

## TC Document

### I. Basic Information

▪ Country/Region:	Regional
▪ TC Name:	Community Light Centers
▪ TC Number:	RG-T2502
▪ Team Leader/Members:	Sylvia Larrea (INE/ENE), Project Team Leader; Arturo Alarcon (ENE/CBO); Enrique Rodriguez (ENE/CPE); Emilio Sawada (ENE/CUR); Joel Hernández (INE/ENE); Haydemar Cova (INE/ENE); Claudia Piras (SCL/GDI); Cesar Leyva (CSC/CBR); Heleno Gouvea (OPR/ORP); Ramiro Lopez Ghio (FMM/CCO); Fabian Koss (EXR/CSO); Gerardo Martinez (EXR/CSO); Javier Jimenez (LEG/SGO); Rene Herrera (VPC/FMP).
▪ Taxonomy:	Client Support
▪ If Operational Support TC, give number and name of Operation Supported by the TC:	N/A
▪ Date of TC Abstract authorization:	September, 2014
▪ Beneficiary (countries or entities which are the recipient of the technical assistance):	Regional
▪ Executing Agency:	Inter-American Development Bank (IDB)
▪ Donors providing funding:	Sustainable Energy and Climate Change Initiative (SECCI)
▪ IDB Funding Requested:	US\$374,000
▪ Other co-financing:	US\$440,500 (Philips in-kind contribution)
▪ Local Contribution:	US\$5,000 (in-kind)
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	February, 2015
▪ Types of consultants (firm or individual consultants):	Firms and individual consultants
▪ Prepared by Unit:	Energy Division (INE/ENE)
▪ Unit of Disbursement Responsibility:	Energy Division (INE/ENE)
▪ TC Included in Country Strategy (y/n):	No
▪ TC included in CPD (y/n):	No
▪ GCI-9 Sector Priority:	(i) Social policy for equity and productivity; (ii) Infrastructure for competitiveness and social welfare; (iii) Institutions for growth and social welfare; and (iv) Environmental protection, response to climate change and food security.

## II. Objectives and Justification

- 2.1 **Objective:** The general objective of this technical cooperation (TC) is to promote the use of sustainable energy sources in low-income communities creating a family-friendly focal point for the community, with an important positive impact in social inclusion, public safety and the environment. The specific objective is the installation of high efficiency Light-Emitting Diode (LED) lighting technology on twenty (20) sports fields in rural and urban communities that do not have access to public lighting. The LED lighting will be powered by solar energy in some localities and in others localities it will be connected to the existing local grid.<sup>1</sup>
- 2.2 **Justification:** Latin America and the Caribbean (LAC)'s inequality in terms of electricity access affects development opportunities, growth acceleration, sustainable poverty reduction and greater social inclusion. LAC has 30 million people that lack access to electricity and most of these people are located in rural areas where the connection to the electric grid is an economic and financial challenge. Lack of electricity in certain areas contributes to the lack of lighting in public or community areas. Likewise, there are many urban areas in the surroundings of cities with limited or no access to public and electricity services. In most of these communities sports is an important part of the culture and as such, it could be used as a way to affect positive change, particularly among the youth, and to promote growth. However, conditions of sport infrastructure, training and equipment are usually poor, limiting opportunities for developing skills, and hence widening existing inequalities.
- 2.3 In order to decrease those inequalities, simple innovations like the proposed Community Light Centers Program (the Program) can have an important effect in communities. The IDB has extensive experience supporting innovative ideas that have a deep impact on people's daily life and is well prepared for the purpose of this TC. In particular, the IDB has had a positive impact using the benefits of sports as a development tool to motivate, train and retain young people in schools and in other activities. The IDB is supporting programs such as the Inclusion, Development and Municipal Management (BO-T1133) that improve infrastructure of low income communities in El Alto, Bolivia, seeking to encourage girls to practice sports, as a way to reduce gender inequality. In the City of Rio de Janeiro, Brazil, an innovative program that involved the IDB, FC Barcelona, VISA, Colgate and the National Basketball Association (NBA) created an alliance that will benefit approximately 140,000 children in that city (ATN/JO-13570-BR). The proposed Program will continue the IDB's positive experiences.
- 2.4 The Community Light Centers Program seeks to combine the use of efficient and renewable energy technology with the benefits of sports and community life for social development. The Program will provide efficient lighting infrastructure to sports fields in low-income communities, using high efficiency LED lighting technology powered with solar energy or connected to the grid. LED lighting technology is chosen due to its lower cost of operation during the estimated life of the system (more than 70,000 hours of operation), higher efficiency, less consumption, less maintenance and larger lifespan.<sup>2</sup>
- 2.5 Most of the sports fields and the community centers to which they belong are only used during the day due to lack of public lighting. With the installation of LED efficient and renewable energy technology, the operation hours of the selected sports fields will be extended enabling them to

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<sup>1</sup> In the localities connected to the grid, the Team will make an effort to identify communities connected to a grid powered by renewable energy technology.

<sup>2</sup> LED technology represents a savings from 75% to 80% in the use of energy over traditional incandescent technology ([www.energy.gov](http://www.energy.gov)).

serve not only as sports facilities, but also as multidisciplinary centers for social, health, and education events. As such, an important part of the Program will be the training not only in the technical aspects for the operation and maintenance of the lighted sports field or community centers but the training of people in the communities to become soccer coaches.<sup>3</sup> Alongside training in soccer techniques, the coaches are also educated in social skills to inspire and develop local youth.

- 2.6 The Program will be developed in partnership with Philips, who will donate the equipment. Philips is a world leading company with 120 years of recognized expertise in the development, manufacturing and application of innovative lighting solutions, including LED technology ([www.philips.com](http://www.philips.com)). Philips' lighting technology is considered one of the most reliable on the market and the proposed intervention has been successfully implemented in similar projects in Africa and some countries in LAC.<sup>4</sup> To formalize its contribution to the Program, Philips will sign a Letter of Agreement (LA) with the Bank, committing to: (i) donation of LED lighting, controls, and solar panels and batteries, when the lighting is powered by solar energy, for the twenty sports fields; (ii) transfer of technical knowledge in the operation and maintenance of the lightning equipment to the communities where the Program will be implemented; and (iii) part of the funding for the installation services.
- 2.7 The countries participating in the Program will be selected by IDB and Philips based on countries where Philips has offices, which facilitates the reception of the imported lighting systems and/or countries where the IDB has projects that could also benefit from a "last mile" sustainable energy infrastructure that could be replicated in other countries. The Program will concentrate resources in 3 to 4 countries to be identified.
- 2.8 The communities that will be benefited by the Program are low-income<sup>5</sup> rural or urban communities (the selected local communities) with no access or limited access to electricity. For a community to be eligible it should: (i) have access to a sports field of approximately 1,000 square meters (m<sup>2</sup>) with no roof or artificial cover; and (ii) the sports field must be under the responsibility of a local association, school or municipality that must be able to officially receive the installed lighting system under a Reception Agreement (RA). The RA gives formal responsibility to the local community for the ownership, operation and maintenance of the system. The Team will also take into consideration if a community has already a relationship with other Bank initiatives.
- 2.9 The Program supports the strategies of the IDB in the region, considering: (i) increase generation of electricity from clean and renewable sources of energy; (ii) stimulate economic and social inclusion by improving life conditions for vulnerable population; and (iii) improve the infrastructure of the country. It is expected that the development of this Program and its evaluation will serve to replicate the experience in other communities in LAC.
- 2.10 The Program is aligned with the institutional priorities of the IDB as indicated in the Ninth General Capital Increase (GCI-9), contributing to 4 of the 5 strategic priority areas: (i) social policy for equity and productivity through expansion and access to basic services; (ii)

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<sup>3</sup> Philips and the Royal Netherlands Football Association (KNVB) have a partnership to develop and train coaches, which could be used in this Program.

<sup>4</sup> "Ilumina tu juego" project have been implemented by Philips in Brazil, Colombia, Chile, Panama and Aruba. [www.lighting.philips.com.br](http://www.lighting.philips.com.br)

<sup>5</sup> Low-income communities will be identified according to each country definition.

infrastructure for competitiveness and social welfare through the expansion of infrastructure and energy efficiency; (iii) institutions for growth and social welfare institutions that are enhanced by strengthening public safety and social rehabilitation; and (iv) protection of the environment in response to climate change by promoting efficient and renewable energy.

### III. Description of activities/components and budget

- 3.1 **Component I: Infrastructure Development.** This component will finance services for the design, development and complete installation of the lighting systems (civil, mechanical and electrical works, lighting poles, etc.) in each of the 20 sports fields. To complement this component, Philips will donate, the LED lighting systems, including controls, and solar panels and batteries, when using solar energy solutions, as part of its in-kind contribution (see Table 2).
- 3.2 **Component II: Knowledge Transfer.** This component will finance: (i) technical training in the operation and maintenance of electrical systems installed on the sports fields ensuring long-term proper operation; (ii) training of coaches (certified trainers) on sporting and social issues so that they exert a positive influence on the community. Each community will select among teachers to decide who will participate in the training;<sup>6</sup> and (iii) capacity building for key entities of the community to ensure the proper execution and sustainability of the Program.
- 3.3 **Component III: Communication, publication and dissemination.** This component will finance communication, publication and dissemination of the results to promote the Program's replicability in other communities of the region.
- 3.4 **Coordination.** To support implementation of the Program, the TC will finance the services of a Program Coordinator to help in the identification and selection of the 20 sports fields in the four countries; identification and selection of local firms for the installation of the equipment; preparation of the terms of reference and contract model for contracting of the firms that will install the equipment and do the operation and maintenance training and its expected results; and who, together with the IDB's Energy Division (INE/ENE), will be responsible for the logistics, and local support as well as coordination among all parties (i.e., INE/ENE, Philips, the selected local communities and the firms installing the Program).

**Table 3-1. Indicative Results Matrix**

Outcome Indicators	Baseline	Year 1	Year 2	Year 3	Target	Means of Verification
<b>Component I: Infrastructure Development</b>						
Number of Community Light Centers inaugurated	0	5	5	10	20	Progress and final reports
<b>Component II: Knowledge Transfer</b>						
Number of technical training developed	0	5	5	10	20	Enrollment and attendance records.
Number of coaches' training workshops	0	1	1	2	4	Progress and final reports

<sup>6</sup> Four to five coaches' training workshops for the 20 sport fields will be developed. The location to host each training workshop will be regional based on the location of the communities.

<b>Component III: Communication, Publication and Dissemination</b>						
Number of launching events	0	1	2	2	5	Press reports
BID TV developed	0	0	0	1	1	BID TV
Publication developed	0	0	0	1	1	Publication
<b>Social inclusion outputs</b>						
Number of persons developing night activities	0	250	250	500	1,000	Progress and final reports
Number of events promoting social capital	0	30	30	60	120	Progress and final reports

- 3.5 **Budget:** The total cost of the Program is US\$819,500 and is expected to be financed by: (i) IDB's non-reimbursable funding of US\$374,000; (ii) Phillips in-kind contribution of US\$440,500; and iii) Local in-kind contribution of US\$5,000 as presented in Table 2.

**Table 3-2. Indicative Budget**

Activity/Component	Description	IDB/ Funding	Philips*	Local Contribution (in kind)	Total Funding
<b>Component I: Infrastructure Development</b>	LED lights, controls, and solar panels and batteries, when solar powered, for 20 sports fields	-	323,400		323,400
	Services for the installation of lighting in 20 sports fields	167,000	62,100		229,100
<b>Component II: Knowledge Transfer</b>	Operation and maintenance training for of LED lighting technology	20,000			20,000
	Coaches' training in sports	-	30,000		30,000
<b>Comp. III: Communication, Publication and Dissemination</b>	Communication, publication and dissemination	25,000	25,000		50,000
<b>Coordination</b>	Technical coordinator to follow up and support the implementation of the Program	120,000	-	5,000	125,000
<b>Evaluation and Monitoring</b>		42,000	-		42,000
<b>Total</b>		<b>374,000</b>	<b>440,500</b>	<b>5,000</b>	<b>819,500</b>

#### **IV. Executing agency and execution structure**

- 4.1 **Executing Agency.** Given the regional nature of the Program, it will be executed by the IDB through its Energy Division (INE/ENE) with the coordination and cooperation of IDB's specialists on the different countries.

- 4.2 **Execution Mechanism.** The IDB will hire a Program Coordinator to facilitate the coordination and execution of this Program in accordance with current Bank procurement policies and procedures.
- 4.3 The local firms for the installation services will be selected based on evidence of: (i) experience from participation in previous or existing operations of the IDB-Group and/or Philips; (ii) experience working with social engagement projects; (iii) experience managing sub-contractors specialized on technical installations, involving electrical and mechanical aspects; (iv) ability to lead the sub-contractors activities in a daily basis, on site; and (iv) ability to execute the activities of this TC with financial responsibility and following the respective procedures.
- 4.4 The local firms will be responsible for installing the LED lighting system provided by Philips. The local firm will facilitate the local community dialogue and training of its members in technical matters related to the correct operation and maintenance of the lighting systems. The project manager, together with the ENE's Specialists and Philips, will monitor the activities performed by the local firms.
- 4.5 Once the lighting systems are installed and reception of works formalized, the day to day operation and management of the lighted sports fields or community centers will be the responsibility of the local community (see para. 2.8). To ensure the sustainability of the Program, local communities will be trained in efficient management of the system and in revenue raising mechanisms such as the creation of a fund by charging a fee for the use of the fields or other alternatives. The amounts on the fund should cover maintenance and additional costs in the long term, such as battery replacement.<sup>7</sup> The batteries last, depending on its use, approximately five years and the automatic controls for turning the lights on and off at predetermined times help to increase its lifespan. Also, in the eventual failure of a light, the community will get in contact with Philips, who will assess the problem and propose a solution.
- 4.6 **Procurement:** The Bank will contract individual consultants, consulting firms, and non-consulting services in accordance with the IDB's current procurement policies and procedures.<sup>8</sup>

## V. Major issues

- 5.1 The main risks identified for the Program's successful implementation are:
- 5.2 **Difficulties in identifying local firms.** In order to implement the Program, firms with local experience in the beneficiary communities and with previous experience on energy Programs must be identified. Delays in the identification of local firms will impact the timely execution of the Program. To mitigate this risk, the Team has identified, in certain locations, potential firms to implement the Program, namely: *Plan International*, *Enérgica*, *Acciona Microenergía*, and *Soluciones Prácticas*, among others. Also, the experienced Coordinator to be hired will help in the identification of the firms.
- 5.3 **Difficulties in identifying local communities.** Considering that selected communities must fulfill specific conditions (see para. 4.1), there is a risk of delays in the communities' identification. To

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<sup>7</sup> The estimated replacement cost of the batteries after approximately 5 years is US\$1,300 per field.

<sup>8</sup> On May 14, 2014 the Executive Directors approved the Policy for the Selection and Contracting of Consulting Firms in Bank-Executed Operational Work (GN-2765-1) which will replace the use of the Policy GN-2350-9 when the Bank contracts consulting firms in Bank-executed project-related TC operations.

mitigate this risk, the Program Coordinator, ENE specialists and local governmental experts will be involved in the identification of those locations.

- 5.4 **Lack of technical expertise to handle and install the lighting equipment.** Considering the technological aspects of the LED lighting to be installed, the lack of technical knowledge could pose as a risk in the installation and may compromise the capacity of the system to deliver the expected results for the communities. The mitigation strategy is to adopt lessons learned from Philips' experience, technology and technical expertise in the implementation of similar projects in Africa and in some countries in LAC.
- 5.5 **Long term Project Sustainability.** The TC will provide training workshops for operation and maintenance of the electrical systems installed. Furthermore, a funding mechanism will be created at the community level to recover costs in the long term, mainly for battery replacement. For example, the local community could charge a fee for the use of the field.

## **VI. Exceptions to Bank policy**

- 6.1 This project does not call for any exception to Bank policy.

## **VII. Environmental and Social Strategy**

- 7.1 According to the ESG toolkit, the classification of this project is C, i.e. no environmental or social risks are expected. See environmental filters: ["Safeguard Policy Filter Report \(SPF\)"](#) and ["Safeguard Screening Form \(SSF\)"](#).

### **Required Annexes:**

- Annex I: [Terms of Reference for activities/components to be procured.](#)
- Annex II: [Procurement Plan.](#)

## **COMMUNITY LIGHT CENTERS**

**RG-T2502**

### **CERTIFICATION**

I hereby certify that this operation was approved for financing under the Sustainable Energy and Climate Change Initiative (SECCI-SCI) through a communication dated October 15, 2014 and signed by Gerhard Lair (ORP/GCM). Also, I certify that resources from said fund are available for up to **US\$374,000** in order to finance the activities described and budgeted in this document. This certification reserves resources for the referenced project for a period of four (4) calendar months counted from the date of eligibility from the funding source. If the project is not approved by the IDB within that period, the reserve of resources will be cancelled, except in the case a new certification is granted. The commitment and disbursement of these resources shall be made only by the Bank in US dollars. The same currency shall be used to stipulate the remuneration and payments to consultants, except in the case of local consultants working in their own borrowing member country who shall have their remuneration defined and paid in the currency of such country. No resources of the Fund shall be made available to cover amounts greater than the amount certified herein above for the implementation of this operation. Amounts greater than the certified amount may arise from commitments on contracts denominated in a currency other than the Fund currency, resulting in currency exchange rate differences, for which the Fund is not at risk.

**ORIGINAL SIGNED**

**Jan 21, 2015**

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Sonia M. Rivera  
Chief  
Grants and Cofinancing Management Unit  
ORP/GCM

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Date

### **APPROVAL**

Approved:

**ORIGINAL SIGNED**

**Jan 27, 2015**

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Ariel Yepez  
Division Chief  
Infrastructure and Environment Sector  
INE/ENE

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Date