

TC DOCUMENT

I. Basic Information for TC

▪ Country/Region:	REGIONAL
▪ TC Name:	Regional Platform to Scale Up Rural Electrification Investment
▪ TC Number:	RG-T4133
▪ Team Leader/Members:	Cuervo, Javier (INE/ENE) Team Leader; Alarcon, Arturo (INE/ENE) Alternate Team Leader; Ballon Lopez, Sergio Enrique (INE/ENE); Echevarria Barbero, Carlos Jose (INE/ENE); Gomez, Jose Ramon (INE/ENE); Hincapie Salazar, Daniel (CSD/ACU); Lesenfants, Yves (CSD/ACU); Prado, Veronica Rodrigues Do (INE/ENE); Urquijo Vanegas, Lee Harvey (ITE/IPS); Vega Castro, Loana (INE/ENE); Vila Saint-Etienne, Sara (LEG/SGO); Ziza Machado (INE/ENE)
▪ Taxonomy:	Client Support
▪ Operation Supported by the TC:	
▪ Date of TC Abstract authorization:	18 May 2022.
▪ Beneficiaries:	Energy sector authorities of Panama, Peru, Paraguay, Brazil, and Suriname.
▪ Executing Agency and contact name:	Inter-American Development Bank
▪ Donors providing funding:	Low Carbon Energy Fund for People and Planet(LCE); OC SDP Window 3 - Sustainable Development in the Amazon(W3A)
▪ IDB Funding Requested:	Low Carbon Energy Fund for People and Planet (LCE): US\$1,050,000.00 OC SDP Window 3 - Sustainable Development in the Amazon (W3A): US\$450,000.00 Total: US\$1,500,000.00
▪ Local counterpart funding, if any:	US\$0
▪ Disbursement period (which includes Execution period):	36 months
▪ Required start date:	November, 2022
▪ Types of consultants:	Firms and Individual Consultants
▪ Prepared by Unit:	INE/ENE-Energy
▪ Unit of Disbursement Responsibility:	INE/ENE-Energy
▪ TC included in Country Strategy (y/n):	Yes
▪ TC included in CPD (y/n):	N/A
▪ Alignment to the Second Update to the Institutional Strategy 2020-2023:	Social inclusion and equality; Productivity and innovation; Environmental sustainability

II. Objectives and Justification of the TC

- 2.1 The objective of this Technical Cooperation (TC) is to support an increment in access to electricity with emphasis on accelerated installation of grid extension and off-grid solutions (mini-grids and individual systems) to help the region achieve universal access to electricity by 2030 in line with the Sustainable Development Goals (SDGs). The specific objectives are: (i) To formulate a country specific universal access plan for each of the focus countries;¹ (ii) To develop a digital platform based on georeferenced information to support the formulation of universal access plans, along

¹ Panama, Peru, Paraguay, Brazil, and Suriname.

with capacity building, that will identify the best combination of network extension solutions, mini-grids, or individual systems; and (iii) To create a toolkit to support analytical work that will serve as a knowledge repository and will support sector and policy dialogues. Additionally, the TC aims at developing a strategy for attracting suppliers to provide grid extension services/isolated systems in rural and dispersed areas (equipment suppliers and installation companies).

- 2.2 The region of Latin America and the Caribbean (LAC) could be the first developing region of the world to achieve universal access to electricity services. In 2020, the region had an estimated 97.4% electricity service coverage, meaning that 16.8 million people were still lacking service. Among the populations that still lag in connectivity are rural population and indigenous people with more than half being women.² All the focus countries have subscribed to the SDG of universal access by the year 2030. However, reaching the so-called “last mile” is costly and adequate planning and public policies are required.
- 2.3 Geospatial planning identifies and incorporates the physical and demographic distribution of households without access to enable planners to better evaluate least-cost options for connecting these households. Providing solutions that are economically sensible presents a challenge in the mid- to long-term as adequate maintenance for remote areas can be costly (and often non-existent) and non-paying customers are common. Different inputs are used for the geospatial aspect, including satellite imagery, census information, grid extension coordinates, and socio-environmental information. The process culminates with the development of an investment plan and prospectus. A geospatial, least-cost electrification plan begins with the collection of high-resolution datasets with geo-located information of existing energy infrastructure and demand points (settlements, households, etc.), followed by a demand forecast and a cost estimate for grid and off-grid technologies at all demand points. The total costs are compared for each demand point to generate a cost optimal system plan. This plan is then used to create an investment prospectus using country-specific costs and indicating the phased expenditures needed to achieve the electricity access targets. It will be required for the plan to set dedicated actions to achieving access in female headed households. The process will incorporate various factors such as demographics, demand, technology choice, existing infrastructure, renewable energy options and costs, and expected gaps over a defined planning horizon. The plan will provide estimates and gender-specific recommendations for long-term electrification systems, as well as short to medium-term options for interim electrification during the years required for grid expansion. The process is iterative and involves local stakeholders, thereby providing an opportunity for capacity building on energy planning, data collection, and management.
- 2.4 **Beneficiaries.** The focus countries for the universal access plans are Panama, Peru, Paraguay, Brazil, and Suriname but a regional platform will benefit all LAC countries.³ In 2020, the number of inhabitants without access to electricity was: 244,000 in Panama, 989,000 in Peru, 29,000 in Paraguay, 489,000 in Brazil, and 57,000 in Suriname.⁴ These countries were chosen because of their governments’ interest in this technical assistance (¶4.1), previous work carried out by the Bank in these

² https://repositorio.cepal.org/bitstream/handle/11362/45037/4/S1900722_en.pdf

³ Any eligible country which could benefit from this TC according to the team’s technical criteria, can be included as a beneficiary once they have sent the official letter of interest to participate.

⁴ [OLADE – Panorama energético de América Latina y El Caribe](#). 2021

nations, and the need to advance the planning and implementation of universal access programs to meet the set goals. The TC RG-T3725 ([ATN/OC-18070-RG](#)) is currently financing the plans for four out of the nine states of the legal Amazon; this TC fills in the financing for the remaining five states. In Panama, the Bank is financing the development and implementation of a universal access program under loan PN-L1155 ([4790/OC-PN](#)) and TC PN-T1269 ([ATN/OC-18626-PN](#)). For Paraguay, this TC will continue the modernization work started by loan PR-L1125 ([SP/SF-84-12-PR](#)) and CT PR-T1285 ([ATN/JF-17929-PR](#)). In Peru, a project is being prepared in parallel regarding project studies for energy access in the Amazonian region. Peru's inclusion is critical to achieve universal access at the regional level. The selection also balances participation of all sub-regions of the Bank and countries that are part of the Amazon Initiative (Peru, Brazil, and Suriname).

- 2.5 This TC will assist, at least, four of the focus countries to build capacity to identify the best sustainable solutions to increase access to energy for each remaining community without such services. It will also develop a platform of tools and best practices that will benefit all the countries. Furthermore, the results of this work and associated knowledge products will be disseminated across the region to support knowledge sharing and to increase regional capacity in these areas through the *Energy Hub* hosted by the Bank.
- 2.6 **Strategic Alignment.** The TC is aligned with the Second Update to the Institutional Strategy 2020-2023 (AB-3190-2), with the development challenges of: (i) *productivity and innovation* by developing an innovative georeferenced tool for electrification planning; and (ii) *social inclusion and equality* by supporting planning actions that will bring electricity to vulnerable communities that lack the service. Also, it is aligned with the cross-cutting issue of *climate change and environmental sustainability* by encouraging electrification through individual renewable energy systems that would displace non-clean energy sources (diesel). The TC is aligned with the Corporate Results Framework 2020-2023 (GN-2727-12) specifically with the indicator of climate change and environmental sustainability as it aims at reducing the amount of CO₂ emissions by providing clean sources of energy to areas that have predominantly use fossil fuels to meet their energy needs. The TC is also aligned with the IDB Group Country Strategy with: (i) Panama (2021-2024), in the priority area of improving the delivery of basic services and the development of low-emission infrastructure in the provision of electricity; (ii) Paraguay (2019-2023), in the strategic area of productive and resilient infrastructure that identifies the need to tackle shortcoming in the distribution of electricity; (iii) Peru (2022-2026), in the area of productive development that identifies the closing of gaps in the provision of public domiciliary services as a development objective; (iv) Suriname (2021-2025), in the strategic area of improving basic services that prioritizes interventions to reduce inequality in access to electricity in rural areas; and (v) Brazil (2019-2022), in the priority issue of reducing inequality of opportunity with the emphasis of the TC on non-served communities that lack electricity. The TC is consistent with the Energy Sector Framework Document (GN-2830-8), specifically with three of its four thematic lines to guide LAC's energy sector work: (i) energy access—coverage, reliability, and affordability; (ii) energy sustainability—energy efficiency, renewable energy, and climate change; and (iii) energy governance—institutional framework, sectorial organization, and policies.
- 2.7 This TC is also aligned with the OC SDP Window 3 - Sustainable Development in the Amazon (W3A) objectives: (i) fostering the development of models that are tailored to the local conditions of the Amazon; and (ii) generating synergies and progress

towards the SDGs in a multinational context of the unique socio-environmental Amazon region. The development of the georeferenced access plan and geospatial platform fulfill the objectives to develop tools to embed sustainable and inclusive development program by adapting high potential technology to implement cohesive actions in a multi-nations/multi-user setting. Lastly, the TC is aligned with the objectives of Low Carbon Energy Fund for People and Planet (LCE) (GN-3073-1) since it (i) expands distributed renewable energy to underserved communities as the TC target customers are in the Amazonian region; and (ii) supports the energy transition towards net-zero systems in LAC through the promotion of renewable energy to supply the underserved communities. Also, it is aligned with the two eligible pillars of the LCE: (i) Energy Access and DRE as it will seek to provide energy by comparing on-grid and off-grid technologies; and (ii) Energy Transition as the communities served relied on fuels to meet their energy needs. The TC is in addition, aligned with the purpose statement where the operation supports access to affordable, reliable, and modern energy services to underserved communities.

III. Description of Activities/Components and Budget

- 3.1 **Component I. Universal access plans (US\$800,000).** Resources will support the formulation of universal georeferenced access plans using geospatial planning with innovative, state-of-the-art granular least cost electrification to compare on-grid and off-grid technologies.⁵ The objective is to improve the electrification planning for the beneficiary countries which is expected to result in improved investment plans to provide energy for the underserved population. The plan will include an investment prospectus and regulatory analysis incorporating the differentiated needs for female head of households, which involves data collection in the field. The target countries for this operation are Panama, Peru, Paraguay, Suriname, and Brazil-Amazon states. The plans will also include an institutional capacity analysis of each target countries.
- 3.2 **Component II. Geospatial platform (US\$400,000).** This component will finance a tool to facilitate the scaling-up of rural electrification investment using a platform that will integrate information about costs, market, consumer data (disaggregated by gender), and visual display of geospatial information aimed at increasing electricity access to underserved communities and marginalized groups. The objective is to strengthen the regional knowledge on rural electrification to facilitate investment processes. The platform will be integrated to the Bank's *Energy Hub*; hence, the information will be available to the public and will be maintained along with the current support to the platform. Additionally, the corresponding planning agencies in each of the beneficiary countries will keep the country-level plan for future updating.
- 3.3 **Component III. Analytical support (US\$200,000).** This component includes: (i) the formulation of concession protocols, standard contracts, and demand modeling; (ii) a prospective analysis on market opportunities for off-grid technologies; (iii) tools to design off-grid renewable energy projects (i.e., minigrids or solar home systems); (iv) template documents for innovative business models for -off-grid projects; and (v) the formulation of methodologies and procedures to track the progress of rural electrification projects. The objective is to improve the knowledge about the options

⁵ The universal access concept includes health centers, community centers, schools, etc. hence connections for these services will also be identified.

for rural electrification in the region. The obtained information will be linked to IDB's *Energy Hub* website.

- 3.4 **Component IV. Capacity building and dissemination (US\$100,000).** The TC will facilitate national and regional workshops to exchange best practices and training to relevant stakeholders, specifically, authorities and energy agencies overseeing sector planning as well as companies in charge of providing electricity services. National workshops will include stakeholders of the focus countries only, while the regional workshops will share lessons learned with stakeholders from all IDB countries. These workshops will have an in-person, virtual, or hybrid modality. The training will aim to strengthen the gender perspective while increasing electricity access. This component will also finance a regional institutional capacity analysis to strengthen rural access governance. Given that both the geospatial platform and the analytical support products will be linked to the IDB's *Energy Hub*, access to this information will be maintained even after the TC funds have expired.
- 3.5 **Budget.** The total cost of the project is US\$1,500,000, which will be financed with the following resources: US\$1,050,000 from the Low Carbon Energy Fund for People and the Planet (LCE), and US\$450,000 from the Ordinary Capital Strategic Development Program OC SDP, Window 3 - Sustainable Development in the Amazon (W3A).⁶

Indicative Budget

Component	Description	IDB/LCE	IDB/W3A	Total Funding
1.Universal access plans	Georeferenced access plans with granular least cost electrification	US\$350,000	US\$450,000	US\$800,000
2.Geospatial platform	Facilitate scaling-up of rural electrification investment	US\$400,000	US\$0.00	US\$400,000
3.Analytical support	Formulation of concession protocols, contracts, business models	US\$200,000	US\$0.00	US\$200,000
4.Capacity building and dissemination	Workshops and conferences to share knowledge products in the region	US\$100,000	US\$0.00	US\$100,000
		US\$1,050,000	US\$450,000	US\$1,500,000

- 3.6 Since this is a regional project executed by the IDB, a Bank-led supervision and approval scheme will be applied, where country representatives will actively participate in the contracting and reports review processes, following the provisions of the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-4) and its Operational Guidelines (OP-1155-4).
- 3.7 All knowledge products derived from this Technical Cooperation will be the Bank's intellectual property

IV. Executing Agency and Execution Structure

⁶ The funds of the W3A will only be used to finance the development of the plans of Surinam, Brazil and Peru, countries that are eligible for the W3A fund.

- 4.1 At the request of the beneficiaries, and in line with the Procedures for the Processing of Technical Cooperation Operations and Related Matters (OP-619-4), the Bank, through the Energy Division, will act as the Executing Agency (EA) for this TC due to its extensive experience in the sector in the preparation and development of technical and operational activities similar to those proposed for this operation, which will contribute more effectively to the achievement of the objectives in a timely manner. The Bank will serve as a catalyzer of knowledge and innovation, and impact policy on multiple scales within the region, making the regional coordination of the IDB a necessary condition of this TC. The Bank will lead the implementation and programmatic oversight of the different activities. Active engagement with and awareness of the work of other organizations operating in the field will also help avoid any potential overlaps with ongoing efforts. Additionally, considering the geospatial platform will be hosted by the IDB's energy hub, the technical independence needed for this operation, and the absence of a regional agency that could assure the achievement of the objectives, it is well suited for the Bank to be the EA of this TC. This is also justified under Annex II, ¶2.1 of the document OP-619-4.
- 4.2 Furthermore, given the regional nature of the TC, the execution by the Energy Division (INE/ENE) will facilitate coordination among different stakeholders. The Bank will contribute with the harmonization of the activities at a regional level by providing a linkage between all rural electrification plans and the tools of the facility, guaranteeing that all countries benefit from the experience of the others. The beneficiaries of this TC are the energy sector authorities of Panama, Peru, Paraguay, Brazil, and Suriname. The project team, which includes IDB's energy specialists based in the country offices, will be working in each beneficiary country with the teams designated by the energy authorities as main beneficiaries, to coordinate all missions and events to take place. IDB's Energy Specialists based in the country offices will maintain a permanent dialogue with their respective Country Representatives and Chiefs of Operations.
- 4.3 **Procurement.** The IDB will be responsible for the selection and contracting of consulting firms and individual consultants. Activities to be executed are included in the Procurement Plan and will be contracted in accordance with Bank policies as follows: (i) Hiring of individual consultants, as established in the regulations AM-650; (ii) Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work according to GN-2765-4 and its associated operational guides (OP-1155-4); and (iii) contracting of logistics services and other services other than consulting, according to the policy GN-2303-28. The Unit of Disbursement Responsibility (UDR) is INE/ENE, the execution and disbursement period is 36 months.
- 4.4 **Single Source Selection (SSS).** For the universal access plan for the five Amazon-states of Brazil, a continuation of services with single source selection with Universidad Pontificia Comillas is envisaged due to their clear advantage since the firm, with resources of the TC RG-T3725, is carrying the analysis for the other four of the nine legal Amazon states and the work constitutes a natural continuation. This method of selection is used in accordance with paragraph 4.1.3 (a) of the Policy for the Selection and Contracting of Consulting Firms for Bank-executed Operational Work (GN-2765-4) that allows for SSS for tasks that represent a natural continuation of previous work carried out by the firm.
- 4.5 The TC does not present fiduciary management risks as it will be implemented by the Bank. Therefore, no financial audit is required.

V. Major Issues

- 5.1 One of the main risks associated with this TC is the lack of coordination with different stakeholders related to the formulation of the universal access plans. This risk will be mitigated by hiring a project coordinator, who will be supported by the Energy Access Group in the Bank's Energy Division.⁷ Another mitigating factor is the composition of the project team and the interaction with the country offices (see ¶4.1). A second risk is the high level of staff turnover in the governmental authorities. This risk will be mitigated through the dialogue by the team with new authorities and the involvement of the technical staff of the government agencies. A third risk is to obtain all the information required to produce the plans on a timeline manner. To mitigate this risk, the studies will be conducted in countries which have already expressed interest in being part of this TC, and where the Bank has already supported the development of capacities regarding rural electrification.

VI. Environmental and Social Strategy

- 6.1 This TC will not finance feasibility or pre-feasibility studies for investment projects with associated environmental and social studies; therefore, it is excluded from the scope of the Bank's Environmental and Social Policy Framework (ESPF).

Required Annexes

[Request from the Client - RG-T4133](#)

[Results Matrix - RG-T4133](#)

[Terms of Reference - RG-T4133](#)

[Procurement Plan - RG-T4133](#)

[Terms of Reference - RG-T4133](#)

[Procurement Plan - RG-T4133](#)

⁷ This coordinator is financed with the administrative fees paid by the Global Energy Alliance for People and Planet for the administration of the LCE and not with resources from the TC.