Funding Proposal

FP006: Energy Efficiency Green Bonds in Latin America and the Caribbean

Mexico | Inter-American Development Bank (IDB) | Decision B.11/11

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GREEN CLIMATE FUND

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Consideration of funding proposals – Addendum

Funding Proposal Summary for FP006

Summary

This addendum contains the following two parts:

(a) A funding proposal summary entitled "Energy Efficiency Green Bond in Latin America and the Caribbean" submitted by the Inter-American Development Bank containing summary information on the programme; and

(b) No-objection letter(s) issued by the national designated authority(ies) or focal point(s).

These documents are presented as submitted by the accredited entity and the national designated authority(is) or focal point(s), respectively. Pursuant to GCF Interim Information Disclosure Practice, the funding proposal entitled "Energy Efficiency Green Bond in Latin America and the Caribbean" submitted by the Inter-American Development Bank is being circulated on a limited distribution basis only to Board Members and Alternate Board Members to ensure confidentiality of certain proprietary, legally privileged or commercially sensitive information of the entity.

* The agenda item number will be determined when the final sequence of items in the provisional agenda is confirmed by the Co-Chairs.

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Energy Efficiency Green Bond in Latin America and the Caribbean

A. Executive Summary

Energy Efficiency (EE) is considered one of the instruments with the greatest potential to lower production costs and improve business productivity, while simultaneously reducing Greenhouse Gas (GHG) emissions. This EE potential has fueled the creation of private initiatives along the EE value chain in which Energy Service Companies (ESCOs)[1] offer comprehensive solutions to companies interested in investing in EE.[2] However, there are significant barriers to develop the EE market in Latin America and the Caribbean (LAC), among others, the lack of appropriate financing for ESCOS to develop EE projects. Local Financial Institutions (LFIs) are very conservative when lending to private sector companies and have also limited expertise and capacity to market, assess and structure EE financing. This results in LFIs' preference for short term, collateral-based lending schemes against a company's balance sheet, which are often not well suited for EE projects financing. This lack of knowledge and risk appetite leads to inadequate financing terms for these private sector initiatives in EE.

There is nevertheless an alternative source of financing for EE projects. Capital markets provide a platform for investors with appetite and capacity to participate in the financing of EE projects through debt securities[3] in the form of green bonds[4]. In the last five years, the green bond markets have expanded globally from US$909 million (in 2009) to US$36.9 billion issuance (in 2014). In the case of green Asset Backed Securities (ABS), a type of green bond in which a pool of green projects are packaged, issued, and backed by the energy savings generated by the underlying projects, private sector companies could tap capital markets with the aim of accessing more adequate financing terms and conditions for their EE projects; but in the LAC region this market remains underdeveloped.

The purpose of the IDB´s Energy Efficiency Green Bond in Latin America and the Caribbean Programme (the "Programe") is to provide an alternative financing mechanism for EE projects through the issuance of green ABS. The Programme will support the development of EE private sector initiatives by establishing the highest standards as well as the verification and validation of environmental impacts under the Green Bond Principles[5]. The mitigation potential is considerable: the GHG emission reductions from the underlying projects are expected to be 17,000 tCO2e per million of US$ invested over the lifetime of the projects. The aggregate expected emission reductions are around 13.2 million tCO2e.

[1] An ESCO is a type of energy efficiency servive provider "that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in doing so. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria¨. (IEA, EE Market Report 2015)

[2] EE projects include investments in efficient machinery and lighting, co-generation, renovation and retrofitting of existing facilities replacement of cooling and heating equipment, installation of smart metering and controls, substitution of fossil fuel energy with biomass production or natural gas, and installation of renewable energy facilities for self-supply purposes.

[3] ¨Debt securities are negotiable instruments serving as evidence of a debt. They include bills, bonds, negotiable, certificates of deposit, commercial paper, debentures, asset-backed securities, and similar instruments normally traded in the financial markets. Bonds are securities that give the holders the unconditional right to fixed payments or contractually determined variable payments, that is, the earning of interest is not dependent on earnings of the debtors." (System of National Accounting, 11.64, 2008)

[4] "Green Bonds are instruments in which the proceeds will be exclusively applied (either by specifying Use of Proceeds, Direct Project Exposure, or Securitization) towards new and existing Green Projects – defined here as projects and activities that promote climate or other environmental sustainability purposes." (Green Bond Principles 2014)

[5] Green Bond Principles are described here: https://www.ceres.org/resources/reports/green-bond-principles-2014-voluntary-process-guidelines-for-issuing-green-bonds/view

As a positive further impact, LAC capital markets will be further developed fostering social and environmental responsible investments among local institutional investors.

The Programme will replicate and scale up the existing pilot transaction: "Capital Markets Solutions for financing EE in Mexico" in at least three LAC capital markets. Although this pilot transaction is still at its initial stage, it has already been recognized internationally as a best practice to unlock the financing of EE projects through capital markets securities. The G-20 Climate Finance Study Group (Turkey, September 2015) has in fact recognized in its report this innovative structure [6].

The innovative financing mechanism consists of a two step financing solution: (i) during the Accumulation Step warehousing loans will serve to finance, accumulate and standardize EE projects in the countries where EE projects are located; and (ii) during the Mobilization Step one or more partial credit guarantees will be issued to support the securitization of the EE projects to be issued in the local or international capital markets.

Initial countries under consideration for allocation of the GCF and IDB resources of the Programme include Mexico, Dominican Republic, Jamaica, and Colombia. Other countries could participate based on availability of EE projects seeking adequate financing, appropriate legal and regulatory environments, capital market readiness for the issuance of green ABS, and institutional capacity of local institutional investors to invest in ABS.

A.2. Background and Diagnosis

The challenge of Climate Change (CC) and EE. The United Framework Convention for Climate Change (UNFCCC) suggests that to maintain the rise in global temperature below 2 degrees Celsius, countries will need additional financing for initiatives reducing GHG emissions corresponding to 0.3% to 0.5% of global GDP by 2030.[7] Given that the major sources of GHGs emissions have traditionally been energy 47%, industry 30%, transport 11%, and buildings 3%[8] reducing energy consumption is expected to have the broadest impact. In that sense, the UNFCCC foresees that out of the US$ 432 billion invested annually in the power sector, one third needs to be shifted to non- emitting sources of energy (such as thermal, renewable, hydro among others). [9] For LAC, the International Energy Agency (IEA) suggests that the region will need 75% more energy by 2030 with steady levels of economic growth and electricity production would therefore need to expand by 50% within the next 10 years. Given the high costs associated with exploring, building and/or developing thermal and renewable energy (RE) sources, investing in Energy Efficiency (EE) is thus considered to be the most competitive and cost-efficient way to satisfy increasing energy demand. LAC countries could reduce energy consumption by 10% over the next decade and still respond to its economic growth needs, by widely investing in available efficient technologies and equipment (estimated cost of US$16 billion[10] vs. US$53 billion to build gas-powered open cycle generators necessary to produce the equivalent amount of energy 143,000 GWh). Although some countries in LAC have embraced the path to developing EE programs, private sector initiatives in the region are still incipient.

Energy Efficiency in Mexico. The 2012-2026 National Energy Strategy estimates that the annual demand for electricity will increase 3.4% each year, and the government has set the target of increasing the proportion of non-fossil fuels used to generate electricity to 35% of installed capacity by 2026. This has led to an increasing demand for clean energy sources in the country. According to the the Programa Nacional para el Aprovechamiento Sustentable de la Energía (PRONASE) and as a result of implementing energy efficiency mechanisms, the Mexican government estimates potential savings in final energy consumption of between 34,800 and 40,500 GWh by 2025. This would translate into an estimated investment in EE of US$19.8 billion to US$27.8 billion, which would create an estimated financing

[6] https://g20.org/wp-content/uploads/2015/09/G20-Climate-Finance-Study-Group-Annual-Report.pdf.
[7] http://unfccc.int/press/fact_sheets/items/4982.php.
[8] Climate Change 2014, IPCC Summary for Policymakers.
[9] http://unfccc.int/press/fact_sheets/items/4982.php.
[10] How to save US$36 billion worth of electricity. Inter-American Development Bank. 2009.

opportunity for financial intermediaries of between US$8.8 billion and US$12.4 billion over a period of 15 years[11]. In Mexico, the ESCO market did not emerge until the year 2000, due primarily to the fact that in Mexico the energy sector is a state monopoly. The ESCO market has grown in recent years from a total of 10 registered ESCOs in 2006 to 41 registered ESCOs in 2013.. In a study commissioned by the IDB, it was observed that only a small group of ESCOs had access to adequate financing from LFIs. There is a significant gap in the ESCOs' financing, which has not allowed this sector to develop its full potential and has limited the number of projects and services associated with clean energies.

Energy Efficiency in Colombia. The market for energy services is at a time of transformation. The point of departure is an EE market with barriers to financing including limited knowledge and experience by local financial institutions[12]. Improved efficiency in energy consumption is of paramount importance for the country, since it is expected that the domestic demand for electricity will grow steadily over the coming years. National projections expect an increase of nearly 31% between 2015 and 2028, while at the same time the annual cost of energy losses is estimated at US$ 5.2Bn.[13] Both national and international studies have identified significant EE market opportunities, and policy and regulatory initiatives are increasingly aiming to reap these potentials. First, the Green Growth Strategy of the National Development Plan 2014-2018 emphasizes efficient use of resources as a way to increase productivity and competitiveness while reducing emissions. Second, Colombia's Ministry of Environment identified significant energy efficiency potentials on the demand side - as well as the production and processing side - as being among the main mitigation opportunities[14]. Mitigation potentials were analyzed in the industry and residential sectors, identifying significant cost-effective potentials e.g. in the replacement of inefficient boilers. Third, as part of Colombia's Low Carbon Development Strategy, the Sectorial Mitigation Action Plan for the Electricity Sector,[15]the Plan emphasizes the importance of public-private partnerships to promote EE initiatives and identified mitigation actions in lighting, air conditioning, heating and cooling, and cogeneration, among others.

Energy Efficiency in the Caribbean. The EE market is still at the early stage of its development for private sector actors. Even if in the majority of countries the high cost of energy should stimulate the EE market, there are not significant private sector initiatives. In fact, considerable work remains to be done in terms of legal framework, awareness and the creation of active EE intermediaries. In Jamaica, savings of up to 100.1 GWh/year and over 25.2% reduction in consumption could be achieved with the right set of EE measures (EE lighting, A/C units and others) and a payback period of less than 3 years. In Dominican Republic, it has been estimated that at the national level energy savings of 26% could be achieved.

Private Sector Initiatives in EE: Status of the LAC Market. Private sector companies investing in EE[16] usually experience higher productivity levels, reduce energy costs and simultaneously limit GHG emissions. ESCOs are engineering companies (usually SMEs) specialized in evaluating and auditing energy savings potential, developing technical plans for EE investment, and installing and maintaining the EE equipment. They also provide an integral service including financing as part of the package of EE services.[17] Typically an ESCO model consists in providing the financing to the EE project, which will only be paid-back when the future energy savings are generated by the EE projects. Although this model

[11] Market Study of Sustainable Energy Finance in Mexico, IFC, October 2012.
[12] IDB market study under the program "Colombia Sustainable Energy Finance – C-SEF".
[13] National Energy Plan Colombia: Ideas 2050, UPME 2015.
[14] Technical support document for Colombia's INDC, July 2015, Ministry of Environment of Colombia.
[15] Action Plan for Mitigation in the electricity energy sector, Ministry of Mines and Energy of Colombia.
[16] EE projects include investments in efficient machinery and lighting, co-generation, renovation and retrofitting of existing facilities replacement of cooling and heating equipment, installation of smart metering and controls, substitution of fossil fuel energy with biomass production or natural gas, and installation of renewable energy facilities for self-supply purposes. (Eligibility of EE projects in Annex X).
[17] ESCO Basic Models, IFC energy service company market analysis http://www.ifc.org/wps/wcm/connect/dbaaf8804aabab1c978dd79e0dc67fc6/IFC+EE+ESCOS+Market+Analysis.pdf?MOD=AJPERES.

presents numerous advantages, there are several barriers to its development. Most of these barriers are country specific and are related to regulatory and legal frameworks in place for the EE contracts, technical limitations, lack of financial skills in EESP management, and behavioral patterns in business decision-making. However, limited access to adequate financing from LFIs remains the major and most common barrier to unlock EE in LAC.[18]

The lack of adequate financing, a major barrier for EE projects in the private sector. In LAC, private sector financing only represents 36% of the region's GDP[19] which is low when compared to other developing regions and affects mostly the SME sector.[20] A recent survey by the IDB and the Multilateral Investment Fund explained that the financing gap for SMEs is basically concentrated in banks,[21] which are the main financial providers of SMEs, and thus the main financiers of ESCOs. Furthermore, LFIs rarely evaluate EE financing as a project finance structure or taking the cash flows generated by the EE projects to repay the loans, which would be a more appropriate form of financing for small companies with a limited balance sheet. This is partly due to the lack of historical data on EE projects performance, to the costs embedded in structuring project finance, and to the high uncertainty perceived on the savings to be generated. Indeed, LFIs perceive an additional risk in financing novel and unproven EE projects and tend to analyze EE projects as traditional lending against a company's balance sheet. As ESCOs are usually SMEs with a limited size balance sheet, LFI financing prices-in a higher risk which results in high collateral, high interest rate and short term tenors (up to 1 year) which makes the terms of the loans for EE projects inadequate.

Green bonds as an alternative source of financing. There is nevertheless an alternative source of financing for these EE projects. Capital markets provide a platform for investors with appetite and capacity to participate in the financing of EE through debt securities in the form of green bonds. In the last five years, the green bond markets have expanded from US$909 million (in 2009) to US$36.9 billion (in 2014). The first bond labeled "green" was issued by the European Investment Bank (EIB) in 2007, with the funds used for EE and RE projects. Later, other multilateral organizations issued this type of bond: the World Bank, the African Development Bank (AFDB), the IFC, and the European Bank for Reconstruction and Development (EBRD). Corporate issuance of green bonds is gaining momentum representing an increasing share of the global issuance. However most of the issuances are balance sheet based, using the name and the rating of blue chip corporates to raise funds for green investments.

Green Asset Backed Securities (ABS). In the case of green ABS or green covered bonds (i.e. pool of green projects that are packaged, issued, and backed by the cash flows generated by the underlying projects), private sector companies can tap capital markets with the aim of accessing more adequate financing terms and conditions for their EE projects. Since the securities are backed by the EE projects' cash flows, and since the pooling reduces the risks and costs associated with each individual project, this financing mechanism is more flexible and less dependent on the existing balance sheets of ESCOs. Private sector companies can then issue green ABS and tap into capital markets with better financing in terms of collateral, provision of longer tenors and lower interest rates. Pooling and securitizing can thus bridge the financing gap and open the door to projects that would otherwise not be funded. However, in the LAC region this market remains underdeveloped.

General barriers to issuing green ABS in LAC. Capital markets can be challenging to the issuance of new asset classes. First, there is a requirement of a certain issuance size that requires the accumulation of a certain volume of EE projects, (which a single ESCO finds difficult to generate). Second, given the

[18] Guarantees for Green Markets, potential and challenges (IDB 2014). Marco Aldana, Isabelle Braly-Cartillier and Laura Susan Sufford.
[19] Financial Inclusion in Latin America and the Caribbean: Data and Trends FOMIN (2014).
[20] World Bank Data – Internal Credit to the Private Sector (% GDP) 2010-2014 –Mexico 31.4%, Peru 34%, Colombia 52.7%, Dominican Republic 26.5% and Jamaica 29%.
[21] Banks and the Missing Middle 7th regional survey FELABAN (2014).

almost non-existence of a LAC green bond market,[22] local investors are unfamiliar with the performance of the underlying EE projects, which can be mitigated by additional external credit enhancements. Third, the issuance of green ABS requires adequate legal and regulatory environments as well as the appropriate capital markets infrastructure (including among others market makers and arrangers with domestic placement capacities, rating agencies offering adequate evaluation services for securitization), and a certain level of sophistication from institutional investors.

B. Expected Performance against GCF Investment Criteria

B.1. Impact potential

The Programme will be a direct contribution to the shift to low-emission, sustainable development pathways in the participating countries. By overcoming substantive barriers to EE financing, new and additional financing resources and mechanisms will be mobilized for mitigation purposes. The capacity developed by the Programme and its demonstration effect will provide the foundation for expanded financing and mitigation beyond the direct intervention of the Programme.

- The Programme is expected to finance EE projects with a size below 30 MWh. The expected energy savings reflect the threshold for EE eligible projects to be financed under the Programme. Savings from eligible projects shall be at least 15% compared to the projects' baseline. Most of the investments will be in long-lived assets, meaning that the Programme will contribute to avoiding lock-in of high-emissions.

The GHG emission reductions from the underlying projects are expected to be 17,000 tCO2e per million of US$ invested over the lifetime of the projects. The aggregate expected emission reductions of the total financing are around 13.2 million tCO2e[23].

B.2. Paradigm Shift Potential

Potential for scaling up and replication. The proposed IDB Programme intends to replicate and scale up a pilot project "Capital Markets, a solution for financing energy efficiency" (ME-L1150) in Mexico and scaling it up to a regional level. The two step solution (Accumulation and Mobilization Steps) in the Mexico pilot project was recognized by the G-20 Climate Finance Study Group in Turkey (September 2015) as best practice to unlock the EE market through capital markets securities.

The proposed Programme will leverage on the lessons learned during the structuring of its first phase namely related to: (i) the optimal legal structure, (ii) the required issuance size demanded by institutional investors,[24] (iii) target different maturities in the debt markets depending on market readiness and investors' appetite, and (iv) the necessity of meaningful credit enhancements to attract investments in a new asset class. The Programme is therefore designed to be replicated worldwide, with EE or other underlying assets, with one or multiple off takers and will help closing the financing gap for medium and small scale EE projects (up to 30 MWh).

Within the context of the global drive toward green and climate bonds, the aggregation and monetization of EE finance through bond issuances is an innovation not previously applied by major international financial institutions. Above and beyond the introduction of the instrument in developing markets, the

[22] There are four green bonds in LAC, A wind power project bond in Mexico, a solar farm project bond in Chile, a wind power project in Uruguay, and an IFC green bond in Peru. Only the last one is expected to follow the Green Bond Principles.But investors do not take project risk.

[23] A methodology and calculator has been developed and provided with the submission of this funding proposal for standardizing GHG emission reduction calculations. Each participating ESCO must submit their calculation according to the methodology, and the master servicer will verify such calculations.

[24] Institutional investors are primarily pension funds, insurance companies, and mutual funds. Impact investors are those investors that seek not only financial returns, but social and/or environmental returns as well. For more information on the network of impact investors, see http://www.thegiin.org/cgibin/iowa/home/index.html.

Programme ground-breaking innovation by prioritizing the mobilization of domestic funding sources in addition to international investors, which will expose a new category of investors – institutional and impact investors in developing economies – to the opportunities from this capital market instrument. This supports the development of domestic capital markets, which will eventually also facilitate the participation of international sources of finance.

The GCF will be contributing to implement an innovative financing structure that can be catalytic to attract additional financing for a larger scale programme for EE in LAC as well as a demonstrative effect for other future interested parties. The proposed Programme seeks to address key financing barriers to realizing this potential for private sector actors facing financing constraints by LFIs. This is true for the countries that will be part of the Programme, but targeting countries of different sizes, different framework conditions will generate learning that is relevant for replication and scale-up throughout LAC but also in a wider global context.

Capacity building and knowledge generation will be developed in a range of areas such as identification, evaluation and implementation of EE projects; standardizing legal documentation and structuring; monitoring and verifying environmental impacts; certification of bonds as "Green Bonds" according to the Green Bond Principles and facilitating dialogue on any regulatory measures needed to enable capital market investment in EE.

Potential for knowledge and learning. Awareness raising, capacity building and dialogue will be an important element of the Programme and will target key audiences, in particular:

- The energy efficiency/ESCO community
- Domestic and international institutional investors
- Government regulators

The IDB is also committed to making knowledge and lessons learned from the Programme available to the international community, including both financial and development institutions, to enable further replication and upscaling of the approach. To this end, the IDB will submit to GCF Project Supervision Reports (PSRs) every 6 months and will participate in knowledge sharing events in LAC and in other region.

Contribution to the creation of an enabling environment. The Programme will help developing the green bond market in the participating LAC countries. This includes a whole suite of interventions such as methodologies for identifying and assessing EE projects; legal documentation and structuring; monitoring and verification of environmental impacts; certification as green bonds; dialogue on regulatory framework adjustments, among others.

These measures, – together with the demonstration effect achieved through the actual implementation - and the associated capacity building and awareness rising among key audiences in the EE and capital markets will contribute to strengthen an enabling environment for further expansion of this market.

Contribution to regulatory framework and policies. The Programme supports public policy priorities related to climate change, energy security, and productivity enhancement. With its focus on mobilizing private finance through the capital markets, the Programme is not primarily targeting domestic policy and regulation, but rather the mobilization of private sector investment for mitigation activities. The Programme is however strongly complementary with national, regional and local policy measures and regulation to promote EE, as such measures will help enable and increase demand for financing of EE investments. It will shift incentives toward low-carbon investments among both private and public sector end-users.

The direct contribution to policies and regulation is expected to come mainly from the identification of any regulatory barriers to ESCO type investments and to the introduction of securitized green bonds in domestic capital markets. This process will assist governments and regulatory agencies of the participating countries in identifying relevant improvements to the current framework conditions, thus assisting their mainstreaming of climate change considerations.

B.3. Sustainable Development Potential

In addition to climate change benefits, EE investments promoted through the proposed financing will bring about many economic and environmental co-benefits. The Programme will contribute to strengthening the productive sectors in the participating countries by reducing their energy consumption and maintenance costs, enhancing productivity and competitiveness.

The Programme will also benefit the business ecosystem of EE by building capacity within the domestic private sector (including LFIs), increasing the access to finance through capital markets securities for green investments. The Programme will help develop local capital markets while financing energy efficiency practices that will reduce energy consumption per unit of output, hence alleviating the host country's dependence on fossil fuels.

At the environmental level, EE improvements of at least 15% against projects' baseline will often displace fossil energy production, they will contribute environmental benefits.

B.4. Needs of the Recipient

The Programme will target countries with a significant potential for enhancing EE that prioritize mobilization of private investment to realize this potential.

The Programme will target countries of different sizes, with different economic circumstances including income levels, and with different framework conditions. The countries initially targeted (Mexico, Colombia, Dominican Republic, and Jamaica) have different needs and different levels of development of EE markets and local capital markets. The needs will also differ among the different sectors targeted (such as food processing, industry, automotive, hotels and hospitals, among others).

The market and institutional barriers leading to shortage of available adequate financing for EE projects of 30 MW or less tend to be common across many countries. LFIs in LAC continue to take a passive approach to financing of EE projects, reflecting lack of technical knowledge, perception of high risk of unproven EE technologies, and unfamiliarity with EE financing taking future energy savings to repay the loans. Green ABS are also a new asset class for all the countries in the region; local investors are unfamiliar with the performance of the underlying EE projects, which can be mitigated by additional external credit enhancements such as PCGs.

While the country-specific interventions will be tailored to the circumstances and specific needs, there are common needs across countries for Fund support in terms of:

- Economic needs for measures that can scale up investments in EE, leading to climate benefits, and productivity gains
- Financial needs for instruments that offer adequate financing terms (tenor, collateral and pricing) for EE investments.
- Institutional needs to structure and finance securitized green bonds and the underlying EE investment projects.

B.5. Country Ownership

Country ownership is essential for the success of this Programme, as it relies first and foremost on the capital markets readiness for issuing green securitized bonds as well as the existing enabling legal, market and institutional frameworks for the creation of this new asset class.

Most of the participating countries in the Programme – as well as other countries in the region – have developed or are in the process of developing policies, strategies, programs, or investment plans targeting climate change mitigation and energy efficiency. Initiatives include also Investment Plans for Climate

Investment Funds or National Appropriate Mitigation Actions (NAMAs) designed nationally to support climate change initiatives.[25]

Mexico. Improvement of EE is a key objective of Mexico Energy Sectorial Program (2013-2018) and is specifically included in its objective 5 which seek to increase the use of clean and renewable energy, promoting EE and social and environmental responsibility. Moreover, Mexico's Special Climate Program (PECC) 2014-2018 has a specific strategy (3.1) to execute EE actions and projects as parts of its objective 3 to reduce GHG emissions to transition to a competitive economy and a low emission development.

Colombia. Enhancing EE is an integral part of key policy and strategy documents of the Government of Colombia. There is a broad recognition of the potential of EE to reap multiple benefits including GHG emissions as well as atmospheric pollution, efficient use of energy resources, competitiveness, innovation and security of supply. The emphasis on EE is reflected i.e. in:

- The Low-Carbon Development Strategy and the associated Sectoral Mitigation Action Plan for electricity.
- The INDC of Colombia
- The National Development Plan and its Green Growth Strategy.

Both sectoral and financial public institutions are engaged in initiatives – including international collaborative efforts - to develop EE markets through NAMAs and public-private partnerships, and as such the Program is fully aligned with the priorities of the Government of Colombia.

Dominican Republic. Energy efficiency is a key component of Dominican Republic Economic Development Plan Compatible to Climate Change (Plan DECC) which is aligned to the National Development Plan 2030, and has been prioritized considering the impact of the development of the country, the potential of abatement of GHG emissions, the abatement cost and the complexity of implementation. Dominican Republic is also promoting the implementation of Energy Efficiency measures through a NAMA. As such the Program is fully aligned with the priorities of the Government of Dominican Republic.

Jamaica. Against the backdrop of high electricity rates and strong dependency on imported fossil fuels as well as the need to address GHG emissions, energy efficiency is a high political priority of the Government of Jamaica. This is reflected i.a. in the National Energy Policy 2009-2030, which sets targets in relation to renewables, energy efficiency, and GHG emissions. The target for energy intensity calls for a reduction of more than 50% from 2015 to 2030. Policy measures to advance energy efficiency include tax exemptions for energy efficiency equipment, energy labeling for refrigerators and freezers, and utility-led energy audit programs. The government has targeted a 30% reduction in energy costs through retrofitting of public buildings, and building codes have been updated to include requirements for energy efficiency based on international standards.

B.6. Efficiency and Effectiveness

GCF's financing will have a demonstration effect in LAC debt capital markets. As aforementioned, this programme will create a new asset class in LAC. If successful, it is expected that LFIs and other private sector players will replicate this structure in LAC for EE projects or other low carbon technologies such as renewable energy. A successful placement of the bonds in local capital markets will translate into a broader support from institutional investors to the development of the green bond markets, the local capital markets in general and particularly, in financing EE projects. Moreover, the IDB Programme could potentially serve as a blueprint for similar transactions in other countries, in particular in those economies where EE face similar financing barriers.

[25] NAMAs refer to any action that reduces emissions in developing countries and is prepared under the umbrella of a national governmental initiative. http://unfccc.int/focus/mitigation/items/7172.php.

Key efficiency and effectiveness indicators.

(a) Total project financing[26]	US$ 780 million
(b) Requested GCF amount (reimbursable)	US$ 215 million
(c) Expected lifetime emission reductions overtime	13,260,000 tCO_2eq
(d) Estimated cost per tCO_2eq (d = a / c)	US$**58.82/ tCO_2eq**
(e) Estimated GCF cost per tCO_2eq removed[27] (e = b / c)	US$**16.21/ tCO_2eq**

C. Programme Structure

The Programme Objective. The purpose of the Programme is to provide an alternative financing mechanism for EE projects in LAC through the issuance of green ABS. A second objective is to contribute to the development of LAC capital markets, by introducing green ABS under the highest standards by following the Green Bond Principles,[28] and fostering social and environmental responsible investments among local institutional investors.[29]

Description of the Programme. The IDB has two Green ABS Facilities:

- The first facility ("Phase I"): is a pilot project in Mexico "Capital Markets Solution for Financing Energy Efficiency in Mexico" and was approved by the IDB Board of Executive Directors in July 2014. This Phase seeks to support the ESCO market and reduce its financing gap for small/medium sized EE projects (less than 5 MW) in Mexico.
- The second facility ("Phase II") is a regional "Energy Efficiency Green Bond in Latin America and the Caribbean" and aims at i) bringing the pilot project in Mexico to scale by replicating the financing structure of Phase I (as defined below) with larger EE projects and ii) replicate the project structure in several capital markets of the LAC region. This second facility is expected to be approved by the IDB Board of Directors in November 2015, and is expected to finance EE projects with a size up to 30 MWh. This rollout Phase is expected to address the financing gap for EE projects in the private sector by promoting alternative sources of finance, and develop a new asset class in capital markets (both domestic and international).

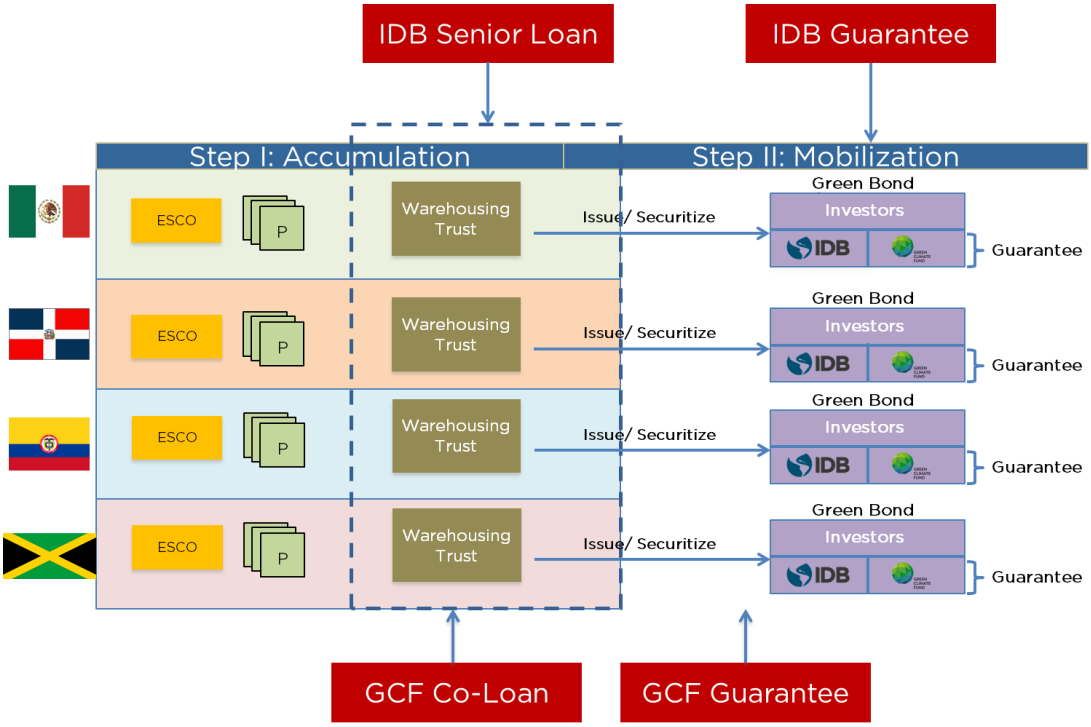
[26] Total Project financing, for the purpose of GCF core indicators calculations refers to the Private Sector amount mobilized through Bond issuance in the capital markets.

[27] It should be noted that this measure does not represent incremental private or economic cost of the GHG mitigation resulting from the Program. As it is often the case with energy efficiency, the targeted EE investments are characterized by being fundamentally cost-effective. The program aims at providing access to finance for these investments on appropriate terms, but does not rely on subsidized/concessional funds, except for the grant support for initial transaction costs associated with introducing the securitization instrument in new markets.

[28] Green Bond Principles are described here: https://www.ceres.org/resources/reports/green-bond-principles-2014-voluntary-process-guidelines-for-issuing-green-bonds/view.

[29] Institutional investors are primarily pension funds, insurance companies, and mutual funds. In the case Institutional investors sell the green securitized assets to retail investors, all applicable regulations (such as KYC) must be in place. Impact investors are those investors that seek not only financial returns, but social and/or environmental returns as well. For more information on the network of impact investors, see http://www.thegiin.org/cgibin/iowa/home/index.html.

Description of the Structure of the Programme. The Programme consists in a two-step financing mechanism, the Accumulation and Mobilization steps, that provide: (i) senior loans to special purpose vehicles (SPVs)[30] that will serve to finance, standardize and accumulate EE projects developed by ESCOs (**Accumulation Step**) for their further securitization[31]; and (ii) one or more partial credit guarantee (PCGs)[32] to support the securitized bonds (ABS) to be issued in the local or international capital markets (**Mobilization Step**). The PCGs will provide external credit enhancement in order to meet investors risk appetite. The financing mechanism can be used in a combined manner (Accumulation plus Mobilization Steps) or in a separate manner (either Accumulation or Mobilization) depending on the specific needs of the EE projects.



Total Financing of the Programme. The total IDB financing for the Programme described in this Programme is up to US$ 306 million.

Second, the Programme is expected to be complemented with up to US$ 217 fromt the Green Climate Fund. Total reimbursable financing from the Fund will not exceed US$ 215 million in the form of any

[30] "SPVs are entities created for a specific, limited and normally temporary purpose. They are limited companies or partnerships to which the debt of another company is transferred. By transferring its debt off its balance sheet into an SPV a company is able to isolate itself from any risk that the debt might pose. SPVs are often used in the securitization of loans or other instruments. For example, a bank may issue a mortgage-backed security (MBS), the income from which is derived from repayments from a pool of mortgage loans. The bank may wish to legally separate itself from the loans and does so by setting up an SPV and transferring the loans to it." (REUTERS, Financial Glossary, 2015).

[31] "Securitization is the process by which asset backed securities (ABS) are created. The assets to be securitised are sold to a special purpose vehicle (SPV), thus isolating the borrower from any claims for repayment. TheSPV then issues bonds or other debt instruments which can be traded in the same way as any other security. The money raised by the issuance of the debt is used to pay the borrower for the assets." (REUTERS, Financial Glossary, 2015).

[32] "The basic principle of a credit guarantee scheme is that a third party (the guarantor) shares the credit risk of a project with the lender and takes all or part of the losses incurred by the lender in the event of default by the borrower." A partial credit guarantee A guarantee only cover part of a loan granted by the lender to its borrower. (IDB, Guarantee for Green Markets, 2014).

combination of Loans and PCGs. The IDB is also seeking additional US$ 2 million in non reimbursable financing from the Fund to support the structuring of green bond especially to replicate and adapt the legal structure of Phase I and to structure issuances in small countries of LAC.

Third, the IDB also mobilized financing from the Clean Technology Fund (CTF) in the form of US$ 19 million in second loss guarantees of IDB Loans in Phase I. The CTF may participate with additional concessional financing in other utilizations under the Programme.

Fourth, the IDB shall also mobilize the China Co-financing Fund for Latin America (China Fund) during the approval of each utilizations under the Programme.

Finally, other co- financiers may support utilizations under the Programme on a case by case basis. Institutional investors are expected to bring-in at least US$ 780 million or its equivalent in local currency by investing in the green ABS issued in the capital markets. The Programme will have a 10-year term with at least 4 utilizations.

Selection Criteria for individual sub-projects utilizations. Although initial targeted countries under consideration include Mexico, Dominican Republic, Jamaica, and Colombia, other countries shall participate on market conditions. Given that the success of the Programme will rely first and foremost on the capital markets readiness for issuing green ABS, as well as on the necessary existing enabling environments, utilizations to be granted under Programme will be requested to meet at least three of the following criteria: (i) sufficient volume of EE projects in the pipeline of participating ESCOs which face a financing gap from LFIs; (ii) adequate legal and regulatory environments such as a clear bankruptcy law for an effective true sale of assets and certainty of asset repossession, adequate securities law for securitizations, etc.; (iii) readiness of local capital markets for securitization (adequate legal, regulatory enabling frameworks in capital markets); (iv) appetite and capacity of local investors to invest in these type of securities; and (v) the country has elevated costs of electricity.

In order for each EE project to qualify for financing, ESCOs must ensure that a basic set of eligibility requirements are met. The project must: (i) consist in nergy efficiency or generation of renewable energy, (ii) have energy savings of at least 15% relative to the pre-investment baseline or reduce at least 17,000 tCO2e per million invested over the life of the operation, (iii) be in compliance with local laws pertaining to operating licenses and Environmental, Social, Health and Safety (ESHS) permitting where required, (iv) rely on an energy efficiency audit to determine savings, and (v) ensure proper disposal and management of all wastes, particularly when labeled as hazardous, according to agreed procedures and in accordance with local law.

Amount of financing per utilization. The maximum amount of GCF financing for the Accumulation and Mobilization Steps for any given utilization cannot exceed 40% of the total financing. Reaching the maximum size permitted under the Programme, could be supported if any given country demonstrates market readiness for a benchmark ABS issuance. Benchmark issuances are usually characterized by an issuance size above US$ 200 million and are important to set market references and attract a higher number of institutional investors. This is particularly relevant for this novel asset class and to contribute to the Programme objective of developing LAC capital markets, and fostering social and environmental responsible investments among local institutional investors. On the other hand, in the case of smaller LAC countries with adequate capital market readiness but lacking a critical mass of EE projects, an SPV may be established offshore to accumulate EE projects from several countries with a view to securitizing them in the international capital markets.

Compliance with IDB Non Sovereign Guarantee (NSG) Policies and Procedures. In each utilization under the Programme, project participants and any relevant party to the utilizations will be subject to the same integrity review, legal analysis, structuring requirements, credit analysis, etc., applicable to all IDB´s Non Sovereign Guaranteed (NSG) operations, and will be approved by IDB´s Management in accordance with the Procedures for Processing NSG Operations.

Non-financial additionality. The Programme will leverage on the lessons learned during the structuring of the first IDB pilot in Mexico (ME-L1150). In that context, the IDB brings its know-how in structuring the transaction and the GCF US$ 2 million grant is instrumental to replicate the structure, namely in smaller countries of the Caribbean. Non-financial additionality also consists in the creation of a new asset

class to be issued in local capital markets under the highest available standards (the Green Bond Principles). This will promote EE amongst institutional investors and impact investors in the debt capital markets. The Programme is expected to generate a wide array of learning experiences that are relevant for replication and scale-up throughout LAC but also in a wider global context.

C.1. Value Added for GCF Involvement

The potential to develop instruments to pilot and scale up available financing for investments in EE represents a possible niche for GCF. The international climate change movement has called on the private sector to take a leadership role in mitigating climate change yet few EE projects have directly targeted private sector companies. The proposed Programme offers the Fund an opportunity to position itself as a strategic player when it comes to mobilizing investment for private sector EE projects in the key areas of industry, buildings, cities, and appliances, among others.

By participating in the Programme, the Fund will contribute to achieving a paradigm shift in the financing of such investments by crowding-in local investors via the capital markets (i.e. mobilizing at scale) as well as ESCOs and private sector companies. This would be achieved by demonstrating the applicability on the ground in different markets and regulatory contexts (i.e. replication of a tested structure), building on the initial experience from the pilot Phase I in Mexico.

The targeted support of GCF for US$ 217 million will be crucial for the success of this Programme. This reimbursable financing for the Accumulation and Mobilization steps consists in any combination of Loans and PCGs that will not exceed a total combined financing (Loan and Guarantees) of US$ 215 million. For the non-reimbursable portion, the IDB is suggesting US$ 2 million grant as defined below.

- In the **Accumulation Step in Phase II**, the co-loans from the GCF will help increase the size of the Programme and set more adequate lending rates of the warehousing lines. The joint financing and risk sharing mechanism by IDB and the GCF makes financing conditions possible at competitive rates.
- In the **Mobilization Step in Phases I, and II**, the green bonds issued out of this Programme will constitute a new asset class that will require credit enhancements from third parties to improve its risk profile. Again, the shared provision of PCGs by IDB and the GCF will enable the bonds to achieve an adequate credit rating for which institutional investors have an appetite.
- Finally, the **concessional funding (grant)** will be instrumental scaling up the Programme to LAC, in absorbing the costs of market analysis, financial and legal structuring, implementation, and legal documentation necessary to develop a new financial instrument, as well as the standardization of the asset class required for securitization, monitoring, reporting, and green certification under the Green Bond Principles.

C.2. Environmental and Social Assessment

Based on IDB´s Directive B.13 of the Environment and Safeguards Compliance Policy (OP-703), the Programme is classified as a financial intermediary and as such is not categorized according to its potential environment and social (E&S) impacts and risks. Based on the nature of Programme activity to be assumed, to include installation of co-generation facilities, substitution of fossil fuel energy with biomass production or natural gas, and renovation and retrofitting of existing facilities, this operation is classified as low risk (FI-2).

Environmental and Social Risks and Impacts

Potential risks and impacts associated with ESCO financed activities

The Programme proposed preliminary pipeline of activities includes the following type of project percentage breakdown: co-generation of electricity (16%), actions in steam circuits (steam traps), (26%), replacement of equipment, machinery and lighting (41%), installation of smart metering and

controls (17%)[33]. Per the eligibility criteria no operation can exceed 30MW of generation capacity or US$36 million, the average investment pipeline is roughly US$14 million in investment. EE investments must generate energy savings of at least 15%, and 17,000 tCo2e per million invested.

The environmental social health and safety (ESHS) risks and impacts are expected to be low to moderate, and relate primarily to the substitution of old technology and equipment, and the proper disposal, recycling and reuse of materials, especially those considered to be hazardous. These impacts can include inadequate disposition of gases used for cooling (i.e., chlorofluorocarbons), asbestos from old insulation, and industrial waste from old machinery/plant operations. There may be health and safety risks associated with the disposal of such wastes, as well as the installation of new equipment.

Environmental and Social Management

Management of Environmental and Social Risks

ESCOs under the Programme shall operate on existing environmental and social management systems or shall be in the process of developing a set of environmental and social procedures with the aim to identify, manage, and monitor related E&S risks and impacts associated with the proposed investment activities. ESCOs must have a specific set of procedures for separating wastes and properly disposing hazardous wastes.

In the context of co-generation facilities, the existing generation facilities will be left on site and remain available as a source of backup power. Hazardous waste removal, it will be removed according to local and national regulation and follow best practices.

Additionally, in qualifying as a Green Bond, the developer will need to ensure that a minimum set of eligibility standards are followed in accordance with either the Climate Bond Standard or the Green Bond Principles.[34] In either instance, independent external assurance will be provided to confirm each project's status as being eligible for inclusion in a Green Bond.

The E&S requirements noted below detail the nature of E&S risk management measures that will be developed and implemented corresponding to this Programme.

Environmental and Social Requirements

For this operation which involves financing of energy efficiency and clean energy projects for an average value of US$14 million, the IDB will require any ESCO under the Programme to:

(i) Comply with all applicable local environmental, social, health and safety, and labor regulatory requirements, and in relation to the financing of projects to ensure that each loan complies with: (a) in-country ESHS and labor regulations; (b) the IDB List of Excluded Activities for Non-Sovereign-Guaranteed (NSG) operations; (c) the Fundamental Principles of the Rights at Work, and (d) the ESCOs' Environmental and Social Management System or Procedures;

(ii) Develop and/or present a set of internal guidelines and procedures to ensure effective waste management of old technology and equipment. This will include procedures for recycling, re-use, and discard of wastes. Additionally, it will include special procedures for the disposal of hazardous wastes in accordance with local law.[35]

(iii) In the case of co-generation financing, all investments will be limited to brownfield operations (greenfield development is excluded), and ensure that in instances of expansion, the development complies with World Bank Environmental, Health and

[33] These percentages may vary in each individual utilization. An assessment of the environmental and social risks of the then pipeline will be conducted to determine the environmental and social requirements that the Sub-Project shall meet.

[34] For Climate Bond, see http://www.climatebonds.net/standards/; for more information on Green Bond Principles, see http://www.ceres.org/resources/reports/green-bond-principles-2014-voluntary-process-guidelines-for-issuing-green-bonds.

[35] Hazardous materials are those that could cause injury or death; or damage or pollute land, air, or water. They are defined as substances that are ignitable (flammable), corrosive, toxic, explosive, or reactive.

Safety (EHS) Guidelines regarding emissions and other pollutants. An audited report to this effect is required of each sub-investment.

(iv) Ensure that ESCOs have received the ISO 14001 certification as a condition precedent to the loan disbursements

(v) Previous to the bond issuance, ensure that that external assurance is undertaken to confirm the projects' status as a Green Bond.

(vi) Present an Annual Environmental and Social Compliance Report (ESCR) with information on the project portfolio, and with information on any particular risk issues identified with respect to projects and mitigation or corrective measures agreed with clients and/or taken by the ESCO.

The IDB will supervise the environmental and social aspects related to the use of the proceeds of the Programme either by an in-house specialist or with external consultants, and if necessary, will require means of addressing specific impacts and risks and/or enhancing management. The development of the proposal has followed the IDB's procedures for environmental and social safeguards,Ongoing engagement and consultations with project participants throughout Programme implementation will be ensured by IDB in accordance with the Fund's environmental and social safeguards and stakeholder consultation guidelines.

C.3. Programme Risks and Mitigating Factors

EE Project Performance Risk. There is a potential risk in that the EE projects will not achieve the expected energy savings. *Mitigating factor:* This risk is transferred to the Project Developers. If the savings are not achieved due to equipment failure, the warranties/surety bonds furnished by the technology providers would be enforced. The performance based financing contracts align the ESCO incentives, since their earnings are subordinated to the payment of the debt and are contingent to the projects generating the projected savings.

Implementation Risk. Unlike large RE projects, EE projects have no construction risk, and EE projects implementation risk is very low. *Mitigating factor:* Typically in an ESCO model type of project the ESCO may sub-contract third parties to implement the EE projects, which includes the contractor's surety bonds. Therefore, as in the case of the performance risk described above, the Project Developer incentives are fully aligned (since they have the priority to seek the best contractors who work with the best technology providers). Payments to the Project Developer depend on timely implementation of the EE projects and the starting date for project implementation.

Operation Risk. There is a risk that the ESCO may not be able to continue the project's O&M. *Mitigating factor*: In each utilization, it will be fundamental to identify other ESCOs that could serve as replacements. Back up servicing agreements may be needed to be signed in such cases event**.**

Market Risk. The Programme is designed so that the loans offer an exit through the public offerings and placements of green bonds. In the case of the Phase I pilot in Mexico, the market exit is expected to be in 18 months. Additionally, although the green bond market shows accelerated growth, there is a risk of inadequate pricing or broader market conditions for their placements. *Mitigating factor:* The comfort provided by the PCGs of IDB, GCF and CTF is fundamental to obtaining the highest credit rating and to ensure the appetite of institutional investors. In addition, IDB will seek to certify the bond with an approved third party verifier in order to attract global impact investors.

Currency Risk. The IDB can provide financing (both Loans and PCGs) in local currency, hence eliminating Foreign Exchange (FX) risk in its financing. However, the GCF financing shall be provided in US$ which can result in FX losses related to fluctuations of local currencies against the US$. The SPVs to be established under local law are expected to provide financing in local currency in both Accumulation and Mobilization steps. At this point, the SPVs are not endowed with resources to reduce FX risks i.e. entering into hedging agreements or instruments which would help mitigate the GCF FX losses. The GCF will be exposed to FX risks during the life of the Programme. *Mitigant factor:* Currency diversification provided by the participation of different LAC countries could help reducing FX exposure.