**Terms of Reference for Consultants**

1. **Background**

 The Asian Development Bank (ADB) is setting up a technical assistance (TA) subproject which will support project preparation, policy development, and capacity building to the Ministry of Energy and Mineral Resources, PT Pertamina, the Indonesia Infrastructure Guarantee Fund, the Ministry of Finance, the Coordinating Ministry for Economic Affairs, and local governments/ municipalities involved in the projects and programs for the development of three sustainable and efficient energy sector projects and programs. These will address the cross-cutting areas of climate change and environment on sustainable energy infrastructure decreasing the growth in greenhouse gas emissions in Indonesia.

 The TA will support the preparation of the Sustainable and Inclusive Energy Program policy-based loan subprogram 3, the Renewable Energy Development Project, and a Sustainable and Efficient Sector Development Program linking policy reform with capital investments. The TA subproject will have the following outcome: improved policy measures, capacity and awareness for sustainable and efficient energy policies, and investments in on- and off-grid renewable energy generation, and municipal energy efficiency measures such as efficient street lighting and efficient building retrofits. The TA will also provide capacity building and knowledge creation for renewable energy and energy efficiency financing and medium-term clean energy planning.

 The consultant firm and experts will have extensive experience in the general energy/power sector along with deep expertise in technical as well as policy for sustainable and clean energy development. The consultants also need to have an excellent understanding of the need to balance the delivery of basic energy services with transformational policy targets and the constraints imposed by limited public sector resources as well as current market status for both renewable energy and energy efficiency. In addition, the consultants should have expert knowledge of power sector development and pricing including rural electrification planning with mini and micro-grid project implementation. Financial Consultants will also be hired in order to identify and remove investment barriers for renewable energy and energy efficiency by developing fund concepts that will enable identification of market mechanisms and incentives strategies to increase implementation of clean energy programs. There is a possibility of increased scope and extension of the consulting firm’s contract if additional financing is secured for the TA and subject to satisfactory performance of the contract.

 It is estimated that a total of 33.5 international person-months and 50 national personal-months of consulting firm services are required to undertake this work. The consultant firm team will consist primarily of electricity and clean energy specialists as well as project preparation experts on financing, procurement, and safeguards. ADB will engage the consulting firm in accordance with ADB Procurement Policy 2017, as amended from time to time and the associated Project Administration Instructions/Technical Assistance Staff Instructions.

1. **Consulting Services**

 The TA subproject will provide: improved policy measures, capacity and awareness for sustainable and efficient energy policies, investments in on- and off-grid renewable energy generation, and municipal energy efficiency measures such as efficient street lighting and efficient building retrofits. The TA will use QCBS as hiring method with a ratio of (80:20) and require full technical proposals.

 **Output 1: Policy-based loan on sustainable and inclusive energy policy program.** Under this output, the subprojectwill provide support to Indonesia for the formulation of policy and regulatory reforms that support the increase of renewable energy, energy efficiency, and electric transport investments as well as increased private sector participation via public-private partnerships (PPPs). TA Output 1 will focus on providing policy advice to relevant government ministries and agencies identifying policy and regulatory solutions to barriers for the growth of renewable energy, enhanced energy efficiency market development, and the deployment of electric vehicles and sustainable (solar) charging infrastructure. The support to the government’s clean energy policy framework formulation will concentrate on the readiness of the policy actions and triggers under the sustainable and inclusive energy program, subprogram 3, and the sustainable and efficient energy sector development program. The intention is to address the financial stability of the sector, leverage private sector investments, and further clean energy policies. The TA will provide analytical support to policy and planning design using tools such as focus group discussions, direct policy advice, expert inputs to policy development, and the review of existing policies.

 **Output 2: Energy efficiency investments.** Under the sustainable and efficient sector development program preparation, the TA will support the development of an energy efficiency investment program to enable municipalities and government contracting agencies to engage in energy efficiency savings programs with energy efficiency service companies (ESCOs) under Indonesia’s revised 2018 legislation on PPPs LKPP[[1]](#footnote-1) Regulation 29/2018, which regulates solicited PPPs. The focus will be on replacing municipal street lighting and retrofitting buildings. Related to the sustainable and efficient energy sector development program, the TA will scope the possibility to establish a guarantee fund with the Indonesia Infrastructure Guarantee Fund and capacity building for municipalities and the banking sector on project preparation and assessment of the energy efficiency projects. The fund would guarantee the savings payments from the energy efficiency project owner to the implementing ESCO and in turn make both the ESCO and the project bankable, and open access to commercial credit for the ESCOs to pre-finance the project.

 **Output 3: Renewable energy investments.** Related to the sustainable and efficient energy sector development program and the policy-based loan, the TA will also support the identification of an investment program to implement the government’s program to provide access to rural households using off-grid renewables including mini-grids and stand-alone home systems. This may include financing options to rehabilitate existing but defunct off-grid solar PV systems. It will also support the construction of utility-scale on-grid and/or captive renewable energy generation for industrial and commercial use increasing the sustainability of existing power-intensive business processes.

 **Output 4: Enhanced capacity.** In order to ensure implementation capacity of the executing agency and implementing agencies,the TA will support the identification of training and capacity building required at government agencies and relevant institutions on identifying standards, setting up baselines, addressing financial barriers, as well as institutional strengthening, and knowledge sharing related to PPPs and energy efficiency. These will also include financial experts to work with the various agencies to identify existing regulations for PPPs and energy efficiency and engage in activities that will help develop mechanisms that are relevant to the Indonesian context. Capacity-building will include gender and disability considerations related to the use of energy and electric transport.

 The qualifications and outline terms of reference for the key consultants, with a minimum level of effort, are outlined below. Key personnel listed below are required to spend at least 50% of their time in Jakarta, Indonesia.

 **Team leader and energy economist (international, 10 person-months).** The team leader should have a PhD or a master’s degree related to energy, economics, financing, or public policy and more than 15 years’ experience in the implementation of projects related to loan preparation for international financial institutions in at least 2 regions and four countries. She/He will lead the team, distribute specific tasks, and ensure full coordination between team members, lead the substantive work, and ensure quality control. She/He will also lead the discussions with the executing as well as implementing agencies and review timelines as required.

 **Electricity regulation and policy specialist (international, 5 person-months).** The international expert should preferably have a master’s degree, in energy economics and/or electrical or civil engineering, with a minimum 7 years’ professional experience including OECD countries, of which 2 years should be in Indonesia or a similar region. Experience in power sector development, renewable energy promotion, and energy pricing is desirable. The expert will:

1. support the development of new regulations on electricity wheeling;
2. provide inputs on renewable energy contracting and tariffs including business models for solar PV;
3. review electricity market design and regulatory bodies and their functions; and
4. assess solar PV, biogas, and wind project design and technologies including bidding documents.

 **Renewable electrification and mini-grid specialist** **(international, 5 person-months).** The international expert will preferably have a master’s degree in engineering or other relevant field, and at least 10 years of experience in transmission and distribution grid engineering and experience with the design, specification and installation of on and off-grid wind and solar-based systems in at least 2 regions and 4 countries including OECD area, and in power electric engineering with the design, specification, and implementation of high, middle and low voltage systems, including battery storage. The expert will:

1. review the state and planning for Indonesia’s main power grids and assess medium-term strategies to increase on- and off-grid provision of variable renewable electricity supplies;
2. prepare an assessment of the needed grid investments, improvements in grid management capabilities, and advantages and disadvantages of on- and off-grid solutions to reach 100% of electrification;
3. work closely with the electricity and renewable energy specialists and ensure consistency of the analysis and messages; and
4. establish a list of renewable sub-projects with Pertamina, the State Electricity Corporation, and the Ministry of Energy and Mineral Resources for ADB funding.

 **Energy storage and charging station specialist (international, 3.5 person-months).** The international expert should preferably have a master’s degree in energy economics and/or electrical engineering with a minimum of 10 years’ professional experience related to battery storage and charging station technology, of which 15 years should be in senior positions in energy policy formulation. The expert shall have completed three or more country sector review assignments as team leader and/or key team member. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will work on:

1. assessing storage options, costs, and opportunities in Indonesia with focus on specific regions in Eastern Indonesia;
2. provide inputs and support to the forthcoming regulation on battery storage;
3. support development of bidding documents for on- and off-grid storage;
4. provide an analysis of battery storage solutions to increase renewable energy supply while safeguarding grid stability; and
5. work closely with the electric vehicle specialist to develop feasibility study and ensure consistency of the analysis and messages.

 **Energy efficiency measures implementation specialist (international, 5 person-months).** The international expert should preferably have a master’s degree in energy economics and/or electrical engineering with a minimum of 20 years’ professional experience, of which 15 years should be in senior positions in energy policy formulation. The expert shall have completed three or more country sector review assignments as team leader and/or key team member. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will review policies and programs on:

1. Energy efficiency project implementation, standards, M&V and enforcement for government projects;
2. Joint public-private approaches for energy-efficiency financing and enabling energy efficiency service companies market development;
3. Testing and implementation of minimum energy performance standards for household appliances; and
4. Improving energy efficiency in urban transport systems.

 **Clean energy financing and guarantee specialist (international, 3 person-months).** The international expert should preferably have a master’s degree in energy finance and/or public finance with a minimum of 10 years’ professional experience, of which 5 years should be in positions in the structuring and provision of clean energy finance and guarantees. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will work on:

1. engaging with various stakeholders to understand and address financial risks and barriers;
2. design and implementation of mechanism with relevant financial instruments such as joint guarantee fund for clean energy projects; and
3. identify pathways for creation of bankable projects in renewable energy and energy efficiency.

 **Electric vehicle specialist (international, 2 person-months).** The international expert should preferably have an engineering or other relevant field, and at least 10 years of professional experience, of which 5 years should be in senior positions in energy policy formulation with some focus on electric vehicles. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will review policies and programs on:

1. help understand costs, and opportunities for electric vehicle implementation in Indonesia with focus on specific cities;
2. assess regulatory support required for electric transportation infrastructure and analyze economic benefit;
3. provide inputs and support to the forthcoming regulation on electric vehicles;
4. provide a feasibility study for electric vehicles and charging stations; and
5. work closely with the battery storage and charging specialist on the study and ensure consistency of the analysis and messages.

 **Environmental safeguards specialist (national, 5 person months).** The national expert should preferably have a master’s degree in environmental engineering with a minimum of 10 years’ professional experience, of which 5 years should be in positions related to environmental safeguards assessments with bi- or multilateral donors. The expert shall have completed three or more safeguards project assignments as team leader and/or key team member. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will assess the safeguards impact of the loan projects to be prepared under this TA.

 **Social safeguards and gender specialist (national, 4 person months).** The national expert should preferably have a master’s degree in social policy and gender studies with a minimum of 10 years’ professional experience, of which 5 years should be in positions related to social safeguards and gender assessments with bi- or multilateral donors. The expert shall have completed three or more safeguards project assignments as team leader and/or key team member. Experience in Emerging Asia or comparable middle-income countries in Latin America, Africa, or the Middle East is important. Specifically, the expert will assess the social and gender impact of the loan projects to be prepared under this TA and advise on gender barriers to be overcome and possibilities to empower women.

 **Renewable** **energy specialist (national, 8 person-months).** The specialist should preferably have a master’s degree, in public policy or international relations or a similar field, with a minimum 15 years’ professional experience in providing policy recommendations and guidance to governments on clean and sustainable energy matters. The Specialist will:

1. provide inputs on key policy changes and regulations required for renewable energy development in Indonesia;
2. analyze the potential for renewable energy additions per power system in Indonesia and liaise closely with the land specialist on cost and land availability;
3. identify major obstacles and drivers that impede renewable energy development and outline actions to create a conducive environment for renewable energy development within the regulatory and financial context of the power sector and the country; and
4. identify the policy and regulatory changes required in Indonesia’s financial, economic, and sub-national policy and regulatory environment to promote the implementation of renewable and energy efficiency projects.

 **Procurement specialist (national, 3 person-months).** The Procurement Specialist should have a degree in finance, accounting, business administration, or related field, with a minimum of 10 years’ experience in competitive procurement rules of international organizations and in the assessment of the procurement systems of state-owned enterprises and national government agencies. She/He will lead the assessment of the Executing and Implementing Agencies’ procurement frameworks regarding compliance with ADB rules and regulations and support capacity building of counterpart staff. She/He will have at least 10 years’ experience in procurement and 5 years’ experience in applying the procurement rules of international organizations.

 **Finance and asset specialist (national, 6 person-months).** The finance and asset specialist will undertake an assessment of the Executing and Implementing Agencies financial management systems regarding compliance with ADB’s financial management rules and regulations, undertake a financial assessment of the assets included in the project scope, and provide counterpart capacity building to fully understand compliance with ADB rules and regulations. She/He will have at least 10 years’ experience in financial management and 5 years’ experience in applying the procurement rules of international organizations.

 **Program coordinator (national, 24 person-months).** The Program Coordinator should have a degree in energy policy and economics, political science, or public relations and a minimum of 5 years’ experience in working with government and in coordinating international or bilateral donor projects. The Coordinator will ensure coordination and communication between the consultant team, the ADB, and the Executing and Implementing Agencies. Lead the timely and regular reporting of project milestones and updates to all parties involved and support the specialist team with research, policy updates, translation of official documents, editing, and conference and meeting organization.

1. **Major Outputs and Activities per Project**

| **Project** | **Major Outputs and Activities** |
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| Sustainable and Inclusive Energy Program, Subprogram 3 policy preparation support | 1. Provide inputs to policy matrix and assess support needed to achieve the policy actions
2. Support the government on the design and implementation of financing frameworks for clean energy
3. Provide inputs to the regulatory design of renewable energy market design especially rooftop solar
4. Provide technical inputs to battery storage standards and regulations for deployment
5. Support the drafting of implementing guidelines for electric vehicles
6. Inform the establishment of a clear business model and regulation for mini grids
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| Renewable Energy Loan | 1. Assess Pertamina’s pipeline for renewable energy and estimate financing needed
2. Establish a first project list based on a safeguard assessment
3. Undertake an assessment of Pertamina’s financial and procurement frameworks
4. Assess economic, climate, and financial impact of the project
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| Sector Development Program: Energy efficiency and Clean Energy (microgrids) | 1. Analyze the Ministry of Energy and Mineral Resources’ project pipeline for off-grid renewable energy
2. Undertake a rapid safeguard assessment of the pipeline
3. Analyze a project pipeline on energy efficiency with municipalities and government contracting agencies
4. Build capacity with the relevant institutions involved a potential energy efficiency financing scheme
5. Analyze the feasibility of electric bus routes and draft an implementation plan
6. Assess the financial, procurement, and safeguard capacity of the Ministry of Energy and Mineral Resources
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| Capacity-Building  | 1. Build planning and modeling capacity in the Ministries and State Electricity Corporation
2. Refine mapping of renewable energy in Indonesia
3. Support increased public opinion surveys to assess policy priorities
4. Provide best practice models for electricity sector restructuring
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1. Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah. [↑](#footnote-ref-1)