



UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	Renewable Energy Expert
Main Duty Station and Location:	Lima, Peru
Mission/s to:	To be paid separately
Start of Contract (EOD):	15 August 2026
End of Contract (COB):	31 December 2026
Type of contract:	WAE
Duration/Number of Working Days:	53 working days

ORGANIZATIONAL CONTEXT

The United Nations Industrial Development Organization (UNIDO) is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization, and environmental sustainability. The mission of UNIDO, as described in the Lima Declaration adopted at the fifteenth session of the UNIDO General Conference in 2013 as well as the Abu Dhabi Declaration adopted at the eighteenth session of UNIDO General Conference in 2019, is to promote and accelerate inclusive and sustainable industrial development (ISID) in Member States. The relevance of ISID as an integrated approach to all three pillars of sustainable development is recognized by the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs), which will frame United Nations and country efforts towards sustainable development. UNIDO's mandate is fully recognized in SDG-9, which calls to "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation". The relevance of ISID, however, applies in greater or lesser extent to all SDGs. Accordingly, the Organization's programmatic focus is structured in four strategic priorities: Creating shared prosperity; Advancing economic competitiveness; Safeguarding the environment; and Strengthening knowledge and institutions.

Each of these programmatic fields of activity contains a number of individual programmes, which are implemented in a holistic manner to achieve effective outcomes and impacts through UNIDO's four enabling functions: (i) technical cooperation; (ii) analytical and research functions and policy advisory services; (iii) normative functions and standards and quality-related activities; and (iv) convening and partnerships for knowledge transfer, networking and industrial cooperation. Such core functions are carried out in Departments/Offices in its Headquarters, Regional Offices and Hubs and Country Offices.

The Directorate of Technical Cooperation and Sustainable Industrial Development (TCS), headed by a Managing Director, oversees the Organization's development of capacities for industrial development as well as industrial policy advice, statistics and research activities and the Organization's normative contribution to Member States and global development community in achieving the SDGs. The Directorate also ensures the application of strategies and interventions for sustainable industrial development related to Environment, Energy, SMEs, Competitiveness and Job creation, as well as Digitalization and Artificial Intelligence. Through coordination in-house and with Member States and industry stakeholders, it ensures that the services provided in these areas contribute toward effective and appropriate technical, business and

policy solutions and are focused on results and on realizing any potential for scaling up and positioning UNIDO as a leading platform for industrial development in developing countries and global fora.

The Division of Circular Economy and Green Industry (TCS/CEG) contributes to greener and more circular industries and products by minimizing both resource use along value chains and the emission of pollutants to the environment. The Division promotes just transitions to circular economies, reduced release of pollutants into the environment and other green industrial and economic approaches to help Member States to grow economically while simultaneously addressing the three planetary crises of climate change, biodiversity loss and pollution. It does so by supporting resource efficiency increases in the manufacturing and use of products along value chains and during the life cycle of the product; by reducing or eliminating the emission of non-fuel-related greenhouse gas emissions; and by assisting in achieving the objectives of and compliance with multilateral environmental agreements. In doing so, its activities further improve competitiveness, as well as the development of and access to markets, particularly for SMEs. This contributes to climate-neutral, resilient, pollution-free industrial development, supporting co-existence that is in harmony with nature.

This position is located under the Circular Resource Efficiency Unit (TCS/CEG/CRE) which is responsible for supporting capacity development to promote the adoption of circular and resource-efficient consumption and production patterns across value chains. It fosters circular economic solutions including policies, programmes, practices, and business models that enhance industry profitability while generating social and environmental benefits. Furthermore, it facilitates design for circularity emphasizing reduced or alternative materials inputs, greater durability, reusability, reparability, and ultimately recyclability. The Unit promotes nature-based solutions and ecosystem-based approaches that support the co-existence of industries and nature.

PROJECT CONTEXT

GEIPP PERU PROJECT CONTEXT

In the framework of the SECO-funded Phase II of the “Global Eco-Industrial Parks Programme (GEIPP II) in Developing and Transition Countries” currently implemented by UNIDO, the project “Global Eco-Industrial Parks Programme – Peru: Country-level intervention” (GEIPP II – Peru) will address eco-industrial park (EIP) development in Peru. The objective of the second phase of the Global Eco-Industrial Parks Programme (GEIPP-II) is to promote circular economic approaches in industries, mitigate the climate impact of these industries, and help industrial parks adapt to the negative consequences of climate change. The programme will achieve this by continuing to facilitate the uptake of Eco-Industrial Park approaches in scaling up resource efficiency, minimizing waste, promoting recycling, and improving the economic, environmental, and social performances of businesses, thereby contributing to inclusive and sustainable industrial development in a circular economy. The Project will deliver the expected results via two outcomes and their related outputs, as presented below:

- Outcome 1: EIPs incentivized and mainstreamed in relevant policies and regulations
- Outcome 2: EIP opportunities implementation, with economic, environmental, and social benefits achieved by industrial parks and their enterprises confirmed

MAIN FUNCTIONS

Under the direct supervision of the UNIDO Project Manager (PM), the UNIDO Senior Lead Expert (SLE), the National Project Coordinator (NPC), and in close coordination with the National RECP Expert, the Renewable Energy Expert will carry out technical and economic Feasibility Studies in the selected companies with prioritised opportunities for photovoltaic system solutions (PV systems).

The main duties and deliverables are described below:

<u>MAIN DUTIES</u>	Concrete/ measurable outputs to be achieved	Expected duration	Location
1. Preparation for the feasibility study			
1.1. Inception Meeting and Work Plan Presentation An initial meeting will be held between the consultant and the GEIPP Peru team to address questions and align key aspects of the requested service, related to the development of technical and economic feasibility studies for ten (10) prioritized opportunities based on the use of renewable energy (photovoltaic systems and standalone solar lighting), with eight (8) at the company level and two (2) at the industrial parks level. As a result of this meeting, the consultant shall present the work plan, which will include: • Methodological approach for the evaluation, design, and implementation of photovoltaic systems and standalone solar lighting, considering technical, economic, and operational criteria for their efficient integration into the facilities. • Activities and main milestones of the service. • Initial recommendations and conclusions. The work plan will be presented to the GEIPP Peru team and must be reviewed and approved prior to its implementation. The work plan must include, at a minimum, the following elements: executive summary, objective, scope, methodology, activity plan, timeline, expected results and deliverables, risk identification and mitigation measures, and monitoring and reporting mechanisms. It is important to note that of the ten (10) studies, five (5) must address opportunities for implementing photovoltaic systems, and the other five (5) must	Inception report (with the work plan attached as a supporting document).	2 days	Lima, Perú

<u>MAIN DUTIES</u>	Concrete/ measurable outputs to be achieved	Expected duration	Location
address opportunities for off-grid solar lighting systems.			
2. Feasibility study			
The information related to the technical, economic, environmental, and legal/regulatory feasibility analysis of improvement opportunities at the company level is presented in Annex 1. 2.1. Coordination and data collection from companies. The consultant should coordinate and conduct meetings with the companies and industrial parks to present the working methodology and collect the information required for the feasibility analysis. For this stage, a minimum of ten (10) virtual meetings shall be held, one (1) per company or industrial park, ensuring the validation of the information provided. All collected information should be organised and stored in a cloud-based repository (Google Drive or equivalent) to ensure proper order and traceability. Based on this information, the initial analysis for the feasibility studies will be developed.	Ten (10) folders (in the cloud) with the relevant information (one per company) for feasibility studies.	18 days	Lima, Peru
2.2. Technical visits The next step involves technical visits to companies, aimed at collecting and validating on-site information about photovoltaic systems and lighting powered by standalone solar panels. At least one (1) technical visit should be carried out per company or industrial park. During these visits, operational conditions, energy consumption, and installation points shall be verified, and technical evidence shall be collected to support the technical, economic, and environmental feasibility assessment. The consultant should inspect the existing roofing and supporting structures to identify their current condition. This includes gathering evidence to determine whether the rooftops are suitable for installing photovoltaic arrays, considering their load-bearing capacity and structural integrity. The visits will include prior coordination, on-site data collection, and recording of findings for inclusion in the reports.	Ten (10) technical visits (one per company or industrial park).	7 days	Tacna (4 days), Paíta (1 day), Piura (2 day)

<u>MAIN DUTIES</u>	Concrete/ measurable outputs to be achieved	Expected duration	Location
2.3. Feasibility reports (draft) Based on the information collected during the meetings and technical visits, the consultant shall prepare ten (10) feasibility reports, one for each improvement opportunity. Each report shall present technical, economic, and environmental feasibility analysis. These solutions should be focused on photovoltaic systems and lighting with standalone solar panels, supported by field-validated data. The reports should include the assessment of viability, required investments, potential savings, and sustainability criteria, serving as a basis for decision-making on implementation. The minimum number of chapters to be included in the feasibility studies is outlined in Annex 2.	Ten (10) feasibility reports	20 days	Lima, Peru
3. Presentation of feasibility results			
3.1. Dissemination of the feasibility studies to the companies In coordination with the GEIPP Peru team, the consultant should carry out a presentation and dissemination of the ten (10) feasibility reports (with executive summary in English and Spanish) and a PPT to the participating companies, including the formal submission of each report via email and the organisation of at least one virtual presentation meeting.	Ten (10) dissemination meetings	5 days	Lima, Peru
3.2. Final report of feasibility studies The consultant should prepare a final report that consolidates all activities carried out, including the data collected, feasibility studies, and results obtained. The final report should present key indicators, main findings, conclusions, and recommendations, serving as a basis for decision-making and future implementation.	One (1) final report on the feasibility studies	1 day	Lima, Peru

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: An advanced university degree in process, electrical, or energy engineering or a related field is **required**. Postgraduate studies in energy efficiency, renewable energy, or sustainability **are desirable**.

Technical and Functional Experience:

- A minimum of five (5) years of professional experience in the formulation and implementation of solar engineering projects and feasibility analysis of projects **is required**.
- Experience in technical, economic, and environmental feasibility studies in the industrial sector **is required**.
- Knowledge of the analysis, design, and implementation of renewable energy systems **is required**, with mandatory experience in photovoltaic systems.
- Knowledge of energy efficiency, process optimisation, and economic/financial analysis **is required**.
- Experience leading projects, developing indicators and monitoring systems, and working with multidisciplinary teams **is desirable**.

Languages: Fluency in written and spoken Spanish is required. Fluency and/or working knowledge of another official UN language, particularly English, **is desirable**.

REQUIRED COMPETENCIES***Core values:***

WE LIVE AND ACT WITH INTEGRITY: work honestly, openly and impartially.

WE SHOW PROFESSIONALISM: work hard and competently in a committed and responsible manner.

WE RESPECT DIVERSITY: work together effectively, respectfully and inclusively, regardless of our differences in culture and perspective.

Key competencies:

WE FOCUS ON PEOPLE: cooperate to fully reach our potential –and this is true for our colleagues as well as our clients. Emotional intelligence and receptiveness are vital parts of our UNIDO identity.

WE FOCUS ON RESULTS AND RESPONSIBILITIES: focus on planning, organizing and managing our work effectively and efficiently. We are responsible and accountable for achieving our results and meeting our performance standards. This accountability does not end with our colleagues and supervisors, but we also owe it to those we serve and who have trusted us to contribute to a better, safer and healthier world.

WE COMMUNICATE AND EARN TRUST: communicate effectively with one another and build an environment of trust where we can all excel in our work.

WE THINK OUTSIDE THE BOX AND INNOVATE: To stay relevant, we continuously improve, support innovation, share our knowledge and skills, and learn from one another

ANNEX 1

The consultant should conduct economic, technical, environmental, and legal/regulatory feasibility analysis at the company level. Company management will share with the consultant the required detailed information for carrying out the feasibility studies. The consultant, in coordination with company management and the GEIPP-Peru team, should collect additional information if required.

Feasibility analysis of improvement opportunities should at least include the following:

- **Technical analysis:** The technical assessment of a feasibility study should help companies determine the effectiveness of the proposed opportunities based on the assessment conducted by the GEIPP project team. Its objective is to describe the necessary elements for implementing the option and to examine potential barriers that could undermine cost-effectiveness and technology transfer. The technical analysis should include, among other aspects, the identification of the Best Available Technology (BAT) to implement the identified opportunity under the given conditions. Based on an analysis of available technologies, implementation potential, and the company's specific conditions, the consultant shall identify the most appropriate BAT. In addition, the consultant should analyse the technical conditions required to implement the identified. In the specific case of rooftop photovoltaic solutions, the technical analysis should include the assessment of existing structural conditions. For the implementation of lighting systems with standalone solar panels, the technical analysis shall focus on the appropriate selection and sizing of the system according to operational and site conditions. This includes defining the required lighting levels (lumens), the strategic placement of luminaires, and assessing solar radiation availability and exposure to ensure efficient and reliable performance. Furthermore, the analysis shall consider a comparative evaluation of available technological alternatives in the market, including technical specifications, service life, operating conditions, and supplier support. The report should include the BAT options analysed and the proposed BAT.
- **Environmental analysis:** The environmental feasibility analysis should provide a recommendation on the environmental viability of the project. This exercise should also allow for the reduction of the environmental footprint. The consultant should analyse the relevant environmental indicators for the proposed technology according to the EIP model and compare them with the current environmental performance, demonstrating the expected environmental improvement from applying the selected technology option.
- **Legal/regulatory analysis:** the consultant should identify the regulatory framework for complying with the improvement opportunity. Barriers must be detected as well as, regulatory incentives.
- **Financial analysis:** The financial analysis should determine the economic viability of the proposed technologies. Its objective is to determine whether the proposed technology change is a cost-effective project. It should identify technology costs and determine the return on investment and the payback period. At least 3 quotations should be presented for the company. This assessment must be grounded in the specific theoretical context of each model while highlighting the distinct benefits for the enterprise.

The Consultant shall identify and analyse the national tax incentives applicable to each project's development. This assessment must evaluate the impact of available fiscal benefits—such as VAT (IVA) exemptions, tariff exclusions, and income tax deductions for investments in non-conventional energy sources or energy efficiency—on the project's financial viability. The analysis should specify how these incentives optimise the ROI.

ANNEX 2

The feasibility report shall include, at a minimum, the following chapters:

1. Introduction
2. Executive summary
3. General information: Company data, responsible personnel, and team, including experience
4. Background: Identified opportunity and its indicators, scope
5. Technical proposal: Identification of suppliers, description of the solution, equipment and controls (supplier 1, 2, 3...), maintenance requirements, additional comments, considerations for savings verification, delivery timelines
6. Economic proposal: Proposed measure to be implemented, return on investment (supplier 1, 2, 3...), payment terms (supplier 1, 2, 3...)
7. Environmental proposal: CO₂eq reduction
8. Applicable legal/regulatory compliance
9. Identification and mitigation of investment risks
10. Annexes

ANNEX 3

The consultant should carry out the feasibility studies, taking into account the projects at each company within each industrial park, as follows:

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Company	Industrial Park (IP)	Opportunity
Company 1	ZOFRATACNA	Implementation of photovoltaic systems to cover part of the electricity consumption.
Company 2	ZOFRATACNA	Implementation of photovoltaic systems to cover part of the electricity consumption.
Company 3	ZOFRATACNA	Implementation of standalone solar-powered lighting systems for open areas.
Company 4	ZOFRATACNA	Implementation of standalone solar-powered lighting systems for open areas.
Company 5	ZOFRATACNA	Implementation of standalone solar-powered lighting systems for open areas.
Company 6	ZED PAITA	Implementation of standalone solar-powered lighting systems for open areas.
Company 7	ZED PAITA	Implementation of photovoltaic systems to cover part of the electricity consumption.
Company 8	PIURA FUTURA	Implementation of photovoltaic systems to cover part of the electricity consumption.
Company 9	PIURA FUTURA	Implementation of photovoltaic systems to cover part of the electricity consumption.
Company 10	ZOFRATACNA	Implementation of standalone solar-powered lighting systems for open areas.