust Fund Committee²¹	FY18
Expected Date of MDB Board²²	FY19
Status of Consultation with Recipient Country	Ministry of Energy has identified this as a priority area for future work in the sector.

²¹ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

²² Bank Board dates should be no later than 12 months after CTF approval.

Project Concept for DPSP III –World Bank – Multi Country

Energy Efficiency in Oil and Gas

Countries	Global (Colombia, Indonesia, Mexico)		
Project Title	Energy efficiency in oil and gas		
Investment Area	<input type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB (specify public or private)	World Bank Group (with the potential to be proposed jointly with the Interamerican Development Bank (IADB))		
Brief Description (including project objectives, components, and innovation aspects)	<ul style="list-style-type: none"> • There are significant inefficiencies in oil and gas operation related to flaring and venting of associated natural gas. This practice wastes a valuable energy resource that could be used toward the sustainable development of many producing countries. In 2016 the amount of gas flared was 149 billion cubic meters, (per satellite estimates). If used for power generation, it could provide about 750 billion kWh of electricity, or more than the African continent’s current annual electricity consumption. • Flaring of gas contributes to climate change and impacts the environment through emission of CO₂, un-combusted methane, black carbon, and other pollutants. Research indicates that flaring causes 40 percent or more of the black carbon (soot) that deposits on the Arctic snow and ice cap, accelerating melting and climate change at the pole, which impacts the entire globe. • This unacceptable global flaring situation is the impetus for the World Bank’s initiative, “Zero Routine Flaring by 2030” (ZRF). <i>As of June 1, 2017, 24 governments, 31 oil companies, and 15 development institutions, All CIF-implementing MDBs have endorsed ZRF as well as 7 of its donors (i.e. Canada, Denmark, France, Germany, Netherlands, Norway and USA), representing 45% of pledges. This CTF funding proposal is sought to support the recently established ZRF Financial Work Stream, which groups all endorsing MDBs. The Work Stream has as main objective to collaborate among financial institutions and jointly address opportunities and barriers for financing flare reduction projects.</i> • The root causes of flaring are multiple and project specific, but fundamentally oil production takes priority over utilization of associated gas. • This proposed project aims to support investment in oil & gas infrastructure to monetize wasted flare gas, improve energy efficiency, and reduce GHG emission as well as black carbon and local pollution through innovative interventions to eliminate flaring and venting in upstream operations (harnessing the gas to produce power, CNG, LNG and other products). • One concrete example of such innovation is the development of the “<i>Virtual Associated Gas Pipeline to Reduce Flaring and Monetize Wasted Associated Gas</i>”. This sample pilot entails collecting, transporting and delivering non-treated associated gas that would otherwise be flared, as fuel for power generation and/or feedstock 		

	<p>for other products such as LPG. The Compressed Associated Gas (CAG) will be transported to a gas power plant or other customers. Emission reductions comprise avoided CO₂ and methane at the flare plus those from displacing higher-carbon fuels such as HFO, diesel, or crude oil used as fuel for power generation or other applications. This innovative project concept, validated by a third party, will be appropriate to recovery of small volumes of scattered flaring at oil fields (commonly existing in Colombia, Indonesia and Mexico).</p> <ul style="list-style-type: none"> • CTF funding will be used to mobilize direct lending by WB/IFC to support the early deployment and expansion of this and/or other innovative investments related to the above sustainability opportunities. Funding will support the penetration of innovative technologies and business models, including public-private cooperation and third-party access, which still face important commercial and technological barriers for a sustained investment. The deployment of pilot and demonstration technologies has the potential to unlock further investments in the selected countries as well as in many others facing such challenge. • The project builds on the extensive work of the Global Gas Flaring Reduction Partnership (GGFR), and supports the commitment made by ZRF-endorsing organizations.
Expected CTF Financing (million USD)	USD 20 million
Financial Instrument (grant, loan, guarantee, equity, etc.)	Grant/Loan
Expected Leveraging and Co-financing by Source (million USD)	WB/IFC and/or other sources of finance: USD 160 million Total project value: USD 180 million Expected leverage: 1 to 8
Expected Results	GHG emissions reduction (tons of CO ₂ eq.; please specify total or annual): 1500 kT CO ₂ eq / year
	Installed capacity (MW): n/a
	Energy savings (MWh; specify total or annual): TBC
	Other key indicators/targets, as applicable: n/a
Expected Date of Submission to CTF Trust Fund Committee (month and year)	January 2018
Expected Date of MDB	December 2018

Board (month and year)	
Status of Consultation with Recipient Country	No specific consultations with recipient countries to date. Mexico and Indonesia have endorsed ZRF while Colombia is considering it. All parties are part to the United Nations Framework Convention on Climate Change and adopters of the Paris Agreement in 2015. Contributions pledging to reduce greenhouse gas emissions.

**Project Concept for DPSP III – World Bank – Indonesia
Geothermal Power Generation Investment Project**

Country	Indonesia		
Project Title	Geothermal Power Generation Investment Project		
Investment Area	<input type="checkbox"/> Energy Storage	<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input checked="" type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	International Bank for Reconstruction and Development (IBRD)		
Brief Description (including project objectives, components, and innovation aspects)	<p>Project Objective The proposed Project (the Project) objective is to set up a credit facility to support the rollout of a risk sharing mechanism for de-risking geothermal development prospects in Indonesia. This would represent follow-on work to the Geothermal Energy Upstream Development Project (GEUDP) and support development of the sector by focusing on resource confirmation for licensed developers - thus complementing and doubling down on the ongoing efforts under GEUDP, which focuses on exploration drilling for unassigned geothermal development licenses.</p> <p>For GEUDP, the World Bank mobilized US\$49 million from the Clean Technology Fund (CTF) co-financed by a matching amount from the Government of Indonesia (GOI). The US\$98 million package is further complemented by public/private downstream investment of US\$1.56 billion. By raising an additional US\$75 million from the CTF, the Project sets out to leverage US\$100 million from IBRD and US\$200 million from GOI through PT SMI’s Infrastructure Fund for Geothermal Sector (IFGS), with the vision of further enabling US\$2 billion in downstream investment.</p> <p>Components From an operational perspective, the proposed Project’s credit facility would benefit SOE developers from the first well onwards, and private developers from the second well. For the drilling of each well, a level of well productivity (e.g. 3 MW/well) would be agreed between PT SMI’s Exploration Management Consultant (EMT) and the developer, and a combination of the CTF, IBRD and IFGS funds would be provided. Based on the drilling outcome, two scenarios are possible:</p> <ul style="list-style-type: none"> • Upon successful drilling (e.g. meeting the pre-agreed 3 MW/well), the CTF funds would be treated as a grant, which would be 		

	<p>reimbursed to the facility and swapped with a GCF loan. The CTF and IBRD loans would be securitized to the well drilled and the developer would pay back all loans according to the terms stipulated.</p> <ul style="list-style-type: none"> In case of unsuccessful drilling (e.g. failing to meet the pre-agreed 3 MW/well), the CTF funds would also be treated as a grant, which would this time take a first-loss position followed by IFGS as second-loss. The developer would still be required to pay back the IBRD loan. <p>Innovation Aspects</p> <p>Two key features of the facility are: (i) as resource risk diminishes, the facility is expected to allocate progressively smaller portions of the available CTF contingent grant for each well drilled; and (ii) the interest paid by developers on the loans would ensure that, over a portfolio of wells, the greater majority of losses are covered for and most of the funds can be expected to be returned to CTF.</p>
Expected CTF Financing (million USD) and justification of concessionality	Expected CTF funding amounts to US\$75 million. The provision of concessional funds is justified on the grounds of addressing a market failure that keeps Indonesia from tapping its vast geothermal potential. More in details, coal dominates Indonesia’s future capacity additions, and while geothermal is one of the best baseload alternatives to coal, resource risk (exacerbated by high drilling costs) is holding back development. Resource risk is highest during exploration, after which considerable resource risk remains up to resource confirmation. Currently, there are no facilities supporting developers with sourcing risk capital up to resource confirmation.
Financial Instrument (grant, loan, guarantee, equity, TA etc.)	The Project would provide a contingent grant and a loan from CTF, a loan from IBRD and a loan from PT SMI’s IFGS, which was established in an effort to address resource risk, particularly in areas where development prospects are not attractive for pure private sector plays. The three sources of funding (IBRD, CTF, and IFGS) would be blended for the benefit of a developer (state-owned enterprise (SOE) or private), who would have access to risk capital which is ordinarily not available at the upstream stage of the geothermal development process. In addition to providing funding through IFGS, PT SMI would serve in a technical advisor capacity to carry out the due diligence of development prospects, where needed.
Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.	By raising US\$75 million from the CTF, the Project sets out to leverage US\$100 million from IBRD and US\$200 million from GOI, with the vision of further enabling US\$2 billion in downstream investment by state-owned enterprise (SOE) and private developers. Based on this, the leveraging effect would be: (i) WB/CTF ratio: 1.3; (ii) Private Capital/CTF ratio: 22:1; and (iii) Total Investment/CTF ratio: 27:1.
Expected Results	GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 2 MtCO2e per year or 60 MtCO2e over the lifetime of the investment, which is assumed to be 30 years.

	Installed capacity (MW): 400 MW of new geothermal capacity.
	Energy savings (MWh; specify total or annual): n/a
	Other key indicators/targets, as applicable: n/a
Expected Date of Submission to CTF Trust Fund Committee¹¹	February 2018
Expected Date of MDB Board¹²	October 2018
Status of Consultation with Recipient Country	Consultations are ongoing. Preliminary market soundings have shed light on the strong interest of both SOE and private developers in availing of a credit facility that could help them tap Indonesia’s vast geothermal potential by addressing upstream development risk up to resource confirmation. A pipeline of project candidates already exists, and the potential implementing agencies were used as sounding boards for the above-described engagement.

**Project Concept for DPSP III – World Bank – Nigeria
Nigeria Climate Innovation Center**

Country	Nigeria		
Project Title	Nigeria Climate Innovation Center		
Investment Area	<input type="checkbox"/> Energy Storage	<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input checked="" type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input checked="" type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	<p><u>WB:</u></p> <p>The Nigeria Climate Innovation Center (NCIC) is one of the Climate Innovation Centers (CIC) launched by the Climate Technology Program (CTP), within the World Bank’s Trade & Competitiveness Global Practice, which help local firms commercialize and scale the most innovative private sector solutions to climate change.</p> <p>The activities of the NCIC will also be coordinated with those of the pipeline Nigeria Electrification project (P161885) under its “Stand-Alone Home Solutions” component.</p> <p><u>IFC:</u></p> <p>In collaboration with the IFC Lightning Nigeria program, the NCIC team has already worked on identifying market gaps for the off-grid solar sector. A joint IFC-WBG team has recently been selected as finalist for the SME Launchpad program with a proposal to pilot, within the activities of the NCIC, a novel approach to Grand Challenges as an ecosystem gap-filling tool for the off-grid solar market in Nigeria.</p>		
Brief Description (including project objectives, components, and innovation aspects)	<p>Nigeria faces significant challenges in energy access. At present, 85 million people lack access to grid electricity, with the national electrification rate at 58 percent and only 41 percent in rural areas. The FGN aims to make reliable electricity available to 75 percent of the population by 2020, and 90 percent by 2030, with at least a 10 percent share of renewable energy by 2025. To achieve these targets, Nigeria would need to connect between 500,000 - 800,000 households per year and add 5 GW of excess production capacity to provide basic level services for new customers.</p> <p>Through the approved Nigerian Rural Electrification Policy, the FGN recognized that off-grid solar solutions including lightning products, solar home systems, and mini-grids are needed to accelerate energy access. The growing pipeline of solar off-grid MSMEs in Nigeria could prove critical to promoting such technologies, but it is facing challenges such as the lack of access to trade and consumer financing, low operational capacity with poor training, limited market information and consumer awareness, and an inadequate regulatory framework.</p> <p>The Nigeria Climate Innovation Center (NCIC) will accelerate rural access to energy in Nigeria through private sector market-driven means targeting the off-grid solar market, with a specific focus on</p>		

	<p>innovation and MSMEs. Having analyzed over 80 companies operating in this sector, the pre-feasibility work for the NCIC has concluded that there is a still a limited pipeline of high-quality solar MSMEs in Nigeria with the potential to grow. These enterprises could be in a unique position to address the energy gap if they were provided with the support needed to overcome existing market and capacity barriers.</p> <p>Unlike other solar projects in the CTF pipeline, the NCIC will be focused on off-grid solar home systems, rather than utility-scale grid-connected PV plants or mini-grids combining renewable resources with thermal units. Solar home systems i) have proved to be more productive in providing quick access to rural, isolated areas, such as those in the north of Nigeria; ii) do not depend so much on subsidies for its cost-effectiveness; iii) have a lower first-mover risk perception, thereby favoring the deployment of capital in the sector and iv) allow for a fully renewable generation, hence maximizing the reduction of GHG emissions for new energy users.</p> <p>The program for the NCIC will be composed of the following three pillars: 1) a Multi-Stage Enterprise Development Program, 2) Market Acceleration and 3) Access to Finance.</p> <p><u>1) Multi-Stage Enterprise Development Program.</u></p> <p>This component will foster innovation and create an investable pipeline of local enterprises operating throughout the off-grid solar ecosystem.</p> <p><i>1.1) Stage 1: Enterprise Incubation & Ecosystem Gap Filling.</i></p> <p>Through this stage, the NCIC will spur innovation and private sector solutions to address critical ecosystem gaps (e.g., PAYG regulation, end-of-life product management, etc.). The enterprise incubation program will support new start-ups by providing resources, funding, and mentorship. It will be run on a continuous entry basis and it will also incubate business ideas selected through hackathons or grand challenges addressing specific industry gaps.</p> <p><i>1.2) Stage 2: Enterprise Acceleration</i></p> <p>The purpose of this stage is to accelerate and strengthen high potential enterprises with proven market traction. This program will support solar MSMEs that may have been active in the Nigerian solar market for several years or that are coming from the incubation program of the NCIC and have the capacity to grow.</p> <p>Some of the acceleration services will include access to early stage ‘angel’ type equity; capital raising support through advisory mechanisms; human capital strengthening focusing on development skills and capabilities of management teams; specialized back-office services and expertise (recruitment, legal and accounting advice, marketing); advice on strategies to gather customer feedback; IT advisory services; supply chain development support, which will be particularly relevant for solar manufacturing companies; and</p>
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	<p>deployment of international experts as embedded advisors in daily operations.</p> <p><i>1.3) Stage 3: Enterprise Growth</i></p> <p>The purpose of this stage is to support mature enterprises. Selected candidates may or may not have participated in the previous stages of the program. For this, the NCIC will focus on providing just-in-time support, compared to the more structured and intensive program of the enterprise acceleration stage.</p> <p><u>2) Market Acceleration.</u></p> <p>The objective of the market acceleration component is to position the NCIC as a trusted, credible, and independent leader of the energy access agenda, as well as an informal one-stop-shop for off-grid solar in Nigeria. The program will be led and managed by a market sector expert team in charge of developing multi-year strategic plans to grow the market, with the flexibility to adapt to rapidly changing market conditions and priorities. The menu of services will include proactive market monitoring, stakeholder advice and market intelligence services.</p> <p><u>3) Access to Finance.</u></p> <p>This component will comprise a) direct financing through grants and an associated investment fund and b) advisory services for companies to enhance their ability to access pre-existing financing.</p> <p>The direct financing element, particularly the associated investment fund, will be a later focus of the NCIC as the pipeline of potential companies in Nigeria grows and further funds become available. In fact, it will be implemented through one or more associated Investment Partners. The advisory services element will include advising MSMEs on regulatory requirements in Nigeria, assisting the businesses in becoming investment-ready, acting as a facilitator with potential financing entities, etc.</p> <p>The CTF funds will be necessary for the first two components, Multi-Stage Enterprise Development Program and Market Acceleration, which will be implemented first and are the key priorities of this project.</p> <p>The NCIC will be designed and established by the World Bank Group (WBG) in collaboration with the Government of Nigeria (GoN). Its implementation will be executed by the Lagos Business School, following guidance from the WBG, which will provide technical assistance, fundraising support, and general advisory services; and the GoN, which has already committed funds for this initial phase.</p> <p>After its implementation, and to ensure its local ownership, the NCIC will become an independent, Nigerian-owned and privately-run organization that will help sustain acceleration and advocacy for the off-grid industry in Nigeria over the long-term. The NCIC will become one of the eight Innovation Hubs planned by the GoN under the Growth and Employment project (credit no. 4882- NG), as part of the</p>
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	<p>implementation plan for the Strategic Framework for Job Creation in Nigeria.</p> <p>Lack of stakeholder coordination has been identified as an important market barrier in the off-grid solar sector in Nigeria. To avoid this, there have already been several discussions with potential partners in Nigeria to guarantee a coalition-building effort, especially for the market acceleration component of the NCIC. Some of these partners include Shell Foundation, Acciona Microenergy, USAid, and All On. The co-creation of the NCIC with key sectorial stakeholders will help ensure its broad buy-in.</p>
Expected CTF Financing (million USD) and justification of concessionality	<p>USD 5 million to finance the final design and kick-off of the NCIC, including its first two years of operations.</p> <p>As part of its INDC to reduce business as usual, Nigeria wants to work towards off-grid solar power of 13 GW by 2030. In fact, one of the adaptation strategies for the energy sector recommended by the UNFCCC is to expand sustainable energy sources and decentralize transmission in order to reduce vulnerability of energy infrastructure to climate impacts. In this sense, the Nigeria Climate Innovation Center could prove an efficient, scalable initiative to increase off-grid access.</p>
Financial Instrument (grant, loan, guarantee, equity, TA etc.)	Grant and TA
Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.	<p>USD 0.8 million, provided by the Office of the Vice President</p> <p>USD 0.1 million, provided by the SME Launchpad program</p> <p>USD 0.5 million, provided by the Clean Technology Program</p> <p>USD 0.3 million, provided by Shell Foundation</p> <p>USD 1 million, provided by USAID SOGE</p> <p>Addition funding expected from WBG lending operation in late 2018.</p>
Expected Results	<p>GHG emissions reduction (tons of CO2 eq.; please specify total or annual): 209.4 ktCO2eq (total for first 4 years of program)</p> <p>Installed capacity (MW): 205.31 MW (total for first 4 years of program)</p> <p>Energy savings (MWh; specify total or annual): 374704 MWh (total for first 4 years of program)</p> <p>Other key indicators/targets, as applicable: # households with new/improved access to energy: 1,020,800 households (total for first 4 years of program) # off-grid solar companies incubated/accelerated: 24 (total for first four years of program)</p>
Expected Date of Submission to CTF Trust Fund Committee ²³	
Expected Date of MDB Board ²⁴	
Status of Consultation with Recipient Country	<p>Approved by the Office of the Vice President.</p> <p>Approved by the Country Manager.</p>

²³ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

²⁴ Bank Board dates should be no later than 12 months after CTF approval.

**Project Concept for DPSP III – World Bank – Philippines
Renewable Energy Fund**

Country	Philippines		
Project Title	Renewable Energy Fund		
Investment Area	<input checked="" type="checkbox"/> Energy Storage	<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input checked="" type="checkbox"/> Distributed Generation	<input checked="" type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input checked="" type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	International Bank for Reconstruction and Development (IBRD)		
Brief Description (including project objectives, components, and innovation aspects)	<p>The Philippines has had a balanced mix of renewables, natural gas and coal-fired generation until relatively recently. As the best hydro and geothermal sites were developed and the country’s main natural gas reserve (the Malampaya field) also developed, most investors have, of late, preferred to invest in coal-fired generation. Over 10 GW of new coal-fired power plants were announced in 2015. This is fundamentally changing the energy mix, and, based on observed trends, the Philippines will go from having among Asia’s lowest penetration of coal-fired power in 2005 to having Asia’s highest dependence of coal-fired power generation.</p> <p>To accelerate renewable energy (RE) deployment, the proposed Project will establish a “Renewable Energy Fund”, to support bringing down the cost of RE projects, including planning and preparation of RE projects, financial support for land acquisition, transmission connection and strengthening, preparing projects ready for auctions, and supporting project financing with various financial instruments, such as guarantee. The objective is to make RE competitive with the ‘default’ coal based new generation capacity. The Fund will provide support to various RE technologies that can be scaled up, including solar PV, wind, rooftop solar and geothermal, with a potential application of electricity storage for integrating variable electricity generation from solar PV or wind. The Fund will aim at directly supporting development of at least 400 MW RE capacity. The Fund will also be used to leverage financing for associated power infrastructure such as rehabilitation of hydropower plant for enhanced system flexibility to accommodate variable RE such as solar and wind, and construction of transmission lines to evacuate power of the targeted 400 MW RE development.</p> <p>The Project will contribute to the implementation of the Nationally Determined Contribution (NDC), which set the target of GHG emission reduction 70% below BAU by 2030 relative to the BAU scenario projected from 2000, conditional on international support. It is also aligned with the National Renewable Energy Program (NREP) which calls for nearly tripling RE capacity from 5,400 MW in 2011 to 15,400 MW by 2030 (including hydro).</p>		

<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Expected CTF funding amounts to US\$100 million. The Philippines have the second highest electricity tariffs in the EAP region (after Japan). The retail tariffs for households are in the order of US\$ 0.20/kWh. The GoP and Department of Energy (DOE) prioritize energy sector investments in generation that help to contain further increases in electricity prices. Without making RE competitive with coal based energy, the GOP is likely to meet growing electricity demand by building mostly coal power plants. To compete with coal based generation for base load, adopting electricity storage applications in RE generation facilities and nearby substations to integrate variable generation profile is crucial. Concessional financing from CTF will be essential to bring down the cost of development by supporting land acquisition and evacuation infrastructure, to offer risk mitigation instruments, to support electricity storage applications and the associated enabling environment, and to support capacity building in auction of RE to identify efficient developers. A more detailed economic and financial analysis will be conducted to prove the necessity of concessionality during project preparation.</p>
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>To achieve its objectives, the Project will avail of a mix of financial instruments, including grants, loans, equity and guarantees. To make the best use of these instruments, the Project will build on previous experience in the Philippines and ongoing analytical and technical assistance support provided by the World Bank. The first round of the feed-in tariff (FIT) program took place in 2016 and resulted in over 1,000 MW of new capacity additions, mainly in wind and solar which have FIT of over US\$ 0.17/kWh. The government is now assessing the results and may change the approach of pricing mechanism from the FIT to auction in future to obtain lower prices. Under the ongoing <i>Access to Sustainable Energy Programme (ASEP)</i>, technical assistance is being provided to a pilot solar PV auction for building a solar PV plant with a total capacity of 50-75 MW. The competitive pilot auction is expected to achieve electricity costs below the current FIT levels and with an indicative target to undercut historic weighted average cost of generation (WACOG) during daylight hours (from 6am to 6pm). Another project under preparation, <i>Enabling Distributed Solar Power</i>, supported by the both Bank and Recipient Executed Trust Funds (BETF & RETF) to be funded by the NAMA Facility, is to address barriers to scaling up distributed generation solar PV for net-metering or self-supply.</p> <p>The RE Fund will help crowd in private investment in RE technologies to scale up RE development in Philippines through financial support to lower the cost, reduce the risk and improve the readiness of RE investment projects. By bringing down the cost of generation to the level competitive with that of coal based generation, the Project is expected to mobilize commercial capital to develop RE technologies to replace and/or defer the planned expansion of coal fired power plants. Initial RE investment supported by the Fund will transform the market, bringing down the cost of RE technologies and reducing the risk profile of RE investment among stakeholders.</p>
<p>Expected Leveraging and Co-financing by</p>	<p>By raising US\$100 million from the CTF, the Project sets out to leverage US\$100 million from IBRD (and IFI co-financers), and US\$300 million from the</p>

Source (million USD) Must include some private, either directly or indirectly over time.	private sector. Based on this, the leveraging effect would be: (i) WB/CTF ratio: 1:1; (ii) Private Capital/CTF ratio: 3:1; and (iii) Total Investment/CTF ratio: 5:1.
Expected Results	400 MW of RE investment directly supported by the Fund is expected to generate about 700 GWh of electricity annually. It will help reduce the greenhouse (GHG) emission by 0.58 MtCO ₂ eq per year or 11.6 MtCO ₂ eq over 20 years of lifetime. Rehabilitation of the existing hydropower plant and investment in associated power transmission and distribution will help evacuate the energy from these 400 MW new installation
	Installed capacity (MW): 400 MW of new RE capacity
	Energy savings (MWh; specify total or annual): n/a
	Other key indicators/targets, as applicable: n/a
Expected Date of Submission to CTF Trust Fund Committee ²⁵	March 2018
Expected Date of MDB Board ²⁶	March 2019
Status of Consultation with Recipient Country	Consultations are ongoing. Preliminary market soundings have shed light on the strong interest of DOE in attracting climate finance to support the development of RE in the Philippines.

²⁵ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018

²⁶ Bank Board dates should be no later than 12 months after CTF approval.

Project Concept for DPSP III – World Bank – Vietnam
Scaling up Energy Efficiency for Industrial Enterprises in Vietnam

Country	Vietnam		
Project Title	Scaling up Energy Efficiency for Industrial Enterprises in Vietnam		
Investment Area	<input type="checkbox"/> Energy Storage	<input checked="" type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Sustainable Transport
	<input type="checkbox"/> Distributed Generation	<input type="checkbox"/> Solar Energy: CSP, PV + innovative features	<input type="checkbox"/> Innovation Incubator
Implementing MDB(s) (specify public or private) and indicate if the project is being proposed jointly	International Bank for Reconstruction and Development (IBRD)		
Brief Description (including project objectives, components, and innovation aspects)	<p>The World Bank and the Government of Vietnam (GoV) have agreed to adopt a holistic approach to scaling up energy efficiency (EE) in the high-energy intensive industrial sector, aiming to unlock the huge potential for energy savings and greenhouse gas (GHG) emission reductions. The proposed <i>Scaling up Energy Efficiency for Industrial Enterprises in Vietnam</i> (“the Project”) will substantially contribute to achieving Vietnam’s Nationally Determined Contribution (NDC); i.e. 25% GHG emission reduction compared to the Business-As-Usual scenario with international support, under the Paris Agreement.</p> <p>The Project comprises an integrated package of a dedicated credit line, credit risk mitigation, technical assistance and capacity building activities to various stakeholders from public entities to local financial institutions and industrial enterprises. This will reduce EE investment market barriers, such as lack of access to finance and capacity of stakeholders, high project risk perceptions, and the existence of an insufficient policy and regulatory framework that governs EE in the industrial sector.</p> <p>The Project comprises three interrelated and closely coordinated components:</p> <ul style="list-style-type: none"> • Component 1: US\$100 million World Bank Energy Efficiency Credit Line - Vietnam Energy Efficiency for Industrial Enterprises Project (WB-VEEIE) • Component 2: US\$78 million CTF Risk Sharing Facility (CTF-RSF) • Component 3: US\$10 million World Bank and CTF Technical Assistance (WB/CTF-TA) <p>The \$100 million credit line (Component 1) was approved by the WB Board on April 14, 2017, and the IBRD loan is expected to be effective in September 2017. The joint implementation of these three components will promote a market-driven approach to industrial energy efficiency, opening the commercial lending market to local banks and non-bank financial institutions developing a new EE product line. With financial and technical</p>		

	<p>support from the World Bank and CTF, the Project will mobilize approximately US\$ 407.3 million of EE investments, supporting over 100 industrial companies to reduce energy consumption and generate about 120 MtCO₂eq of GHG emission reductions over the lifetime of the investments.</p> <p>Industrial energy efficiency has large potential for further scaling up and replication beyond the scope of the Project. The investment need was estimated at around US\$3.6 billion in the key industries, and would be larger for the entire industrial sector. The Project will contribute to a paradigm shift in the nascent EE market in Vietnam by providing know-how and experience and by strengthening of capacity and creating an enabling environment for local financial institutions and industrial enterprises to scale up investments in energy efficiency. The Project will provide initial interventions to demonstrate market potential and to accelerate the development of the nascent EE market in Vietnam.</p> <p>Risk sharing has been an effective tool in many countries to reduce high risk perception when the market is premature, and to increase capacity and confidence of participating financial institutions (PFIs) in EE financing. The proposed Risk Sharing Facility will enable PFIs to launch and expand the industrial EE financing market, which has been limited in Vietnam so far, during and after the project implementation. The technical assistance and capacity building component of the Project will contribute to knowledge sharing and learning, especially for PFIs to have sufficient knowledge base to evaluate and extend EE loans and to conduct due diligence, and for industrial enterprises (IEs)/Energy Service Companies (ESCOs) to learn EE technologies and investment opportunities that are relevant to their businesses and to identify and develop pipeline through energy audit and adequate safeguard considerations. Experience and market conditions created by the Project will further enable commercially-driven EE financing, resulting in the development of a sustainable EE financing market in the country.</p>
<p>Expected CTF Financing (million USD) and justification of concessionality</p>	<p>Expected CTF funding of \$75 million guarantee and \$3 million grant for the Risk Sharing Facility, and \$8.3 million grant for TA and capacity-building support, amount to a total of \$86.3 million.</p> <p>Despite several EE initiatives from both GoV and the donor community, significant barriers to implementing industrial EE remain. The constraints to EE investments are usually not due to the financial viability and maturity of EE technologies but to market failures and barriers, which include: low or subsidized energy pricing; lack of institutional champions due to the fragmented nature of EE measures; limited financing for the up-front capital expenditure; and lack of EE awareness and capacity to identify and develop EE projects.</p> <p>The cost of energy consumption has been low and subsidized historically. The share of the energy cost represents a small share of operating costs, which has led to consumers' low interest in energy conservation. This issue is currently being addressed through a series of energy pricing and</p>

electricity tariffs reforms (supported by the World Bank through a series of development policy operations). The average tariff has gradually been increased from VND1,053/kWh in 2010 to VND1,622/kWh in March 2015. The ongoing sector reform is expected to eventually achieve full cost recovery tariffs, which will help address one of the major barriers -- low electricity pricing -- to promote investments in energy efficiency.

However, other challenges still need to be addressed. EE policies and measures remain fragmented and lack institutional champions and accountability to enforce national-level EE targets. The objectives of EE policies and programs are not duly incorporated into sector master plans, which prevents allocation of financial resources to support achievement of the expected results. Despite the established mandatory reporting requirements, no established systems exist for monitoring and reporting on the achieved results of energy savings and emission reductions.

Furthermore, industrial enterprises, the main beneficiaries of EE investments, have inadequate information on their energy consumption and efficiency measures that can be adopted. And only a few experts capable of identifying energy efficiency opportunities and developing technical designs suitable for the operating environment are available in each subsector. Thus, cases of investing in and benefiting from EE remain rare, as is awareness of these success stories amongst cohorts with equally high energy intensity and opportunities to save from EE investments.

Despite the high financial viability of EE investments in the industrial sector, access to finance has been limited for most industrial enterprises with high energy intensity. Most local financial institutions lack the required technical expertise to appraise EE investments, and view EE lending as risky. Credit risk associated with EE lending is perceived as high by most local financial institutions, and this often leads to high collateral requirements. In particular, the concept of project-based financing derived from the cash flows from energy savings has not yet been widely accepted by financial institutions. This lack of expertise, interest, and confidence in EE financing on the part of financial institutions leads to insufficient supply of financing for the capital expenditure in EE measures.

While international experience demonstrates that the development of ESCOs and a functional Energy Performance Contracting (EPC) market are critical to scale up energy efficiency investments, the ESCO market in Vietnam is still at a nascent stage. Although there are currently about 70 energy services providers that could potentially be considered as ESCOs, they are very small and lack the necessary experience and capacity to access financing for project implementation. Existing legislation does not encourage ESCO operation, and the 5-year implementation review of the Law on EE recently stated that new regulations need to be prepared to support ESCO activities for scaling up EE investment.

Unless other measures to address these existing barriers are carefully designed and implemented, the market failures enumerated above would persist, and unlocking the energy saving potential in the energy intensive

	<p>industries would not be scaled up or at least would be delayed for a long time, exacerbating the challenges of energy security and climate change. While the TA and capacity building activities seek to enhance PFIs' understanding of EE opportunities with IEs, the CTF-RSF will provide them with the necessary financial risk mitigation to alleviate borrower credit concerns and expand lending for EE.</p> <p>The CTF-RSF is essential for the successful implementation of the WB-VEEIE (Component 1) and for the scale-up of energy efficiency lending in Vietnam. The provision of partial credit risk guarantees to PFIs will encourage them to extend EE loans from their own resources, beyond the WB-VEEIE credit line, and associated co-financing requirements, provided through the Ministry of Finance (MoF) and the State Bank of Vietnam (SBV). Since EE lending is still considered a high-risk product line by financial institutions in Vietnam, the CTF guarantee represents a targeted solution to mobilize private financing. Sharing credit risk of EE loans offered by PFIs is key to addressing existing barriers in the financial sector and to scale up EE investment in the industrial sector. The CTF guarantee is therefore uniquely positioned to support the commercial transactions contemplated under the Project and mobilize additional private sector investment at volumes which otherwise would not be possible.</p> <p>The concessional terms of the CTF guarantee allow PFIs and other participants in the market to become acquainted with the risks of EE financing at a lower cost. The benefit of concessionality will be passed to end-users, including PFIs, IEs and EE service providers, which form the EE market. Without CTF intervention, it would take considerably longer for existing market barriers to be removed, and in the meantime, access to finance for EE investments would remain limited to selected borrowers and more costly than many borrowers could bear. By expediting market development and learning through the concessional risk guarantee, CTF would help unlock the considerable potential for energy saving measures and GHG emission reduction in Vietnam.</p>
<p>Financial Instrument (grant, loan, guarantee, equity, TA etc.)</p>	<p>Component 2 will mobilize US\$251 million from participating financial institutions (PFIs) and industrial enterprises (IEs)/energy service companies (ESCOs) through the Risk Sharing Facility, to be capitalized by US\$3 million of grant and US\$75 million of guarantee from CTF. The CTF-RSF will provide PFIs with partial credit risk guarantees (coverage ratio based on market demand) to cover loans extended to IEs for EE investments. It is expected that these loans would be funded from PFI's own local currency financing resources, and not from the USD financing provided through the IBRD loan²⁷. All investments mobilized under Component 2 are additional to the investments made under Component 1, since the loans provided under Component 1 are not eligible for the partial risk coverage offered by the Facility. The CTF guarantee will only be available to loans or tranches of loans (in case of parallel financing with Component 1) made to IEs by PFIs</p>

²⁷ During market sounding activities, PFIs expressed interest to apply for the guarantee using their own financing resources.

	<p>using their own resources. The CTF-RSF will cover losses pro rata (not as a first loss) with the PFIs and the guarantees will amortize along with the underlying loans.</p> <p>The \$3 million CTF-RSF grant will cover administrative start-up costs and operating expenses for the first two years, and provide initial seed capital for possible sub-guarantee payouts during the early stages of the operation. After an initial ramp-up period, the CTF-RSF is designed to operate on a cost recovery basis so that sub-guarantee fees collected from PFIs would be sufficient to cover CTF-RSF operating expenses, CTF guarantee fees, and guarantee payouts for expected losses from the covered loan portfolio. For greater efficiency and simpler administration, the CTF guarantee is not issued directly to the PFIs but to the CTF-RSF as a whole as reserve capital. The CTF guarantee is not expected to be called as long as actual losses are kept below the expected losses, which are to be recovered by a pool of the seed capital and the reserve capital coming from the collected guarantee fees.</p> <p>Component 3 (US\$1.7 million IDA loan/US\$8.3 million CTF grant) provides TA and capacity building to promote EE in the industrial sector. This TA and capacity-building component will assist (a) the Ministry of Industry and Trade (MoIT) and relevant government agencies, which are responsible for EE policies and targets, to implement voluntary agreements with relevant industries, improve incentives for industry to carry out EE investments, and develop mandatory EE standards and benchmarks in the energy-intensive industries; (b) PFIs to improve their knowledge, experience, and expertise in identifying, appraising, and implementing EE lending projects in the industrial sector and business development to generate deal flows; and (c) IEs and ESCOs to develop bankable projects. This component will be closely linked with the ongoing Clean Production and Energy Efficiency (CPEE) Project on developing EE policies and industry voluntary agreements and with the Korea International Cooperation Agency (KOICA) TA activities to support IEs and ESCOs (US\$1.9 million expected to be allocated by KOICA through its own policies and procedures).</p>
<p>Expected Leveraging and Co-financing by Source (million USD) Must include some private, either directly or indirectly over time.</p>	<p>The \$75 million of guarantee and \$3 million of grant from CTF for the Risk Sharing Facility is expected to mobilize an additional \$201 million in debt from PFIs and another \$50 million in equity from IEs/ESCOs, representing a total leverage of \$251 million in EE investment.</p> <p>For the Project as a whole, \$86.3 million from CTF (including \$8.3 million grant for TA) will mobilize a total of \$407.3 million in EE investment, including \$100 million in loans from the World Bank and \$226 million in loans from PFIs, as well as \$81.3 million in equity from IEs/ESCOs.</p>
<p>Expected Results</p>	<p>The Project is expected to avoid 12 MtCO₂eq of GHG emissions annually through improved energy efficiency in industrial processes and reduced energy consumption, of electricity and/or heat. Over the lifetime of investment, assumed to be 10 years, the estimated GHG emissions avoided</p>

	<p>would be 120 MtCO₂eq. Total energy saving is estimated at 2.36 Mtoe per year, including electricity saving of 4.7 TWh and coal saving of 2.7 million tons, equivalent to the saving of 2,100 MW power generation capacity with 95% of capacity factor.</p> <p>Installed capacity (MW): n/a</p> <p>Energy savings (MWh; specify total or annual): Total 4.7 TWh of electricity and 2.7 million tons of coal.</p> <p>Other key indicators/targets, as applicable: Total 120 MtCO₂eq GHG emissions avoided</p>
Expected Date of Submission to CTF Trust Fund Committee²⁸	December 2017
Expected Date of MDB Board²⁹	April 2018
Status of Consultation with Recipient Country	<p>The Project proposal has been extensively discussed with the Ministry of Planning and Investment (MPI) and the MoIT, the line ministry for the energy sector, throughout preparation and development. MPI facilitated internal review from different concerned ministries and issued the no-objection letter with enthusiasm. In addition, MoF, SBV and other relevant government entities have been diligently engaged while shaping the project design.</p> <p>Throughout project preparation, multiple rounds of stakeholder consultation have been held, with government entities, local banks and non-bank financial institutions, industrial associations and companies, ESCOs and development partners to share the project design, take feedback and facilitate discussions among different stakeholders, all of which then informed the modification of the project design. A few more consultations are still being planned before implementation to make sure the project design, particularly the CTF Risk Sharing Facility component, will be of help to both financial institutions and IEs/ESCOs.</p>

²⁸ 1/3 of the entire DPSP III to be ready and submitted for CTF funding approval by June 2018 and the remainder by December 2018.

²⁹ Bank Board dates should be no later than 12 months after CTF approval.