

Technical Cooperation Document

I. Basic Information for the Technical Cooperation

▪ Country/Region:	Paraguay
▪ TC Name:	Support to structure and implement an energy efficiency financing strategy for SMEs with AFD.
▪ TC Number:	PR-T1249
▪ Team Leader/Members	Maria Netto (IFD/CMF); Manuel Fernandini (CMF/CPR); Omar Villacorta, Gloria Lugo, Margarita Cabrera, Alex Vasa, Johan Arroyo and Annabella Gaggero (IFD/CMF); Filippo Berardi and Gloria Visconti (CSD/CCS); Emilio Sawada and Roberto Aiello (INE/ENE); Alonso J. Chaverri-Suarez (LEG); Daniel Hincapie Salazar (ORP); Fernando Glasman y Jorge Luis Gonzalez (FMP/CPR).
▪ Indicate if: Operational Support, Client Support, or Research & Dissemination	Operational Support
▪ Associated Loan/Guarantee Name:	PR-L1146: Promoting private sector investments in energy efficiency in the industrial sector in Paraguay
▪ Date of TC Abstract authorization:	N/A
▪ Beneficiary (recipient countries or entities of technical assistance):	Agencia Financiera de Desarrollo - AFD
▪ Executing agency and contact name:	Inter-American Development Bank, through its Connectivity, Markets and Finance Division, Institutions for Development Sector (IFD/CMF).
▪ Donors providing funding:	Green Climate Fund (GRN) ¹
▪ IDB funding requested:	US\$2,300,000 from GRN
▪ Local counterpart funding (if any):	US\$460,000 (in-kind AFD)
▪ Disbursement period:	48 months for execution and 36 months of disbursement
▪ Required start date:	April 1 st 2018
▪ Types of consultants:	Firms and individuals
▪ Prepared by the Unit:	IFD/CMF
▪ Unit of Disbursement Responsibility:	IFD/CMF
▪ Included in Country Strategy:	No
▪ TC included in CPD:	No
▪ Alignment to the Update to Institutional Strategy 2010-2020:	The proposed operation is aligned with the challenge of productivity and innovation, and with the cross cutting theme of climate change.

¹ The Green Climate Fund (GRN) is a UNFCCC's financial mechanism that provides funding to promote mitigation and adaptation to climate change. The IDB is an entity accredited by the GRN to manage these resources. The framework for this relationship is established in an Accreditation Master Agreement (AMA) approved by the IDB Board on August 29, 2017 (GN-2895, Resolution DE-31/17). In addition, a Funded Activity Agreement (FAA) to be agreed between the IDB and GRN will establish terms and conditions specific to this technical cooperation and the associated loan shall be signed prior to the signing of the associated loan contract (PR-L1146). Formal approval by the GRN is pending and expected to take place at the nineteenth meeting of the GRN Board, planned currently for February/March 2018. The use of funds for this technical cooperation operation is subject to the effectiveness of the AMA, the approval of the GRN Board of the Funding Proposal that appropriates GRN resources for the activities contemplated in this TC, and the FAA to be signed between the GRN and the Bank, pursuant to Clause 6.02 of the AMA.

II. Description of the Associated Loan

- 2.1 This technical cooperation (TC) is associated to the Global Credit Program PR-L1146, “Promoting private sector investments in energy efficiency in the industrial sector in Paraguay”². The objective of the program is to promote energy efficiency (EE) in the industrial small and medium enterprise (SME) sector in Paraguay, by providing medium and long-term financing for EE investment projects.³ Successful implementation of those projects will contribute to reduce GHG emissions, supporting the achievement of the country’s climate change goals.

III. Objectives and justification of the TC

- 3.1 The objective of this technical cooperation is to support the preparation and implementation of the program PR-L1146.
- 3.2 A study undertaken with IDB support in collaboration with the *Agencia Financiera de Desarrollo* (AFD), Paraguay’s development bank,⁴ shows that Paraguay has a large potential to promote EE measures within its industrial SME sector. The potential energy savings that can be achieved through actions in this sector could reach at least 10% of net energy SME industrial demand in Paraguay.⁵ In particular, EE measures by industrial SMEs could result in a reduction on the use or displacement of firewood as the second-largest fuel source for the industrial sector⁶, increasing productivity and contributing to reductions in greenhouse gas (GHG) emissions.
- 3.3 The study also has shown that despite SME’s interest in improving their businesses with more energy-efficient technologies, EE investments in Paraguay are hindered by the lack of medium and long-term finance and perceived risks by SMEs and local financial institutions (LFIs) regarding these investments. In particular: (i) from the SMEs perspective, perceived risks associated with EE technologies are related to their higher up-front costs, lack of information or trust on the performance of new equipment, and availability of reliable service for its installation and maintenance by local energy and technology service providers; (ii) from the perspective of the LFIs, their traditional “asset-based” lending approach limits the firms’ borrowing capacity; LFIs give little or no collateral value to EE equipment and typically do not recognize or are not willing to rely upon the project’s positive cash flows to determine a firm’s repayment or borrowing capacity. Furthermore, even if they would accept to consider such cash flows, the inability to validate the risks involved in generating them restrains LFIs from considering EE projects as bankable business opportunities.
- 3.4 This TC addresses the aforementioned barriers to SME industry investments in EE, by complementing the provision of financial instruments through the program with a

² This TC is part of a comprehensive funding proposal for the Program presented to the GRN (see footnote #1), which is comprised of a of US\$20 million in reimbursable resources from the GRN, plus US\$20 million from AFD (local co-financing) and two TCs including: (i) this TC to support AFD to adequately engage LFIs, SMEs and technology providers in the Program; and (ii) another TC to support the Vice Ministry of Mining and Energy to promote execution of its policies to reduce energy use in private sector, in particular use of biomass.

³ Program activities include financing mechanisms, as well as non-financial instruments that aim to improve local technical capacity and knowledge on EE investments by LFIs and SMEs.

⁴ [Carlino, H. 2015. Estudio de mercado que proporciona insumos para la estructuración de instrumentos financieros para proyectos con beneficios ambientales para la Agencia Financiera de Desarrollo de Paraguay.](#)

⁵ As part of the project design, this will focus on uses and technologies that are commonly used in specific sub-sectors identified, through which greater energy savings could be attained in Paraguay.

⁶ Firewood and biomass waste source 83% of the energy consumed by the country’s industrial sector (for power, direct heat and steam) and is often used very inefficiently.

series of non-financial instruments aimed at distributing and managing risks, to mobilize demand and engage SMEs and LFIs in EE investments. The activities proposed in each of the components of this TC presented below are built based on similar initiatives developed by the IDB with national development banks in the region, in particular, the Energy Savings Insurance (ESI) model that is currently being piloted in several countries in LAC, including Brazil, Colombia, El Salvador, Nicaragua, Mexico and Peru⁷.

- 3.5 This TC is aligned with the priorities relating to energy, productive development and financial sector of the IDB Country Strategy with Paraguay (2014-2018) (GN-2769). The TC is also consistent with the Institutional Strategy Update 2010-2020 (AB-3008), and is aligned with the challenge of productivity and innovation, and with the cross cutting theme of climate change. As well, this operation is consistent with Bank's priorities as set out in its Integrated Strategy for Climate Change Adaptation and Mitigation, and Sustainable and Renewable Energy (GN-2609-1) and is aligned with the Support to SMEs and Financial Access/Supervision Sector Framework Document (GN-2768-7), the Sustainable Infrastructure for Competitiveness and Inclusive Growth Strategy (GN-2710-5) and the Sector Strategy Institutions for Growth and Social Welfare (document GN-2587-2). Further, it is aligned with Paraguay's National Development Plan 2030⁸, National Energy Policy, National Climate Change Plan, National Climate Change Policy and the Intended National Determined Contribution⁹, where improvement of EE is one of the strategic areas identified to promote increased competitiveness and productivity and GHG emissions reductions. According to the [joint MDB approach on climate finance tracking](#), 100% of total IDB funding for this project result in climate change mitigation activities. This contributes to the IDBG's climate finance goal of 30% of combined IDB and IIC operational approvals by year's end 2020. Finally, the TC is also aligned with the GRN priorities relating to reducing GHG emissions from energy access and power generation and from buildings, industries and appliances.
- 3.6 Activities of this TC will be complemented by another TC focused to support the Vice Ministry of Mining and Energy of Paraguay in promoting a regulatory enabling environment for private investments in EE, in particular to enhance the execution of its policies to reduce energy use and the use of biomass (see footnote #2).

IV. Description of activities/components and budget

- 4.1 This TC is intended to support the preparation and implementation of the program PR-L1146. In particular, this TC seeks to **improve access to financial and non-financial instruments and operational mechanisms to increase EE investments by SMEs**. Under this TC, GRN grant resources will help structure the demand for EE financing

⁷ The activities of this TC capture lessons learned and methodologies of the ESI model, which IFD/CMF, with support from the Clean Technology Fund, Nordic Development Fund and Danish government, has been implementing with Bancoldex in Colombia (CO-L1124, CO-T1328, CO-T1332), Bancomext and FIRA in Mexico (ME-L1145 and ME-T1265, ME-T1266), Banco de Produccion in Nicaragua (NI-T1234), BANDES, BRDE and Goias Fomento in Brazil, Cofide in Peru and Bandesal in El Salvador (RG-X1258) – see: <https://www.greenfinancelac.org/esi/>.

⁸ <http://www.stp.gov.py/pnd/wp-content/uploads/2014/12/pnd2030.pdf>

⁹ The Intended Nationally Determined Contributions (INDCs) are public outlines of climate actions countries intend to take under the new international agreement adopted in December 2015 at the Conference of the Parties (COP21) in Paris. Energy efficiency is prioritized in Paraguay's INDC, which commits GHG emission reductions of at least 20% compared to the business as usual scenario by 2030. United Nations Framework Convention on Climate Change (UNFCCC), 2016.

by supporting the development of financial and non-financial instruments, including: (i) standardized market instruments such as performance contracts, monitoring, reporting and verification methodologies, independent validation of EE measures and technology providers and insurance/surety products; (ii) institutional capacity and knowledge sharing mechanisms; and (iii) support for the monitoring and evaluation of program PR-L1146.

- 4.2 The financial and non-financial instruments developed will establish rules for all relevant market players, hence building trust among them. This will be achieved through three main sets of components. The first is the design of financial and non-financial instruments as such, the second is the capacity building of interested parties on these instruments and knowledge dissemination of the lessons learned from the program, and the third implements monitoring mechanisms for aspects relevant to the quality of implementation of the program, particularly firewood and electricity prices.
- 4.3 **Component 1: Design of financial and non-financial instruments.** This activity will support the development of a ready-to-use strategy that blends financial and non-financial instruments to promote EE investment by SMEs. The development of financial and non-financial instruments includes a standard performance contract, an insurance policy to cover expected energy savings and validation methodologies to account for energy savings. This activity will include, among others: (i) development of a standard performance contract; (ii) development of insurance policy in collaboration with local insurance companies; (iii) development of processes and methodologies to account for technology/project energy savings and to validate their adequacy to the program criteria; (iv) development of a business plan for project promotion and execution; (v) hiring of an independent validator to verify quality and compliance with program criteria of proposed energy efficiency measures and of energy service and technical providers; (vi) develop a business plan and model for the establishment at AFD of a business unit dedicated to EE project financing and pipeline development; (vii) support AFD with the establishment of an electronic registry system for monitoring and evaluation of projects and program's results.
- 4.4 For this activity, it is expected that 11 consultancies (national or international) (with at least 5 consultants) will be hired to design financial and non-financial mechanisms and the overall strategy. The profile of these consultants will include both financial and technical abilities, so as to ensure quality in the design and development of all mechanisms based on specific knowledge in the field of energy (EE experts), as well as the essential financial elements involved (financial experts).
- 4.5 **Component 2: Strengthen the capacity of LFI, energy service and technical providers (ESTPs) and validators for EE project development.** This activity will aim to strengthen the capacities of energy service and technical providers to develop a new line of business, namely, the sale of guaranteed energy savings rather than merely the sale of equipment. Also, activities in this component are expected to support the development and dissemination of information on new risk mitigation products, such as the standard performance contract, insurance products and the monitoring, reporting and verification methodologies, among relevant stakeholders. As part of this activity, there will be training and dissemination of information to LFIs, energy service and technical providers and validators on project mechanisms and methodologies, as well as knowledge generated at the local and regional level. This activity will include: (i) training of AFD staff on program mechanisms and methodologies; (ii) training activities (workshops, seminars, etc.) for LFIs; (iii) training of technical validators; (iv) training of energy service and technical providers about

program mechanisms; (v) training of SMEs about program mechanisms; and (vi) overall knowledge dissemination.

- 4.6 For this activity, it is expected that 4 consultants (national or international) will be hired to conduct capacity building activities and program information dissemination. Similar to Component 1, the required profile of consultants for this activity will be both financial and technical (EE experts). A series of capacity building events will be undertaken for each of the stakeholders and market actors identified in Paraguay.
- 4.7 **Component 3: Implement monitoring mechanisms.** This component will support the design of the necessary templates as well as the development of a methodology to review projects, information systems where AFD can record activities undertaken for each sub-project, monitoring, safeguards requirements and program results. In addition, this component will generate a report of lessons learned, to be shared with the GRN, which can demonstrate the potential for replication and transformation that the strategy of the program can achieve. Finally, this component will support a mid-term evaluation and an impact evaluation of the program towards the end of the execution period (including IDB Monitoring and Evaluation reports; Project Monitoring Report-PMR and Project Completion Report-PCR).
- 4.8 In addition, as projects to be financed by program PR-L1146 are dependent on the price fluctuations of their energy sources, the monitoring component would also include monitoring of energy markets and fuel price. While prices of fuel wood are likely to increase, the interaction between the enforcement of the Zero Deforestation Law (2524/04) and the information provision about fuel wood price developments is important for private sector actors to take into account in their long-term investment decisions. To support tracking the fuel wood price and to strengthen the credit line to be established under PR-L1146, the following activities will be implemented: (i) development of a methodology for monitoring of fuel wood market developments; (ii) establishing and complementing existing inclusive roundtable discussions with local stakeholders from national authorities, the national electricity administration (ANDE), private sector actors and the relevant NGO community working on fuel wood markets and; (iii) awareness and socialization campaign to disseminate results to inform investment decisions.
- 4.9 In order to implement this component, the following consultancies would be hired: (i) one individual consultant to support the AFD with specific technical capabilities and local coordination; (ii) a consultant or firm to support the development of a registry of supported projects and overall workflow and repository of activities; and (iii) two consultants (individuals and/or firms) (EE experts) to support collection and assessment of information relating to market developments and fuel prices. The execution of this component will also include the cost of events (logistics, organization) required for dissemination, training, and consultation with relevant actors (such as local financial institutions, technical service providers and customers).
- 4.10 To ensure proper execution of the proposed program, the project team will organize meetings and conference calls, mid-term and a final review with AFD and the consultants for each of the phases of the design and implementation of the planned activities.

Indicative Results Matrix

Expected results	Unit	Baseline		Year 1-3		Expected completion date *	Data source
		Value	Year	Planned	Actual		
1.1. Development of a standard performance contract for risk sharing between SMEs and ESTP	#	0	2017	1		Q1 2019	IDB Systems
1.2. Development of insurance policy covering energy savings	#	0	2017	1		Q1 2019	IDB Systems
1.3. Develop methodologies accounting for technology / project level energy savings	#	0	2017	1		Q1 2019	IDB Systems
1.4. Development of a Business Plan for the Project promotion and execution	#	0	2017	1		Q1 2019	IDB Systems and AFD dedicated registry
1.5. Hiring and operationalization of validators	#	0	2017	1		Q1 2019	IDB Systems
1.6. Establishment at AFD of a business unit dedicated for EE financing and support for projects (Including Project and Pipeline Development resources)	#	0	2017	1		Q3 2019	IDB Systems and AFD dedicated registry
1.7. Establishment of electronic registry system for monitoring and evaluation of projects and program's results (including Gender studies in disaggregated data)	#	0	2017	1		Q3 2019	IDB Systems and AFD dedicated registry
2.1. Training of AFD staff (at least 20% women) on Project mechanisms and methodologies.	#	0	2017	15		Q1 2020	IDB Systems and AFD dedicated registry
2.2. Training activities (workshops, seminars, etc.) to inform and train five LFI and its staff on financing EE projects	#	0	2017	5		Q1 2020	IDB Systems and AFD dedicated registry
2.3. Two local technical validators (total of 6 staff) informed and trained (at least 20% women) about Project methodology.	#	0	2017	2		Q1 2020	IDB Systems and AFD dedicated registry
2.4. Training thirty (30) technology solution providers (at least 20% women) about Program mechanisms	#	0	2017	30		Q1 2020	IDB Systems and AFD dedicated registry
2.5. Training of SMEs on Program mechanisms	#	0	2017	160		Q1 2020	IDB Systems and AFD dedicated registry
2.6. Development of six (6) products/publications, knowledge	#	0	2017	6		Q4 2020	IDB Systems and AFD dedicated registry

Expected results	Unit	Baseline		Year 1-3		Expected completion date *	Data source
		Value	Year	Planned	Actual		
sharing events, country market reports published, and webinars							
3.1 Develop methodology for monitoring of fuel wood market developments and informing market actors	#	0	2017	1		Q3 2019	IDB Systems and AFD dedicated registry
3.2 Complement and develop inclusive dialogue round table discussions	#	0	2017	1		Q3 2019	IDB Systems and AFD dedicated registry
3.3 Capacity Building and Awareness Campaign to inform on financial, economic, and environmental risks of unsustainable fuel wood use for industry	#	0	2017	1		Q3 2019	IDB Systems and AFD dedicated registry

- 4.11 The total amount of this operation is US\$2,300,000 from GRN grant resources, which will be used to hire the services of experts to implement the components 1, 2 and 3 above, as well as to pay for logistics of consulting events and travel expenses related to consultants.

Indicative Budget (in US\$)

Activity/Component	Description	GRN	Counterpart Funding**	Total Funding
1. Develop financial and non-financial instruments, including standard performance contract, insurance policy covering energy savings and validation methodologies to account energy savings ¹⁰	Development of a standard performance contract for risk sharing between SMEs and ESTPs	60,600	12,120	72,720
	Development of insurance policy covering energy savings	55,600	11,120	66,720
	Develop methodologies accounting for technology / project level energy savings	347,900	69,580	417,480
	Development of a Business Plan for the Project promotion and execution	118,900	23,780	142,680
	Hiring and operationalization of validators	170,000	34,000	204,000
	Establishment at AFD of a business unit dedicated for EE financing	198,900	39,780	238,680
	support for projects (Including Project and Pipeline Development resources.)	500,000	100,000	600,000
	Establishment of electronic registry system for monitoring and evaluation of projects and program's results	89,000	17,800	106,800
2. Strengthen capacity of LFI, ESTPs and	Training of AFD staff on Project mechanisms and methodologies	69,600	13,920	83,520

Activity/Component	Description	GRN	Counterpart Funding**	Total Funding
validators for EE project development	Training activities (workshops, seminars, etc.) to inform and train five LFIs and its staff on financing EE projects	65,300	13,060	78,360
	Two local technical validators informed and trained about Project methodology.	16,300	3,260	19,560
	Training technology solution providers about Program mechanisms	38,300	7,660	45,960
	Training of SMEs on Program mechanisms	76,600	15,320	91,920
	Development of products/publications, knowledge sharing events, country market reports published, and webinars	193,000	38,600	231,600
3. Implement monitoring mechanisms	Develop methodology for monitoring the program results and of fuel wood market developments and informing market actors	80,000	16,000	96,000
	Complement and develop in inclusive dialogue round table discussions	80,000	16,000	96,000
	Capacity Building and Awareness Campaign to inform on financial, economic, and environmental risks of unsustainable fuel wood use for industry and collect lessons learned from the program.	140,000	28,000	168,000
Total		2,300,000	460,000	2,760,000

* * In-kind resources from AFD: Counterpart resources will consist on staff time, facilities for the development of planned promotional workshops and events, and office space for the consultants supporting the design of the different products envisioned under this TC.

V. Executing agency and execution structure

- 5.1 It is considered appropriate for the IDB to directly execute this TC since it involves a number of highly complex technical inputs, which would feed into specific program preparation and reporting requirements from both the IDB and the GRN. The beneficiary and the Bank agree that the execution by the IDB would enhance the quality control of the studies and methodologies to be developed and would improve the efficiency and velocity in the execution of the TC and the design of the operation.
- 5.2 The Bank, through IFD/CMF, will contract individual consultants, consulting firms and other services in accordance with current Bank procurement policies and procedures. Specifically, Section AM-650 of the Administrative Manual "Complementary Workforce" will be applied in the case of individual consultants, the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-1) and its Operational Guidelines (OP-1155-4) for hiring consulting services of intellectual nature and the Corporate Procurement Policy (GN-2303-20) for other services. A request from the beneficiary, for the IDB to execute this TC is enclosed (see [Annex I](#)).
- 5.3 The selection and hiring processes, as well as the products of the different consultancies, will be coordinated with the beneficiary. The Bank may license said

products to the beneficiary, local LFIs and other parties involved in the program, in accordance with the provisions of Section AM-331 of the Bank's Administrative Manual. The monitoring and execution of this TC will be carried out by the Bank in coordination with AFD and through: (i) technical-administrative coordination meetings; (ii) the joint review of the terms of reference for the hiring of the consultancy and; (iii) joint review and supervision of technical reports. The collaboration of AFD will be without limiting the Bank's autonomy to execute the technical cooperation, make decisions and approve the contracts and the products of the different consultancies.

VI. Major Issues

- 6.1 In view of the high technical level of the proposed TC, there is a risk of not obtaining good quality results if appropriate supervision of the work of the consultants is not given. Therefore, the proposal considers ongoing monitoring activities and overall evaluation of the program. Peer reviewers to analyze the products produced may also be required.
- 6.2 Since the FAA between the IDB and the GRN secretariat will have to be negotiated in parallel with the processing of this TC, a delay in the FAA negotiations could result in a delay in the processing of the TC, since some of the FAA conditions could apply to its design and/or agreement with the beneficiary.

VII. Exceptions to Bank policy

- 7.1 No exceptions to Bank policy are envisioned.

VIII. Environmental and social strategy

- 8.1 Pursuant to filter environmental and social safeguards, the proposed TC was classified as Category C. No potential negative environmental or social impacts were identified and therefore no mitigation strategy is needed. See [Safeguard Policy Filter Report](#) and [Safeguard Screening Form](#).

Required Annexes

- Annex I: [Letter of Request and Letter of GRN Designated National Authority of Paraguay](#)
- Annex II: [Results Matrix](#)
- Annex III: [Terms of Reference](#)
- Annex IV: [Procurement Plan](#)