

Implementation of remote management of public lighting and smart metering through SMI, to improve energy efficiency and metering in real time for users in the monumental area in the district of Iquitos, Province of Maynas, Loreto

Title of the program	Implementation of remote management for public lighting and smart metering through SMI, to improve energy efficiency and metering in real time for users in the monumental area in the district of Iquitos, Province of Maynas, Loreto Region.		
Sector (subtemas)	<i>Smart metering through SMI and Implementation Remote management of public lighting</i>		
Country	Perú	Location	<i>Iquitos/Maynas /Loreto.</i>
Project duration	24 months	Budget	USD 1 710 000
Association with other projects			

Submitter's Information

BID (office in the selected country)	
Name	(details to be provided when selected)
Position	
Email	
Telephone	

Partner Country's Implementing Organization(s)

Partner Country Contact	
Name	(details to be provided when selected)
Position	
Organization	Electro Oriente
E-mail	

1. Project Background

Within the framework of the declaration of national interest in the promotion of the Efficient Use of Energy to ensure the supply of energy, protect the consumer, promote the competitiveness of the national economy and reduce the negative environmental impact of the use and consumption of energy, provided for in Law No. 27345, Supreme Decree 018-2016-EM has been issued, ordering the implementation of smart metering within a maximum period of eight (8) years, counted from the day after its enactment 7.24.2016.

In order to reduce the visual impact of aerial wiring in monumental areas, Law 30477 has been enacted, which orders in the first transitory complementary provision the removal of existing aerial wiring in historic centers within a maximum period established by the regulatory body (OSINERGMIN), the same one that through resolution of the OSINERGMIN board of directors No. 207-2019-OS/CD, mentions that the concessionaire companies of the public electricity sector remove the aerial wiring located in the historic centers within a period of four (4) years, counted from the entry into force of its resolution.

In this sense, Electro Oriente has managed the idea of a project to fulfill these obligations with its 3 410 users and with the state.

2. Project Objectives.

- Optimize and improve the billing process with remote reading of measurements and control of energy and power consumption.
- Reduction of time in the restoration of service after interruption due to payment failure.
- Ensure that communications are secure and reliable.
- Have better control over energy sales and delinquent customers.
- Perform daily and monthly energy balance.
- Detection of adulterated meters and optimization in the improvement of customer service.
- Simultaneous monitoring of power consumption and quality for line and load.
- In the event of a power outage, which gives notice, after the service is cut off.
- Detection of power loss in real time.
- Reduction of maintenance costs and energy costs.

3. Project Components

3.1 Feasibility and design studies.

This component will finance the feasibility studies and the designs of the solutions for the Implementation of the public lighting network and smart metering through

Tele management and Smart Grid, for the 3 410 clients, with a sustainable business model that guarantees the operation of the project for 20 years.

During the feasibility and design phase, the consultant in charge of the studies should collect secondary information that includes at a minimum:

- The location of the project, locating the "Strategic Area of Priority Investment
- The maximum demand of the project.
- Includes SMI smart metering and remote management for street lighting.
- Peruvian energy regulations.

Once the consultant has compiled and analyzed all the information, considering in his analysis the technical, financial, environmental and social conditions to develop the projects. During this phase, the consultant must interact and consult with the potential beneficiaries and other relevant actors who could play a role during the project.

The results of the feasibility phase must define at least the following aspects:

- The number of beneficiaries.
- The installed capacity of the projects and their technical characteristics and/or support or complementary systems.
- Estimated CAPEX and OPEX of the projects
- Financial model and rate scheme.
- Environmental and social analysis identifying possible barriers and environmental and social measures that must be implemented to reduce negative impacts and comply with Peruvian regulations.

Once the feasibility studies are completed, the consultant must start the design phase, developing at least the following project activities:

- Topographic studies
- Electrical and structural plans.
- Budget
- Social and environmental permits and/or socializations.
- Sustainable financial and operating model and rate scheme.
- Equipment Technical specifications.
- Design report and calculations
- Construction schedule.

3.2 Construction and commissioning

This component will finance the construction and start-up of the implementation of the public lighting network and smart metering through Tele management and Smart Grid.

Once the design studies have been approved, the executor of the work will be contracted. In this component, the EPC contractors will implement the solutions according to the designs that were made in component d.1. Once the solutions are

implemented, EPC will test them, ensuring that they operate according to the technical parameters established during the design phase and will officially deliver the projects to their operators according to the business model established in component d.1.

3.3 Supervising Engineer

This component includes the hiring of a consultant who will supervise and monitor all the technical, financial, legal, and regulatory aspects that will be developed in components 3.1 and 3.2.

4. Project Location, Period and Estimated Cost.

Term: 24 months. The project is scheduled to start in 2022 with the preparation of the terms of reference for the different studies; develop the feasibility and design studies during the second half of 2022, and start construction in the last half of 2023.

Componentes	2022			2023												2024											
	Oct	Nov	Dic	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Set	Oct	Nov	Dic	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Set	Oct	Nov	Dic
Estudios de Viabilidad y diseño																											
Construccion y puesta en servicio																											
Ingeniero de supervisión																											
Coordinación y fortalecimiento institucional																											

Budget: Total US\$ 1,710,000 associated with four different components shown in the following table:

Components	Budget (USD)
1. Feasibility and design studies	US\$45,000
2. Construction and start-up of the Hybrid Gene	US\$1,500,000
3. Supervising Engineer	US\$120,000
4. Coordination and institutional strengthening	US\$45,000

5. Project Implementing Organization.

The Project will be implemented by Electro Oriente, that is a electric distribution enterprise. Electro Oriente is a state owned enterprise, that has the responsability to supply energy in Loreto Region, and for that has to be aligned with the objectives of Ministry of Energy and Mines.

6. Required coordination at National/Regional Level

This Project has to be coordinated with Ministry of Energy and Mines this could be a model that could be replicated with the others public electric distribution enterprises.

It will also be necessary to coordinate with local and regional authorities to obtain some permits.

7. Risks and Opportunities

The risks associated with the project are:

- Delay in obtaining permits (environmental and cultural), may affect the project schedule.

The opportunities associated with the project are:

- This project could a project that could be replicated for others public electric distribution enterprises.
- Reduction of the attention time of the cuts in the electrical service
- Decrease in electricity consumption

Location: The project will be developed in the city of Iquitos, Maynas province, Loreto region.

