

**CTF PRIVATE SECTOR PROPOSAL  
A JOINT SUBMISSION FROM IFC & IDB**

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| <i>Name of Project or Program</i>                   | Colombia Sustainable Energy Finance Program (C-SEF, the “Program”)  |
| <i>CTF amount requested</i>                         | Total: US\$17.5 million comprising: <ol style="list-style-type: none"> <li>1. Investment – up to US\$15 million equivalent in risk sharing facilities (RSF) and in loans.</li> <li>2. Advisory services (AS) component - up to US\$2 million (US\$1.07 million for IFC’s account, US\$0.93 million for IDB’s account<sup>1</sup>).</li> <li>3. Implementation and supervision budget - US\$500,000 (US\$320,000 for IFC’s account, US\$180,000 for IDB’s account).</li> </ol> |
| <i>Country targeted</i>                             | Colombia  |
| <i>Indicate if proposal is a Project or Program</i> | The Program proposal represents a comprehensive initiative to help develop a market for private financing for energy efficiency and cleaner production in Colombia by supporting financial institutions (“FIs”) and addressing market barriers on a programmatic basis.   |

**DETAILED DESCRIPTION OF PROGRAM**

**Fit with Colombia Country Investment Plan (CIP)**

This proposal is consistent with Colombia’s Country Investment Plan (CIP), which was endorsed by the CTF Trust Fund Committee on March 15, 2010. Colombia’s CIP describes the country’s greenhouse gas (GHG) emissions profile and indicates that energy efficiency and public transport are key strategic areas to apply CTF resources, including through direct private sector initiatives. This proposed CTF Program, with a US\$17.5 million allocation, will help develop and support the scale-up of Colombia’s sustainable energy financing (SEF) through the private sector by supporting FIs, energy service providers and other market actors on a programmatic basis. As indicated in the CIP, the Program will be designed and implemented as a coordinated effort between IFC and IDB in order to better promote the transformation of the private sector as a vehicle for sustainability in Colombia.

This Program involves the use of a portion of the amounts earmarked in the CIP for each of the multilateral development banks (MDBs). The remaining amounts will be included in subsequent energy efficiency programs to be submitted by IDB and IFC. As outlined in the CIP for Colombia, an additional area of work to be funded by CTF resources is related to the transport sector. IBRD and IDB are expected to carry out the transportation related activities.

**Colombia’s GHG emissions profile**

Based on the official statistics included as part of the latest National Communication on Climate Change (2008), Colombia emitted 180 million tons of carbon dioxide equivalent gasses (Mt CO<sub>2</sub>e) in 2004, including agriculture (38%), energy (37%), land-use, land-use change and forestry – LULUCF (14%), waste (6%), and industrial processes (5%). In terms of energy sector emissions, Colombia ranked 48th in the world and fifth in Latin America in 2005, with 56 Mt (or 31% of total emissions) from fossil-fuel combustion, and a further 10 Mt from fugitive emissions and biomass combustion. The country’s annual per capita GHG emissions from the energy sector in 2008 was 1.51 t CO<sub>2</sub>e.

<sup>1</sup> IDB’s figure includes amounts that may be disbursed by IDB to IIC, as a Sub-implementing Entity

In 2007, Colombia's energy mix was based on oil (42%), hydropower (31%), natural gas (19%) and coal (8%). The final energy consumption was divided as follows: transport (39%), industries (27%), households (22%), agriculture and mining (5%), and the commercial and public sector (5%). The remaining 2% is made up by the construction sector and other unidentified uses.

Colombia has a rich endowment of energy sources. The natural gas reserves in 2008 were more than seven tera cubic feet (of which 60% were proven reserves), which may last another 20 years at the current rate of utilization. Similarly, Colombia has seven billion tons in coal reserves, which at current rates of use would last 100 years. Oil reserves are more limited and may not be enough to allow for self-reliance, even in the short-term.

Colombia's electricity sector is relatively clean in terms of emissions, as approximately two-thirds of the electricity in the country are generated based on hydropower. Despite the sector's low average emission factor, a reduction in the total amount of energy demanded from the existing system (through efficiency measures, or through the generation of electricity from renewable energy sources) can have a significant emission reduction impact because the last marginal units of power utilized are often fossil-fuel based and thus have the highest emission factor.<sup>2</sup>

With electricity demand growing at between three and four percent per year, this reduction in consumption can also prevent or delay building new power generation capacity which is currently slated to include a 150% increase in coal-fired capacity over the next 12 years (from 700 MW coal-fired generation capacity to 1,750 MW).<sup>3</sup>

### **Sustainable Energy Market in Colombia**

Colombia acceded to the UNFCCC on March 22, 1995, and ratified the Kyoto Protocol on November 30, 2001. The first National Communication on Climate Change was submitted to the UNFCCC Secretariat in 2001 and a second National Communication was prepared in 2008, though apparently was not formally submitted to the UNFCCC Secretariat. As part of that process, the government reviewed its GHG emissions profile and assessed its mitigation and adaptation activities.

The Colombian government has demonstrated commitment to reducing the energy intensity of its economy by taking important first steps to create an enabling environment for energy efficiency. In 2001, Colombia passed Law 697, which set out the framework for the development of efficiency policies and regulations, citing the need to improve energy use as an issue for economic competitiveness of the country. In December 2003, the Ministry of Mines and Energy established the Program for the Rational and Efficient Use of Energy and in Non-Conventional Energy Sources (PROURE), a comprehensive program focused on promoting energy efficiency and use of alternative energy sources in the country. PROURE also includes efficiency standards for appliances and systems (motors, refrigeration, boilers and lighting).

In 2004, the government established the Inter-sectoral Commission for the Rational and Efficient Use of Energy and for Non-conventional Energy Sources (CIURE)<sup>4</sup>, which supports the Ministry of Mines and Energy with a variety of attributions such as: (a) Coordination of policies related to the energy efficiency and alternative energy sources among the different institutions; (b) Support to programs and projects related to energy efficiency and alternative energy sources; (c) Monitoring of results of PROURE; and (d) Provision of technical support related to strategic decision-making related to laws or regulations that affect the energy sector.

The *Unidad de Planeación Minero Energética* (UPME, the Mining and Energy Planning Unit of the Colombian Ministry of Energy and Mining) is carrying out two additional programs that are particularly relevant. In the construction sector, UPME has a project focused on energy efficiency (EE), with the objective of improving energy use in buildings and in particular for heating, ventilation, air conditioning and lighting. The ultimate goal of the project is to reduce the emissions of GHG and ozone-depleting substances. UPME is also carrying out the National Strategic Integral Energy Management Program that aims to improve EE in the enterprise sector through three

<sup>2</sup> UPME. 2009. *Plan de Expansión de Referencia. Generación y transmisión 2009-2023*. Ministry of Mines and Energy.

<sup>3</sup> UPME. 2010. *Proyección de demanda de energía eléctrica y potencia máxima*. Ministry of Mines and Energy.

<sup>4</sup> The institutions participating in CIURE are the Ministry of Mines and Energy, Ministry of Environment, Housing and Territorial Development, Ministry of Industry and Commerce, Colciencias and the Energy and Gas Regulatory Commission (CREG).

components: (i) advanced technical training in EE to incorporate the topic in university curricula; (ii) assist companies with incorporating integral energy management; and (iii) development of an informational system that consolidates the experiences and lessons learned of the program.

There is limited experience with fiscal incentives for promoting the use of cleaner technologies in the country. Law 788 was enacted in 2002 with the intent of encouraging the purchase and implementation of equipment and technologies that contribute to reduced GHG emissions. This law allows for 15 years exemption on revenue derived from the sale of energy generated from certain renewable sources such as agricultural biomass or residues. Nonetheless, its application is limited to those companies that are able to obtain certified emission reduction credits (CERS) and that use 50% of the proceeds from the sale of CERS for social programs. Another part of this law established that the import of machinery and equipment for use in projects that generate CERS are not to be subject to value-added tax.

The government of Colombia and the MDBs are active in creating adequate finance mechanisms for EE. IFC's Advisory Services Investment Climate program, for instance, is currently working on a Green Building Code<sup>5</sup> project focused on reviewing and analyzing possible regulatory reforms, including potential financing reforms in order to promote improved practices in the construction sector.

The Inter-American Development Bank (IDB) approved a programmatic policy-based loan in late 2009 that provides the Colombian Treasury with resources to finance specific climate activities under its National Development Plan, which include the formulation and implementation of a National Climate Change Policy, with an emphasis on coordination between Colombia's planning agency and the productive sector ministries. This policy document is expected to include: (i) the conceptual policy framework and guidelines; (ii) strategies for sectoral, territorial, information and economic studies; (iii) institutional strengthening; and (iv) identification of general strategies for mitigation and adaptation. It is also to include a policy implementation plan and the creation of a National Climate Change System, led by the National Planning Department and the Environment Ministry, and which will include public regional and local levels, as well as civil society and the private sector.

Bancoldex, a second-tier public financial institution, launched a line of financing for FIs targeting EE (called the Bancoldex-URE<sup>6</sup> program). Despite offering price-competitive lines of credit for EE financing to FIs in Colombia, these lines were not utilized, due to unfamiliarity of FIs with how to process and market them appropriately, coupled with a lack of demand from end-users.

The Colombian government is currently considering the establishment of a fund that will specifically target EE barriers in the residential sector. It is also interested in studying how to create a more comprehensive enabling environment for EE, which may include, for example, incentives through a rate setting mechanism, or targeted regulatory incentives for distribution companies that invest in their clients' EE.

Currently in the design phase, the National Educational Program for the Rational Use of Energy intends to introduce the topic of energy use, and EE in particular, into the educational curricula throughout the country. This program will be complemented by advertising campaigns intended to encourage EE practices and culture through education and use of product labeling.

From the private enterprise perspective, increased awareness about environmental concerns is already taking root. According to a survey carried out by the National Business Association (ANDI) in October 2009, climate change is a topic high on the list of concerns of private sector companies, with 69.7% of the Colombian industries indicating that its business will likely be affected by this phenomenon. Moreover, almost 75% of the businesses surveyed indicated that they expected an increase in energy costs and more than half anticipate water shortages for their operations over the coming years. Among the possible measures to be undertaken by the private sector in the next

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<sup>5</sup> Green building (also known as green construction or sustainable building) is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort.

<sup>6</sup> URE means "Rational and Efficient Energy Use", or in Spanish, "Uso Racional y Eficiente de la Energía".

five years to mitigate climate change, 80.3% of those surveyed believed that EE will be a crucial piece of any effort and that in this regard awareness-raising and training for company personnel will be paramount.

Existing programs have been successful in demonstrating the potential of EE initiatives, but are currently too small and isolated to catalyze a robust and sustainable market for EE and cleaner production (CP)<sup>7</sup> projects. Despite such programs, end-users face informational barriers that prevent them from making an informed energy efficiency improvement investment decision due to being unaware of the benefits, technological components and steps required to execute relevant measures. Another missing piece, which is even more significant, is access to suitable financing for EE improvements. Thus, a coordinated effort is needed, requiring significant financial resources and know-how that are not currently available in the market. CTF resources will be used to enable private FIs to gain practical experience and jump-start the development and deployment of appropriate financial instruments. This methodology will unlock latent financial resources which are currently constrained by risk perceptions. Resources will also be used to raise awareness among energy end-users, develop technical capacity among energy service providers, and identify mechanisms for different market players to partner with FIs to expand sustainable energy finance in the country.

The government has indicated its support of the proposed CTF SEF Program for its ability to mobilize the private sector, complementing the public sector actions already taken and planned.

### **Energy efficiency potential**

Colombia possesses significant potential for EE savings throughout its economy in the industrial, commercial and residential sectors. While the economy of Colombia has become less carbon intensive during the last two decades, and currently stands at 0.43 kg CO<sub>2</sub> per US\$1 of output (compared to a Latin American average of 0.52 and a global average of 0.73 per US\$1 of output) current socioeconomic and resource factors indicate that this trend is set to be reversed under a business as usual scenario of increasing investment in transport and electricity generation with higher carbon intensities (e.g., use of coal).

Significant opportunities for the scaled-up implementation of EE/CP technologies and processes in electricity and thermal end-users exist across all sectors of the economy. This can include the introduction of efficient technologies and processes, end-use renewable energy technologies (in particular solar water heating), and cogeneration systems. According to recent studies<sup>8</sup>, increasing the use of EE in electricity and thermal energy end-users across all sectors of the economy could lead to combined emission reductions of 228 Mt CO<sub>2</sub>e in a 20-year period, at an average net cost of negative 3.4 US\$/t CO<sub>2</sub>e, considering energy savings<sup>9</sup>.

The potential reduction in energy demand from EE investments corresponds to a reduction in current and future fossil fuel combustion for both electricity generation and direct use for heat. In a study conducted by *Fundación Bariloche*, it was determined that by implementing certain EE measures, Colombia has the potential of reducing between 3.9% and 4.2% of its electricity consumption, which also coincides with the expected growth in electricity demand over the coming years, creating the possibility of net zero growth in energy use.<sup>10</sup> According to UPME, the emission reductions could reach 10% of the national electricity consumption, or 7,500 GWh per year in 2025, and would involve annual emission reductions of more than 2 Mt CO<sub>2</sub>e (or 3.1% of total emissions stemming from the

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<sup>7</sup> Cleaner production makes more efficient use of resources such as raw materials, energy, and water along a company's value chain. This reduces waste and saves companies money on direct input and cleanup costs. Many cleaner production investments also reduce emissions of local pollutants, which benefits surrounding communities.

<sup>8</sup> Cadena, A.I., et al., 2008. *Colombia: Diagnóstico, perspectivas y lineamientos para definir estrategias posibles ante el Cambio Climático*. Emgesa, Codensa, Universidad de los Andes.

<sup>9</sup> The fact that mitigation cost of EE is "negative" means that, from an economy-wide perspective, EE interventions, rather than having a cost, yield positive net benefits to the economy - in this case a benefit of US\$3.4 per ton of CO<sub>2</sub>e abated (this 'negative cost' is typical for EE). These results, however, only consider the costs of the investments themselves against the energy savings and exclude the costs of removing the financial, regulatory and knowledge barriers that are unique to EE opportunities and for which CTF support is critical.

<sup>10</sup> Consorcio Bariloche – BRP Ingenieros. 2007. Consultoría para la formulación estratégica del Plan de Uso Racional de Energía y de Fuentes No Convencionales de Energía 2007 – 2025.

electricity sector).

### **Barriers to market transformation**

Increasing sustainable energy (SE) investments and activities in the Colombian economy will confront a number of interrelated barriers including: (i) the absence of activities specifically targeted towards supporting EE/CP efforts, and in particular the lack of a services market to support companies interested in using energy more efficiently such as energy service companies (ESCOs); (ii) lack of information on improved technologies; (iii) lack of awareness among private enterprises as to the economic benefits of EE/CP; and (iv) absence of FIs that act as promoters of investments in EE.

### **Financial institutions**

Currently there is a dearth of financing available for EE/CP, which is due to insufficient familiarity with this opportunity in the banking sector. The lack of relevant expertise and capacity among FIs in terms of how to market, analyze and appropriately structure EE/CP projects results in relatively high transaction costs for the bank and high interest rates for the client. This in turn discourages companies to seek financing for EE/CP due to high interest rates that reduce the cost effectiveness of the EE/CP project.

**Limited experience with EE/CP financing.** FIs assess companies based on their current and historic financial position. Expected savings or cost reductions from the new EE equipment/technologies are not reflected in past financial statements, so FIs have difficulty assessing such transactions. Moreover, FIs are often reticent to provide financing for specific equipment or technologies, as they lack the technical expertise to evaluate them.

**Risk perception.** This same lack of knowledge manifests itself as inflated risk perception by FIs, as they are uncertain about the return expectations for EE/CP projects because such loans have not been systematically made and monitored in their markets to date. This discourages them from developing new and unproven lines of business/products. These risk perceptions due to a lack of familiarity also puts additional stress on the often weak credit profiles of customers. This is an even more significant barrier given that most EE/CP equipment has weak collateral value, which focuses the risk analysis even more strongly on a company's financial situation, rather than on the merits of the EE/CP project/investment.

While there are some FIs in Colombia that are more knowledgeable about EE/CP opportunities and have even established dedicated units within their institution to spearhead their interest in this area, the vast majority of the FIs have yet to incorporate basic sustainability related practices.

In this context, barriers among FIs can be addressed in two ways. Firstly, the barrier can be addressed with risk management products (such as RSFs to banks), which help mitigate FIs' overall risk perceptions regarding these investments and, in some limited cases, direct investments (including loans with convertible grant components) to the FI. CTF finance is needed to mitigate these risks for FIs and spur them into entering this new market.

While both IFC and IDB do have a track record of EE programs with FIs in other regions, there remain risks for such projects in Colombia. For instance, FIs have a limited track record underwriting this asset class (EE projects) and IFC and IDB would not assess the risk of each individual sub-loan, but instead will transfer knowledge to the FI on how to assess EE loans, and let the ultimate credit decision remain with the FI.

As for limited cases for direct investments instead of RSFs, although MDBs have the ability to lend to banks on relatively longer tenors, it does not have the ability to offset the initial costs of developing SEF lines through concessional interest rates. CTF will also allow IFC to be able to move quickly with multiple banks, and thus push the programmatic approach in the local market to reach market wide transformation at a faster rate.

Secondly, an AS program is needed to support the FIs with this transformation and to assist their entry into this new market area. Such support would consider the different experiences of each FI, so as to provide the necessary and targeted assistance needed, tailored to the particular FI. Based on initial discussions with targeted FIs, it seems that the more advanced and sophisticated FIs may only need support related to carrying out EE audits among prospective client companies and building a pipeline of potential deals, while less experienced FIs may require more support to develop an energy efficiency finance strategy, help train their sales force and their credit analysts

on the product and on the assessment of the risks, benefits and characteristics of finance for EE. In the latter cases, technical assistance activities would include capacity building and knowledge sharing with other global or regional FIs, which have already developed EE/CP lending programs, as well as specific support in creating appropriate financial products for this area of financing. As FIs become better able to assess and incorporate the financial benefits of EE/CP projects into their credit decisions and portfolio, and as interest rates decline for these financial products as a result of improved understanding, the client base for efficiency financing products is expected to grow.

It is important to note that EE/CP investments cannot be scaled up by addressing the barriers for FIs alone, but rather must be accompanied by capacity building and technical tools designed to educate end-users regarding the benefits and opportunities of EE/CP investments, thus creating demand for finance. Otherwise, this Program would encounter the same hurdles and difficulties as the Bancoldex program mentioned previously.

### Energy end-users

As the end-users of energy, private companies are the principal target for any EE/CP program. In Colombia, although the industrial and other sectors are subject to high energy costs, especially in the case of electricity, there has been limited experience with EE practices and use of improved technologies to date. With the government-led program of PROURE, some of the necessary framework conditions and basic foundation for encouraging EE practices are occurring. Nevertheless, there remain some key barriers related to energy end-users, indicated below.

**Lack of awareness of end-users as to the economic benefits.** Many end-users are unaware of the economic benefits of incorporating EE practices in their companies. These benefits are especially acute among industrial companies, as electricity prices for this segment are particularly high. Knowledge dissemination beyond what is currently being undertaken by the government is necessary to create capacity and demand, thereby catalyzing the adoption of EE technologies. The knowledge barrier among end-users can be addressed by programs that educate consumers directly, or train the technicians and industry groups that in turn will educate consumers and carry out EE measures. Such programs should provide information and advice to consumers regarding EE, facilitate the incorporation of EE practices by connecting them to trained technicians that can put in place the measures, and the needed financing to make it happen.

**Insufficient technical capacity.** Many companies in the country have never conducted energy audits in their operations, and lack adequate management/monitoring systems for their own energy costs, impeding their ability to measure the amount of possible savings. Such assessments help companies understand the level of cost-savings that can be achieved through technology improvements, and the return on investment of making the equipment purchases or process changes. Lack of familiarity with how to carry out such audits or even how to select the appropriate qualified technical help can be an obstacle for companies. SMEs are especially hard hit by this as they often lack the technical capacity to assess potential energy service providers and frequently suffer from limited resources to hire external consultants needed for such assistance.

**Lack of access to financing.** In other instances, FIs require high levels of collateral from their clients (up to 150% of the financing), impeding access, particularly among SMEs. Financing terms have often been restrictive and unattractive for customers. Constrained access to finance renders companies, especially SMEs, unable to make the necessary changes, or restricts them to making only small incremental upgrades within the grasp of available internal resources. This also limits their choice of equipment and technologies to be used, often times relegating them to use cheaper, sub-standard equipment, not optimal for their needs nor the best available technology.

### Summary of the Program and use of CTF funds

As indicated above, most of the barriers to EE/CP are linked to knowledge and financing and can be addressed with scaled informational and financial programs directed at the private sector. Colombia's market structure offers a unique opportunity to "fast track" behavioral change across many sectors simultaneously because the private sector in the country is led by seven major conglomerate groups or affiliations. Each economic group has historically included affiliations with FIs, as well as major industrial and commercial companies. As a result, the opportunity

exists for IFC, IDB and CTF, through this Program, to obtain the “buy-in” from one or two of these groups for EE/CP programs (if only as a competitive advantage) to further catalyze the uptake of EE/CP across multiple sectors concurrently.

The proposed Program is designed to scale up the use of EE/CP practices by encouraging investments from end-users by increasing access to appropriate finance for such investments. The proposed Program will include both investment and AS components. The investment component aims to transform the financial sector towards low-carbon, climate-conscious behavior, and in doing so, support the economic competitiveness, sustainable development, and social well-being of the people. The proposed Program will encourage FIs to develop appropriate lending programs for private companies, including SMEs, to invest in EE/CP projects. The aim is to reduce energy consumption by unit of output and reduce the use of inputs, leading to less waste and reductions in GHG emissions.

IFC’s experience in other markets such as Central Europe, Russia and China demonstrates that once a few strategic FIs enter the market and establish themselves as market leaders, other FIs will follow suit as they recognize the viability and value that sustainable energy financing products can bring to their business. Working through FIs is expected to create the scale required to have a market-wide impact, as FIs’ outreach and access to end-users through programmatic portfolios of EE/CP investments in their client networks have proven to be more effective and more sustainable than attempts with only few targeted individual project investments.

Banks have shown a high degree of interest in participating in EE/CP lending as long as certain risks and costs can be addressed. It is expected that, deployed effectively, CTF resources can be heavily leveraged as most FIs in Colombia have a high degree of liquidity. This lending has not developed much to date because they lack experience in EE/CP lending and are uncertain about the potential return of EE/CP investments. RSFs from IFC, IDB and CTF under the structure presented here can directly address the FIs’ heightened risk perception and catalyze the flow of funds into this segment. Institutional capacity-building will be crucial in helping them structure financing and properly assess risks in this new segment, and will ensure that the FIs continue this line of business after the CTF funding is exhausted. Catalyzing investment in this manner can foster the development of a robust and financially sustainable EE/CP lending market, as other FIs follow on the experiences of the early entrants and enter the market.

The Colombian financial sector is led by five large private banks. The proposed Program is expected to work with three to four of the top banks to enable them to develop new lines of business for financing EE/CP investments. Each of the participating banks would benefit from a combination of AS and financing products to address the knowledge barriers that have prevented them from independently developing such financial products in the past. By targeting the leaders in the banking sector, the Program will not only create competition among banks to provide the financing products, but could reach a significant percentage of the industrial and commercial companies able to benefit from financing for EE/CP.

CTF support to FIs is expected to have a significant impact on the market in Colombia. It will demonstrate that the financial sector can be a crucial player in energy efficiency, and that with proper incentives private sector financing is an effective means to scale-up climate mitigation activities. It is worth noting that there are benefits that can come from the availability of financing for EE technologies such as the development of new services including energy audit services, energy management training, project development, equipment supplies, ESCO services, etc.

The Program’s AS component will complement the investment component by supporting market development activities (promoting knowledge and technical expertise on the end user side), and capacity-building for participating FIs. It will also make certain that the lessons learned and experiences related to sustainable energy financing will be shared across the financial sector in Colombia, as well as with other countries in Latin America and the Caribbean.

### **The Investment Component**

Under the investment component of the Program, IFC, IDB and CTF will support important private commercial banks in Colombia to stimulate and help scale up their EE/CP lending activity to local SMEs and corporate clients.

Although the investment products IFC and IDB will offer to FIs may include US dollar-denominated loans, it is expected that the FIs will require mainly risk-sharing facilities. This is due to the relatively high liquidity of the banking sector. As such, FIs are expected to focus on risk sharing that are capable of mobilizing the Colombian banking sector's existing liquidity towards sustainable finance.

The proposed investment instruments such as risk-sharing facilities will not only help the banks to mobilize their existing resources, but they will also help address one of the critical market barriers in Colombia – the perceived high risks of EE/CP finance and, in general, the high upfront risks of entering into a new business for the banks. The terms of the risk-sharing facilities will be designed in a way to adequately address these barriers and to catalyze the uptake and scale-up of EE investments. As this is a collaborative effort between IFC and IDB, IFC and IDB would have the option to jointly co-finance each project with a FI. As such, IFC and IDB will coordinate closely to ensure consistency in the structure and terms of the financing. The participating FIs themselves will of course also need to be comfortable with this co-financing arrangement.

IFC has had significant experience with RSFs in Eastern Europe and particularly in China, where the model has been proven to be very effective in mobilizing existing financial sector liquidity while at the same time providing the extra risk cushion to FIs that allows them to enter into a new business line. In these other experiences of IFC, the availability of donor funding willing to cover a first loss position has proven to have a catalytic role in engaging local banks and helping them to set up large-scale financing facilities for EE.

Larger and more complex industrial EE/CP projects tend to require longer tenors than most banks are willing to provide at this point in time in Colombia. By sharing the long term risk of projects with the banks, the Program will give them the comfort needed to extend their financing to clients. This is expected to help open up the market for new clients for EE. In these cases, direct lending facilities will be more appropriate than RSFs. As such, the Program's financing will be structured to incentivize FIs to develop a SE line by addressing their perceived risks and the costs associated with the learning curve and establishment of a SE business. The Program proposes to utilize two different potential structures to incentive financial intermediaries, depending on the FI's own risk profile and strategy.

The exact interest rate, tenor and amount of the CTF component of any loan will be determined on a case by case basis, based on the specific needs of each FI (e.g., a loan with longer maturities will receive higher interest rate than that of shorter maturity, etc.).

Clients will not be offered both a concessional interest rate and a convertible loan/grant.

The specific details of the structured finance instruments to be offered to participating FIs will be developed to respond to their specific needs and appraisal of the proposed project opportunity. Note that final agreement to provide CTF funding to any FI would be subject to a full due diligence and internal approval process at IFC and IDB, per the CTF private sector guidelines. All projects financed under the Program will be required to meet the MDB environmental, social, governance and other compliance requirements as well as all Colombian regulatory requirements. The selection of partner FIs will be based on the FIs being financially solvent and eligible for MDB financing. The MDB team will also ascertain whether the FI has the ability to support this new business line on a sustainable level going forward and have sufficient internal resources to work with the MDB team to design an investment and advisory services program. The MDB teams will conduct sponsor reviews to make sure that the selected FIs are institutions with acceptable reputation and risk profiles. The MDBs will also review the FIs portfolio and growth strategy to decide if EE finance would fit with their client base. Finally, the selection process will assess the FI's level of commitment to enter into this new sector of EE financing and resulting selected FIs will have demonstrated ability and willingness to promote this product across the Colombia market.

### **The Advisory Services Component**

The Program will include an AS component which will be designed based on the MDBs previous experience in other markets, and activities will be allocated between the MDBs. The advisory component of the Program will be structured to support both the FIs and the end-users, including EE/CP equipment vendors and ESCOs (or energy

services companies). This feature will aim to create a strong correlation between the advisory work and the financing and implementation of investment projects. At the same time the advisory component will contribute the long-term impact of market transformation by strengthening the local capacity of technical service providers, raise market awareness and increase know-how.

The objective of the AS component is to support the implementation and scale-up of EE/CP projects on several levels by:

1. Providing capacity-building for FIs so they can become active in sustainable energy financing. This will comprise training on EE/CP finance techniques, credit analysis, marketing, support with financial product development, and portfolio reporting;
2. Conducting a study on the EE market in Colombia, including sector studies that will help FIs to identify relevant target segments for them, and guide them in marketing efforts to relevant end-users;
3. Supporting end-users to undertake energy audits, technical feasibility studies, and evaluate different technical alternatives for efficiency improvements;
4. Supporting auditors to perform audits, both through financial assistance, and providing training and technical support for the audit process;
5. Knowledge management: supporting awareness-raising, dissemination of information and lessons learned through conferences and workshops, as well as media promotional campaigns; and
6. Building capacity for local technical service providers including ESCOs, and training institutions that serve SMEs.

This Program will be coordinated with UPME, as the lead EE/CP entity from the public sector, which has support from IBRD and UNDP (with use of GEF resources) to build capacity for policy makers, and establish labeling and standards for industrial equipment. In addition, the Program will coordinate with and scale up existing programs and groundwork completed for the Inter-American Investment Corporation's (IDB Group) GreenPYME Program<sup>11</sup> and the Bogota Chamber of Commerce (BCC) project that has support from the MIF (IDB). A possible area of overlap for this IFC/CTF Program and the BCC/MIF project is related to ESCO development support. This IFC/CTF program would be carried out to complement or expand on the activities undertaken in these programs. This scaling up is expected to reduce the groundwork and preparation required for several AS and KM components.

### ***Market Assessments***

One of the first steps of the AS will be an assessment of the EE market in Colombia. This will include an overall assessment of the EE market in Colombia: institutions, investment successes/failures, contracting structures, barriers, lessons learned, etc. It will also include targeted studies that would focus on energy intensive sectors. These studies would be made available to the public, including to the banks. They will help FIs to identify relevant target segments for them, and guide them in marketing efforts to relevant end-users

### ***FI Capacity Building***

For participating FIs, the AS program will offer a range of activities related to capacity building, starting with portfolio review and strategy setting with FIs' senior management teams, and then moving to specific training for FI staff from various areas (product development, marketing, client relationship, and credit appraisal). The training package for bankers will include an introduction to EE/CP technologies, finance needs and end-user savings benefits and will be layered in order to address several target groups, starting with management and credit risk analyst/managers, and ending with loan officers/ client relationship officers. Special features of EE/CP transaction structuring, including ESCO lending and project finance techniques relevant for EE/CP projects, will also be

<sup>11</sup> GREENPYME Program of the Inter-American Investment Corporation (IIC) promotes renewable energy, clean technology, and energy efficiency in SMEs in the main production and service sectors in Latin America and the Caribbean. The program seeks to provide SMEs with know-how, tools, and technical support for implementing energy efficiency measures and clean technologies.

included. These techniques will vary and must be applied to specific end-user sectors. Hands on coaching and support will be provided during the EE/CP project evaluation process. Training will also focus on marketing EE/CP finance services and one-on-one consultations with each FI to establish an EE/CP finance unit within an appropriate department of the FI. Part of the effort to encourage FIs to internally structure an EE/CP-related lending unit can also be an incentive scheme for loan officers/internal staff. This would encourage faster uptake of the Program through the proactive development of EE/CP deals by relationship officers and other FI employees.

Each FI program must ensure that, within the institution, EE/CP finance knowledge is broadly understood. This knowledge must be developed among FI staff involved in finance, origination, credit and structuring decisions, and then transmitted within the institution's branch network. Because EE/CP finance can address a range of end-user sectors and project types, it is important to take a "financial product" approach to development of various financing structures. Selection of the financial products to be offered will be based on the particular FI's appetite for financing, their capabilities and market opportunities. The AS program will assist each FI to develop and adapt EE/CP finance products to target sectors.

Each participating FI would benefit from a tailored AS project that considers their needs and interest. Participating FIs would enter into a formal agreement with the MDB providing this service for this support and would be expected to co-finance the costs. The investment projects in FIs are expected to be co-financed between IFC and IDB (see Investment Component above) and IFC is expected to normally provide the FI AS.

In any case, all financial institutions participating in the Program will receive similar quality of advisory services support, depending on the AS plan tailored for the individual FI. Participating financial institutions are expected to co-finance any such AS project, covering at least 50% of the costs.

Despite the fact that AS will be provided directly to participating FIs, there is also expected to be a public good aspect of the capacity-building exercise. Best practices from development of specialized lines of business will be summarized and will be presented to other market participants to reach wider potential of EE/CP finance providers. A set of best practices guides in EE/CP finance with case studies representing various sector clients would be developed and publicized to make sure that the knowledge is transferred broadly in the market.

IFC will also work to build capacity for local training institutions, so that when the IFC/CTF Program phases out, local capacity (training materials, trainer network) is strong enough to continue training services to other banks that want to enter EE/CP finance market or for existing banks that want to continue to strengthen/ expand their EE/CP finance business.

### ***Regulatory Analysis***

In conjunction with the Advisory Services Investment Climate group, the Program will carry out an analysis of possible regulatory reforms to improve the market conditions related to sustainable energy finance in Colombia. For this, the following activities are expected: (i) research and analysis of existing regulatory framework related to sustainable energy finance; (ii) identification of possible regulatory reforms to improve opportunities for sustainable energy; and (iii) presentation of proposed reforms to the relevant authorities.

### ***Market Awareness Raising and Knowledge Management***

Targeted market awareness-raising activities will be organized in order to build a sufficient pipeline for potential investments as well as to develop an understanding of the EE/CP market in Colombia. These activities will include conferences and seminars for commercial entities (both end-representatives of users and energy service professionals), business and industry association specialists. The Program will support direct marketing activities, working with business and industrial associations and other professional bodies. Joint promotional campaigns, technology fairs and information events will be organized to bring both FIs' representatives and technical service providers/ESCOs/equipment suppliers in one common forum in order to provide both technology information and financing options to potential end-users/borrowers. These may include technical seminars to introduce new technologies available in the market to end-users and service providers.

The Program will include an evaluation component that ensures proper documentation of lessons learned by the FIs and technical service providers, analyzes this information and draws useful and relevant conclusions, and disseminates this information in a readily accessible report format. This analysis will be made available to FIs, technical service providers, end-users, and regulatory authorities, in order to form a feedback loop of information, and support learning and improvement of investment conditions in the market.

#### ***End-user support/Technical service providers support***

The AS program will include specific initiatives targeting corporate and other SMEs as end-users and SMEs as service providers to the end-user groups. End-users need financing and technical support to make their investments happen. They also need training to set up effective energy management systems, and learn how to monitor their energy consumption and efficiency over the time. The Program will work with selected technical training firms to roll out various training products to SMEs, for instance EE/CP for technicians, EE/CP for executives, EE/CP for energy managers at factories. Advice and support will be provided to these technical training firms so that they can standardize/professionalize their products and services and meet end-users' specific demand for technical training.

The Program will also include an energy audit component. Performing an energy audit for a prospective EE/CP customer is the beginning of the project sales cycle. By supporting energy audits, the Program will assist in building a pipeline of projects for financing. Training and technical support will be provided to auditors, and financial assistance will be provided for the audits, on a cost-sharing basis with end-users and FIs.

In addition to providing technical support for audits specifically, the Program will provide more general formation to technical service providers, on an investment/business level, helping them to source, develop present and monitor bankable deals. Building this capacity is a key part of ensuring a smooth pipeline and ultimate disbursement of the Program funds.

#### ***Market Transformation***

Other development financial institutions have provided support related to sustainable energy market development in Colombia. As mentioned previously, the IDB Group has provided support as part of its GreenPYME program that helps raise awareness among companies as to the benefits of energy efficiency (see footnote number 11). SECO, the Swiss development agency, has provided support to "green credit lines" in the country that have been helpful in generating interest among FIs and companies in sustainable energy finance. These green credit lines are structured to provide a financial incentive for companies that are able to achieve certain pre-established performance-based results. The green credit lines still exist, though they are undergoing certain changes, as it was determined that they were too restrictive in terms of eligibility. As part of SECO's support, IFC was tasked with carrying out awareness-raising and training for FIs interested in sustainability finance. These efforts have helped to lay the foundation for this broader, more comprehensive CTF program.

This Program is a long-term effort to increase awareness, support behavior change, build the EE/CP financing market, support some early entrants among FIs into the EE/CP financing business, and build the momentum for it to continue to grow. The combined IFC/CTF Program is expected to result in a transformed financial sector which views EE/CP financing as a standard business practice, as well as transformed industrial and commercial enterprises, which view energy efficient technologies as standard ways of operating a business and competing in the market. This will help to steer Colombia's economic development into a low-carbon path with more sustainable use and management of resources.

### **FIT WITH INVESTMENT CRITERIA**

#### ***i) Potential GHG Emissions Savings:***

The Program is structured as an intermediary operation. As such, the precise composition of the FI's loan portfolio cannot be predetermined with absolute certainty. Therefore, it is necessary to provide a broad estimate of the emissions reductions that are likely to result from the Program.

Program's direct emission savings would reach approximately 20.5 – 22.1 million t CO<sub>2</sub>e by the end of the Program (15 years life of the technology financed) in the base scenario or approximately 1.4 – 1.5 million t CO<sub>2</sub>e/year. This figure includes the investment required for these measures as well as corresponding programmatic costs.

**ii) Cost-Effectiveness:**

The use of approximately US\$17.5 million from CTF (including both investment and AS grants) would result in an estimated direct savings of 1.4 – 1.5 million t CO<sub>2</sub>e/year.

With the projected 15-year Program lifetime, cost effectiveness of CTF resources would be US\$0.77 – US\$0.83 /t CO<sub>2</sub>e. Given the long-term effect of market development work, and capacity building/enhancement, it is expected that the participating FIs will continue their EE/CP lending business, and that other banks will enter the market. So over time, the cost effectiveness of the CTF program will continue to improve.

**iii) Demonstration Potential at Scale:**

Since the benefits of EE/CP technologies have not yet been sufficiently demonstrated in this market, and given that the technical capacity needed is currently inadequate, scaled investment in an EE/CP market under current conditions will not take place on its own. Previous attempts to solve only a single barrier at a time have proven unsuccessful. A programmatic approach that addresses the different barriers is needed for market transformation to occur. Launching such a systematic and comprehensive effort requires both financial resources and know-how.

CTF financing is necessary to address capacity, cost and risk barriers among FIs, increase end-user demand, and build local technical expertise among key stakeholders in order to scale up EE investments in a systematic and sustainable way in Colombia. The use of CTF funds for technical assistance and concessionary finance provides the necessary catalyst to engage the stakeholders to implement EE/CP investments. Thus CTF resources are expected to provide the necessary impetus and also allow for the necessary coordination of other initiatives and efforts in the market.

**iv) Development Impact:**

The Program is expected to result in a series of environmental and economic benefits from EE/CP project investments and from the broader development of a sustainable energy service industry. Specifically, the Program is to: (i) build capacity in the local banking sector to finance EE/CP projects; (ii) support the emergence of energy service companies; (iii) finance EE/CP investment projects across multiple sectors; (iv) improve the competitiveness of the Colombian economy; and (v) help reduce emissions of GHG and other pollutants.

**Access to Finance:** Long-term funding will be provided to FIs through the Program to enable them to on-lend to companies (including SMEs) with longer tenors, a key hurdle to allow companies to undertake the necessary investments in sustainable energy.

**Improved Competitiveness of the Sub-borrowers:** The implementation of EE/CP projects by the borrowers/end-users will increase long-term sustainability of their operations, improve their efficiency and overall competitiveness, and provide them with economic benefits over the long-run.

**Job Creation:** The development of an EE market is expected to lead to job creation. As an example, efficiency measures in the building sector include green buildings and retrofitting as well as improving the efficiency of individual building components including: water heaters, cooking equipment, domestic appliances, office equipment, electronic appliances, heating, ventilation and air conditioning systems, and lighting. Macroeconomic studies, most of which have occurred in the United States and European Union, show that these EE measures lead to an overall net increase in jobs.<sup>12</sup> These same opportunities for job creation can also lead to the creation of new enterprises such as energy service companies and technology vendors.

The MDBs will be monitoring the development impact of CTF funded projects following the CTF Results Framework.

#### ***v) Implementation Potential:***

As explained above, FIs are not yet involved in EE/CP programs. The IFC/IDB/CTF Program will be the first comprehensive program specifically targeting financial sector barriers, and focused on bringing FIs into the sustainable energy market. Discussions with potential FI partners in Colombia confirmed that they are interested in the new business line, although they have some reservations. With both investment and AS, the IFC/IDB/CTF Program is expected to help build a business model for these banks to enter the market and reach the momentum needed to carry on the EE/CP financing business on their own after the Program ends.

By offering tailor-made financial instruments and credit enhancement to FIs, plus support for capacity-building, the Program is expected to establish a track-record demonstrating the viability of commercial financing for sustainable energy projects and contributing to the acceleration of the development of the market.

Other donors are providing support to build technical capacity for auditors and consultants. As an example, MIF/IDB is supporting a project with the Bogota Chamber of Commerce to train technical experts on EE, system optimization and cleaner production, and assistance to potential ESCOs. The IFC/IDB CTF advisory component will complement these efforts to achieve market transformation at scale.

The Program will coordinate closely with these other domestic programs and relevant government entities (UPME, Ministry of Environment) during the implementation of this proposed Program.

#### ***vi) Additional Costs & Risk Premium:***

The interest rate, tenor and amount of the CTF funding to be provided under the Program will reflect the reality of the market. CTF funding will seek to overcome barriers to market transformation for the Program.

#### ***vii) Financial Sustainability***

<sup>12</sup> UNEP/ILO/IOE/ITUC. 2008. *Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World*.

There is understandable level of reservation among FIs to enter this space as they are concerned about the start-up costs and associated risks of entering a completely new business segments such as EE/CP project financing. Once the initial partner FIs overcome start-up barriers, develop their internal capacity, and see firsthand that sustainable energy finance can be a profitable commercial business, they are expected to continue the line of business without the need for further financial support.

The first mover FIs included in this Program will also serve as role models for other FIs. IFC's experience in Eastern Europe and China shows that once it is demonstrated that EE/CP projects can be additional sources of business income for FIs, other banks will follow suit using their own funds to develop the new products. It should be noted as well that the barriers for new entrants will be significantly reduced as much of the learning from the initial banks will be captured and shared with new market entrants through the Program's knowledge management component (especially the technical guides for bankers on popular EE/CP technologies in various sectors, and public training program for banks interested in developing this new business).

#### **viii) Effective Utilization of Concessional Finance**

The perceived high risks of EE/CP finance and the lack of internal capacity to manage financing programs for sustainability are currently key barriers that block FIs from developing dedicated financial products for sustainable energy.

FIs that receive funds from the Program must fully comply with IFC and IDB standard financial covenants and reporting requirements, in addition to other covenants and requirements that would be determined during the due diligence performed on these institutions.

This Program proposal represents the first comprehensive initiative on in Colombia to use financing together with AS as a means to help develop private financing for EE by supporting FIs.

#### **ix) Mitigation of Market Distortions**

The proposed Program is not expected to lead to any market distortions, since instead of displacing private capital, the Program will leverage and mobilize the financial sector's existing liquidity through innovative risk sharing schemes focused on this new business segment.

#### **x) Risks**

**Macroeconomic Risk:** Economic indicators for first quarter 2010 hint that the economy in Colombia continued on the path of recovery, which had strengthened in the fourth quarter of 2009. Despite high unemployment, consumers appear more optimistic and are increasing spending, contributing to the economic recovery. A recovery in domestic demand and bank lending means the recovery will continue in 2010, though growth will remain relatively modest. The continued economic recovery is crucial so that FIs remain interested in new areas of financing such as EE/CP.

*Mitigant:* To a certain extent this risk is mitigated by the government's demonstration of fiscal responsibility. Financial markets were reassured in April 2010 by the completion of the government's external financing program to cover this year's fiscal deficit, a new domestic-debt management transaction, and a request to the IMF to renew its Flexible Credit Line (FCL).

**Market Awareness:** The awareness-raising activities related to EE/CP remain limited in terms of outreach and effectiveness, especially since companies are then faced with barriers to finance, stifling further interest. Companies, especially SMEs have limited understanding of EE/CP investment opportunities, and many think environmental issues are not a priority for them. Moreover, the dearth of information on technology solutions in the market limits understanding for possible options for improvement.

*Mitigant:* The Program will provide basic market awareness activities, and will work with FIs and end-users to help

them understand the cost-savings opportunities as a result of EE/CP investments. Technical support for energy audits, feasibility studies, technology verification, and marketing activities to be undertaken together with FIs will aim to motivate companies to engage in EE/CP.

**Limited implementation capacity by FIs:** Sustainable energy is a new market area in Colombia and the local private FIs are reluctant to take a leadership role in this new business segment.

*Mitigant:* The funding from CTF is expected to provide the needed incentives to motivate the private FIs to enter into this untested market. The AS will not only help these FIs to get into the market, but will also build momentum for them to continue growing their new portfolio as part of their mainstream business.