



Technical Assistance Report

Project Number: 52152-003
Transaction Technical Assistance Cluster (C-TRTA)
November 2019

Republic of Indonesia: Sustainable Infrastructure Assistance Program Phase II

Subproject 3: Supporting Sustainable and Universal Electricity Access Phase 2

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CURRENCY EQUIVALENTS

(as of 5 November 2019)

Currency unit	–	rupiah (Rp)
Rp1.00	=	\$0.00007
\$1.00	=	Rp14,034

ABBREVIATIONS

ADB	–	Asian Development Bank
COBP	–	Country Operations Business Plan
EGDP1	–	Electricity Grid Development Program
EGDP2	–	Electricity Grid Development Program Phase 2
EGSS	–	Electricity Grid Strengthening—Sumatra Program
GDE	–	PT. Geo Dipa Energi (Geo-Thermal Energy)
GDIP	–	Gas Distribution Infrastructure Project
GPGP	–	Geothermal Power Generation Project
GW	–	gigawatt
kV	–	kilovolt
PGSP	–	Power Generation Sector Project
PLN	–	PT. Perusahaan Listrik Negara (State Electricity Corporation)
PTSP	–	Power Transmission Sector Project
RUPTL	–	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Power Supply Business Plan)
SEAEI	–	Sustainable Energy Access in Eastern Indonesia
SIAP1	–	Sustainable Infrastructure Assistance Program
SIAP2	–	Sustainable Infrastructure Assistance Program Phase II
SREAP	–	Sustainable and Reliable Energy Access Program
TA	–	technical assistance

NOTE

In this report, "\$" refers to United States dollars.

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TRANSACTION TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 52152-003
Project Name	Supporting Sustainable and Universal Electricity Access	Department/Division SERD/SEEN
Nature of Activity	Project Preparation	Executing Agency P.T. Perusahaan Listrik Negara
Modality	Subproject	
Country	Indonesia	
2. Sector	Subsector(s)	ADB Financing (\$ million)
		Total 0.00
3. Operational Priorities		Climate Change Information
✓ Addressing remaining poverty and reducing inequalities		CO ₂ reduction (tons per annum) 8,000
✓ Accelerating progress in gender equality		Climate Change impact on the Project Low
✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability		Cofinancing
✓ Strengthening governance and institutional capacity		Adaptation (\$ million) 1.50
		Mitigation (\$ million) 1.50
Sustainable Development Goals		Gender Equity and Mainstreaming
SDG 1.1		Some gender elements (SGE) ✓
SDG 5.4		
SDG 7.1, 7.a		Poverty Targeting
SDG 13.a		Geographic Targeting ✓
4. Risk Categorization	Risk Categorization does not apply	
5. Safeguard Categorization	Safeguard Policy Statement does not apply	
6. Financing		
Modality and Sources		Amount (\$ million)
ADB		0.00
None		0.00
Cofinancing		3.50
Government of Australia (Full ADB Administration)		3.50
Counterpart		0.00
None		0.00
Total		3.50
Currency of ADB Financing: US Dollar		

I. THE TECHNICAL ASSISTANCE SUBPROJECT

A. Justification

1. The proposed transaction technical assistance (TA), a subproject under the transaction TA cluster (C-TA 0040-INO) Sustainable Infrastructure Assistance Program Phase II (SIAP2) is designed as a TA facility to prepare and support a range of sovereign project, sector, and results-based loans aimed to enhance access to sustainable and universal electricity services across Indonesia. The proposed TA continues, and builds on, the support provided through TA 9113-INO and TA 9559-INO under SIAP Phase 1 (C-TA 0013-INO).¹

2. SIAP2 was approved on 29 November 2018 and is due to close on 30 June 2024. SIAP2 provides (i) project preparation support to specific ensuing infrastructure projects listed in the Asian Development Bank's (ADB's) current and future country operations business plans for Indonesia; (ii) implementation and capacity-building support to specific ongoing ADB-funded infrastructure projects; and (iii) knowledge and policy advisory support in the areas of infrastructure planning and financing, together with program management support for effective SIAP2 implementation.² As of 11 November 2019, total approvals are \$9,500,000 (32% of total funds), and there are no disbursements so far. As of 11 November 2019, SIAP2 has an available balance of \$20,500,000.³

3. The proposed TA subproject under SIAP2 is included in the Country Operations Business Plan (COBP) 2019–2021⁴ and is consistent with the Country Partnership Strategy 2016–2019 priorities of increasing sustainable energy access across the country, promoting clean energy, and supporting reforms to accelerate infrastructure investment.⁵ The proposed TA subproject supports ADB's Strategy 2030 OP1 (addressing remaining poverty and reducing inequalities); OP2 (accelerating progress in gender equality); OP3 (tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability); OP4 (making cities more livable); OP5 (promoting rural development and food security); and OP6 (strengthening governance and institutional capacity).

4. **Country context.** Indonesia's economy is the largest in Southeast Asia and the world's seventh largest in terms of purchasing power parity in 2018.⁶ Indonesia has made steady progress in reducing the national poverty rate from 19.1% in 2000 to 9.7% in 2018 and lifting 13.1 million people out of poverty. It experienced consistent growth, averaging 5.0% per year during 2011–2018. Strong investment has been driven largely by public infrastructure projects in transportation and energy.⁷ Improved access to affordable, reliable, and sustainable forms of energy is critical to support the government's focus on human capital and high-level technology

¹ ADB. 2016. *Technical Assistance for Strengthening Verification in Results-Based Programs in Indonesia's Power Sector*. Manila (TA 9113-INO); ADB. 2018. *Technical Assistance for Supporting Sustainable and Universal Electricity Access in Indonesia*. Manila (TA 9559-INO); and, ADB. 2018. *Technical Assistance Cluster for Sustainable Infrastructure Assistance Program in Supporting Sustainable and Universal Electricity Access in Indonesia*. Manila (C-TA 0013-INO).

² As of November 2019, two subprojects (Knowledge and Support Technical Assistance for Innovative Infrastructure Financing, Infrastructure Planning, and Program Management Support; and Transaction Technical Assistance Cluster for Supporting Sustainable and Efficient Energy Policies and Investments) have been approved under SIAP2.

³ Includes set asides for foreign exchange loss and ADB administration fees of \$5,691,700.

⁴ ADB. 2018. *Country Operations Business Plan: Indonesia, 2019-2021*. Manila.

⁵ ADB. 2016. *Country Partnership Strategy: Indonesia, 2016-2019*. Manila.

⁶ International Monetary Fund. 2019. *World Economic Outlook Database*. Washington, DC.

⁷ ADB. 2019. *Asian Development Bank Outlook 2019*. Manila.

development in the country's existing economic hubs, as well as to transform previously underserved parts of Indonesia into new economic growth engines with a focus on high-value agriculture, fisheries, small- and medium-sized enterprises, and tourism, all of which rely on a stable energy supply.

5. **Sector context.** The government has prioritized electricity access by adding generation capacity and expanding power grids to raise the national electrification ratio from 89% in 2016 to a target of near 100% by 2024.⁸ The power grids across the islands in Eastern Indonesia are isolated, of poor quality, underdeveloped, and present the greatest challenge to the achievement of this target. The electrification ratios in some eastern provinces are particularly low between 60-75% across provinces in Maluku, Nusa Tenggara, Papua, and Sulawesi. Moreover, these areas are mainly serviced, if at all, by diesel-fired generators which are inefficient, polluting, and expensive. Additionally, electrification can often refer to one or two lightbulbs per household, meaning overall access is still very low. Power disruptions due to supply shortages are common and household consumption levels remain suppressed. Transition to using natural gas, combined with variable renewable energy such as solar and wind; expanded distribution systems; reduction in overloading; and addressing reliability issues for the local population will expand access to modern and cleaner energy services across Indonesia. In electrified regions, such as Java, the government is emphasizing service reliability, quality, and increased use of renewable energy. This requires strengthening of the power grid which suffers from overload, low voltage, frequent interruptions and electricity losses that jeopardize business investment and social services, and increase economic costs and carbon dioxide (CO₂) emissions. The need for grid strengthening was further demonstrated by the cascading power failure and massive blackout that occurred in August 2019.⁹

6. To address these priorities, the government and ADB agreed under the COBP to a series of investment projects and programs with the State Electricity Cooperation (*Perusahaan Listrik Negara*, or PLN) and Geo Dipa Energi (GDE). The proposed TA subproject will provide support for the preparation, capacity building, and results verification required under these investments.

B. Outputs and Activities

7. The TA subproject will provide technical support and capacity building in rural electrification and clean energy, and project preparation for eight lending projects detailed in Appendix 2. All loans are part of a programmatic approach to help achieve universal access to sustainable and modern energy services throughout Indonesia as envisioned in the National Energy Plan 2017 and the Electricity Power Supply Business Plan 2019–2028 (footnote 8).

8. **Output 1: Power sector projects and programs prepared.** Technical expertise will be provided to prioritize, plan, and prepare a series of investment projects for potential ADB financing, including: Sustainable Energy Access in Eastern Indonesia (SEAEI)—Power Generation Sector Project (PGSP); SEAEI—Electricity Grid Development Program Phase 2 (EGDP2); SEAEI—Power Transmission Sector Project (PTSP); Sustainable and Reliable Energy Access Program (SREAP); Geothermal Power Generation Project (GPGP); and Gas Distribution Infrastructure Project (GDIP). The TA will enhance the efficiency of project preparation, address common issues among the projects, and reduce the transaction costs through minimizing the need for stand-alone

⁸ Government of Indonesia. National Energy Plan 2017. <https://www.esdm.go.id/assets/media/content/content-rencana-umum-energi-nasional-ruen.pdf>; and PLN. 2019. *Electricity Power Supply Business Plan (RUPTL) 2019-2028*. Jakarta.

⁹ Faulty electricity networks caused a major blackout in Jakarta, West Java, and Banten provinces on 5 August 2019.

transaction TAs. Detailed activities will include, as required: (i) feasibility studies; (ii) economic analysis; (iii) financial evaluation and financial analysis; (iv) financial management assessments; (v) procurement assessments, procurement plans, and preparation of bidding documents; (vi) gender analysis, collection of baseline data, and gender action plans; (vii) risk assessment and management plans; and (viii) safeguards documentation on environment, involuntary resettlement, and indigenous peoples. The TA will provide support for the use of results-based lending (RBL) programs to expand power distribution systems, enhance clean energy and energy efficiency, and strengthen institutional capacity. Special attention will be given to involve women in the design and operation and maintenance of communal electricity systems as well as training modules on how to use electricity efficiently and productively. It will also support the scaling up of renewable energy use, including geothermal, solar, microhydro, biogas, and other sources.

9. **Output 2: Innovation and institutional capacity enhanced.** The TA will support the implementation of loan components on technological innovation, safeguards, institutional strengthening, and coordination among key stakeholders particularly in relation to the SEAEI—Electricity Grid Development Program (EGDP1), EGDP2, PTSP, SREAP, GPGP, and GDIP. Experts will also provide technical support across the projects, accelerating the implementation of power generation subprojects as well as providing specialized technical inputs for renewable energy initiatives, and transmission and distribution projects. The technical experts will support the development of smart grid guidelines, and safeguards specialists will support to improve waste management and stakeholder consultation practices. They will also provide inputs to the implementation of pilot projects and scaling up of high-level technologies, such as solar–gas hybrid plants, battery energy storage, and electric vehicle charging. The TA will also support collaboration between PLN, GDE, government ministries, and other key stakeholders for policy and regulatory development and energy sector planning.

10. **Output 3: Verification of RBL programs strengthened.** The TA will support the independent verification of achievements and progress of RBL program results indicators and program actions, and provide technical expertise to strengthen PLN's internal verification systems and processes. The independent verification agent (IVA) will continue verification of achievement of results indicators and program actions for the two ongoing RBL programs, the Electricity Grid Strengthening—Sumatra Program (EGSS) and EGDP1 from 1 January 2020 until 30 June 2022; and commence verification for the proposed EGDP2 and SREAP upon loan effectiveness. The IVA will verify results through financial audit, procedural verification, and physical inspection that will test the accuracy and quality of results claimed by PLN. In accordance with good audit practice, physical verification will take place against a sampling framework and frequency. The IVA will use the verification protocols of the ongoing RBLs as the basis for preparation of a program results verification report that will be submitted by PLN to ADB and cofinanciers.¹⁰ The IVA will also adopt monitoring and evaluation practices in line with international standards when conducting audits or other work as appropriate.

C. Cost and Financing

11. The TA is estimated to cost \$3,570,000, of which \$3,500,000 will be financed on a grant basis by the Government of Australia through the Department of Foreign Affairs and Trade and administered by ADB. The government will provide counterpart support in the form of communication facilities, venue for workshops/ meetings, and other in-kind contributions. The

¹⁰ EGSS is cofinanced with the World Bank, and EGDP1 is expected to be cofinanced with KfW. The IVA conducts joint-verification of the results indicators and program actions for the cofinanciers.

detailed cost estimates and financing plan are shown in Appendix 1. The government was informed that approval of the TA does not commit ADB to finance any ensuing project.

D. Implementation Arrangements

12. Concept papers for SREAP and GDIP are expected to be approved in the second half of 2019 and first half of 2020, respectively.

13. ADB will select, supervise, and evaluate the consultants' outputs for the respective loan projects. PLN will be the executing agency, with PLN and GDE as the implementing agencies. ADB will administer the TA and be responsible for consultant recruitment in consultation with PLN and GDE. PLN and GDE will mobilize their staff to participate in undertaking analytical work and provide documents, mission facilitation, and other support to carry out the TA activities.

14. The implementation arrangements are summarized in Table 1.

Table 1: Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	November 2019–June 2024		
Executing agency	PLN		
Implementing agencies	PLN and GDE		
Consultants	To be selected and engaged by ADB		
	Firm 1: Engineering	66 person-months	\$1,100,000
	Firm 2: Environment and Social safeguards	40 person-months	\$550,000
	Firm 3: IVA for RBL programs	90 person-months	\$900,000
	Individual consultants	72 person-months	\$500,000
Advance contracting	Yes		
Procurement	ADB will engage consultants and all technical assistance financed goods shall be procured in accordance and with ADB Procurement Policy (2017, as amended from time to time) and the associated Staff Instructions.		
Disbursement	The TA resources will be disbursed following ADB's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		

ADB = Asian Development Bank, GDE = Geo-Dipa Energi, IVA = independent verification agent, PLN = State Electricity Corporation, RBL = results-based lending, TA = technical assistance.

15. **Consulting services.** The consultants will be recruited in accordance with the ADB Procurement Policy (2017, as amended from time to time) and the associated staff instructions. The TA will re-engage Castlerock Consulting Pte Ltd. through single source selection to carry out independent verification of RBL programs implemented by PLN.¹¹ Other consulting firms and individual consultants competitively selected under TA 9113-INO or TA 9559-INO may be considered for direct appointment using single source selection for assignments under this TA (i) if the assignment is a natural extension of the awarded contract, and (ii) subject to satisfactory performance of the consultant under such contract.

16. Appendix 2 includes a description of the ongoing and ensuing projects to be supported under the proposed TA subproject, and the allocation of consultant inputs to each project.

¹¹ Castlerock Consulting Pte Ltd. was selected through quality- and cost- based selection under TA 9113-INO (footnote 1), and has conducted independent verification for EGSS since 2016 and for EGDP1 since 2018.

SUBPROJECT COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Government of Australia^a	
A. Consultants	
1. Remuneration and per diem	
a. International consultants	1,885
b. National consultants	892
2. Out-of-pocket expenditures	
a. International and local travel	273
B. Training, seminars, and conferences	
1. Venue rental and related facilities	100
C. Contingencies	350
Total	3,500

^a Administered by the Asian Development Bank.

Note: The technical assistance (TA) subproject is estimated to cost \$3,570,000, of which \$3,500,000 will be financed by the Government of Australia through the Department of Foreign Affairs and Trade under the cluster TA on Sustainable Infrastructure Assistance Program Phase II (C-TA 0040-INO). The details are presented in the table above. The government will provide counterpart support in the form of communication facilities, and other in-kind contributions. The value of government contribution is estimated to account for 2.0% of the total TA cost.

Source: Asian Development Bank estimates.

PROJECTS UNDER TECHNICAL ASSISTANCE
Indicative Consultants' Inputs Allocation (person-months)

Position title	Project/programs and person-month allocations								
	EGSS	EGDP	PGSP	EGDP 2	GPGP	PTSP	SREAP	GDIP	Total
Consultants' Position									
A. IVA Firm (Castlerock)									
1. International									
Team Leader	0.5	3.4		7.0			5.5		16.4
Environment Specialist	0.4	2.1		4.5			3.5		10.5
2. National									
Senior Associate/Analyst (Deputy TL)	0.5	3.3		6.8			5.3		15.9
Power Engineer	0.4	2.1		4.5			3.5		10.5
Research Analyst	0.5	3.3		6.8			5.3		15.9
Environment Specialist	0.4	2.1		4.5			3.5		10.5
Social Specialist	0.4	2.1		4.5			3.5		10.5
Subtotal	3.1	18.4		38.6			30.1		90.2
B. Safeguards Firm									
1. International									
Senior Environment Specialist				3.0			2.0	2.0	7.0
Environment Specialist			2.0	3.0			1.0	2.0	8.0
Social Safeguards Specialist			4.0				2.0	1.0	7.0
2. National									
Environment Specialist(s)			2.0	5.0			1.0		8.0
Social Safeguards Specialist(s)			5.0	3.0			2.0		10.0
Subtotal			13.0	14.0			8.0	5.0	40.0

Position title	EGSS	EGDP	PGSP	EGDP 2	GPGP	PTSP	SREAP	GDIP	Total
Consultants' Position									
C. Engineering Firm									
1. International									
Power Engineer(s)			8.0	2.0			2.0	4.0	16.0
Transmission Engineer						8.0			8.0
Smart Grid Engineer (BESS & EV-Charging)				2.0			3.0		5.0
Impact Evaluation Specialist				4.0					4.0
Financial Specialist							0.5		0.5
Energy Economist							0.5		0.5
Procurement Specialist			2.0	2.0			1.0		5.0
2. National									
Power Engineer(s)				9.0			9.0		18.0
Smart Grid Engineer				2.0					2.0
Financial / Asset Analyst				7.0					7.0
Subtotal			10.0	28.0		8.0	16.0	4.0	66
D. Individual Consultants									
Program Coordinator (full time)		9.0	9.0	9.0			9.0	9.0	45.0
Geothermal Engineer					2.0				2.0
National Procurement Specialist			1.0	1.0			3.0		5.0
Research Associate				5.0	5.0	5.0	5.0		20.0
Subtotal		9.0	10.0	15.0	7.0	5.0	17.0	9.0	72
TOTAL	3.1	27.4	33.0	92.6	7.0	13.0	70.1	22.0	268.2

BESS = Battery Energy Storage System, EGDP = Electricity Grid Development Program, EGDP2 = Electricity Grid Development Program Phase 2, EGSS = Electricity Grid Strengthening–Sumatra Program, EV = electric vehicle, GDIP = Gas Distribution Infrastructure Project, GPGP = Geothermal Power Generation Project, PGSP = Power Generation Sector Group, PTSP = Power Transmission Sector Project, SREAP = Sustainable and Reliable Energy Access Program, TL = team leader.

PROJECTS UNDER TECHNICAL ASSISTANCE FACILITY

A. Electricity Grid Strengthening—Sumatra Program (EGSS)

1. The EGSS results-based lending (RBL) program financed by ADB (\$575 million) and the ASEAN Infrastructure Fund (\$25 million) and the World Bank's \$500 million power distribution Program for Results (PforR) support PLN's program on strengthening of the Sumatra grid. The EGSS program covers both transmission and distribution while the PforR focuses entirely on distribution. The outcome of the EGSS is adequacy and reliability of power supply achieved for Sumatra. The outputs are (i) existing transmission system strengthened and expanded; (ii) existing distribution system strengthened and expanded; and (iii) performance management and implementation improved. The independent verification of the disbursement-linked indicators and program action plan for the EGSS program and PforR is currently supported under SIAP 1. The program will end its implementation phase in December 2019 and will require verification of the achieved results during the first half of 2020 to be supported under SIAP2.

B. Sustainable Energy Access in Eastern Indonesia (SEAEI)—Electricity Grid Development Program (EGDP1)

2. EGDP1 covers Sulawesi-Nusa Tenggara – approved 2017, ongoing up to 2021 (currently supported under SIAP1). The program will contribute to PLN's overarching power development plans for Eastern Indonesia as identified in the RUPTL. A more robust and expanded distribution network will increase reliability of services with existing residential customers and businesses and connect new customers to drive economic activity. The expected outcome of the RBL program is expanded access to more reliable electricity services for residential, commercial, and industrial customers in the Eastern Indonesian provinces of West Nusa Tenggara, East Nusa Tenggara, and the six provinces in Sulawesi. The outcome is linked to the results areas in the national electricity results framework while the key performance indicators for the RBL program outcome are consistent with those used by PLN in their own results areas or tracking of performance indicators (increase in customers, electricity sales growth, and frequency of feeder line interruptions). The program is expected to be cofinanced with KfW.

C. SEAEI—Electricity Grid Development Program Phase 2 (EGDP2)

3. As a follow-on to EGDP1, EGDP2 is an RBL program and will support power distribution operations in Kalimantan, Maluku, and Papua. The program is included in the COBP 2019-2021 for \$600 million. The outcome is equitable access to electricity for the population in Kalimantan, Maluku, and Papua. The outputs include sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua, through increased power generation capacity, power transmission and distribution systems strengthened, and increased share of renewable energy, strengthened institutional capacity, and enhanced social monitoring.

D. SEAEI—Power Generation Sector Project (PGSP)

4. The PGSP project will support multiple small- to medium-sized natural gas-fired power plants across Eastern Indonesia. It will help move the country away from using highly polluting and expensive diesel fuel and transition to using natural gas, combined with variable renewable energy such as solar and wind. The project is included in the Indonesia COBP 2019-2021 for \$375 million from ADB regular OCR and \$25 million from the ASEAN Infrastructure Fund. The outcome of the project will be expanded access to modern and cleaner energy services in Eastern Indonesia. The outputs are (i) gas-fired generation capacity in Eastern Indonesia installed; (ii) pilot gas-solar

hybrid power generation units installed, and (iii) institutional capacity enhanced for the utilization of natural gas for small- to midscale power generation and operation of gas-solar hybrid systems. The project is currently supported under SIAP 1 and will require continued support particularly in the areas of safeguards and procurement moving into the implementation phase.

E. SEAEI—Power Transmission Sector Project (PTSP)

5. The project aims to support the development of 70 kV, 150 kV, and possibly higher voltage transmission systems (e.g. 275 and 500 kV) across Eastern Indonesia. The project is listed in Indonesia COBP 2019-2021 for \$500 million. Outputs include rehabilitation, upgrading, expansion, and installation of transmission lines and substations in the provinces across Kalimantan, Sulawesi, Nusa Tenggara, Maluku and Papua. The aim is to enhance the reliability and efficiency of electricity services through the strengthening and expansion of transmission systems.

F. Geothermal Power Generation Project (GPGP)

6. GPGP aims to support expansion of two geothermal power plants in Java, which will contribute to Indonesia's efforts to increase renewable energy use and reduce greenhouse gas emissions. The outcome will be increased power generation from geothermal resources and lower carbon emissions. The outputs include the construction and commissioning of additional geothermal generating capacity at two existing geothermal power plants of 55 megawatts each. A transaction TA and the proposed \$300 million regular OCR allocation for the project are included in the COBP 2019-2021.

G. Sustainable and Reliable Energy Access Program (SREAP)

7. SREAP is an RBL program targeted for approval in 2021. The program supports the improvement of power supply reliability and electricity quality services in Western and Central Java. The program will also include innovative and high-level technologies such as automation of medium voltage feeders, battery energy storage systems, and electric vehicle charging infrastructure. The total program size is about \$1.8 billion with \$300 million from ADB, the detailed program amounts of which will be decided during the program preparation. Consultancy services are required to update PLN's system assessments to use RBL (e.g. procurement, financial management, monitoring and evaluation), and for technical inputs to the battery energy storage system, electric vehicle charging infrastructure, and power distribution feeder automation components. The program is included in the draft COBP 2020-2022 for approval in 2021.

H. Gas Distribution Infrastructure Project (GDIP)

8. GDIP aims to expand access to modern and cleaner energy in Eastern Indonesia, building on SIAP 1-supported Eastern Indonesia Power Generation Sector Project (PGSP). This follow-up loan will focus on the development of LNG transport, storage and distribution capacity in Eastern Indonesia, further supporting the power generation facilities installed under PGSP and other gas fired power plants currently under construction and planned within the region. The project is included in the COBP 2019-2021 for \$500 million.

TERMS OF REFERENCE FOR CONSULTANTS

I. BACKGROUND

1. The Asian Development Bank (ADB) seeks to hire a multi-disciplinary team of experts comprising international and national consultants for the technical assistance (TA) subproject of Supporting Sustainable and Universal Electricity Access in Indonesia Phase 2. This TA will support project preparation and implementation for a series of lending projects and programs, including but not limited to: (i) the Electricity Grid Strengthening—Sumatra Program (EGSS), (ii) the Sustainable Energy Access in Eastern Indonesia (SEAEI)—Electricity Grid Development Program (EDGP1), (iii) the SEAEI—EGDP Phase 2 (EGDP2), (iv) the SEAEI—Power Generation Sector Project (PGSP), (v) SEAEI — Power Transmission Sector Project (PTSP), (vi) the Geothermal Power Generation Project (GPGP), (vii) the Sustainable and Reliable Energy Access Program (SREAP), and (viii) the Gas Distribution Infrastructure Project (GDIP).

2. These projects and programs will require technical, financial, economic, environment, social, governance, and legal and regulatory due diligence during preparation, and capacity building particularly for technology and process innovation and strengthening of gender and social impacts and monitoring. The result-based lending (RBL) programs will require independent verification of achievements and progress against results indicators and program actions. Consulting firms will be selected and engaged, supplemented by individual consultants, to carry out the tasks under the following terms of reference.

3. ADB will select, supervise, and evaluate consultants' outputs for the respective loan projects. PLN will be the executing agency with PLN and Geo Dipa Energi (GDE) as the implementing agencies. TA proceeds will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

4. PLN and GDE will assist the consultant in data gathering, including available reports, studies, transmission and distribution plans, standards, rules and regulations, and other pertinent data. PLN and GDE will provide and make available to the consultants the following: counterpart staff/technical support; meeting rooms as required; assistance in arrangement for workshops, meetings, and field visits; and access to required data, maps and other relevant information subject to confidentiality restrictions. The consultant will be responsible for personal computer and other facilities for producing reports. The consultant, with support of the implementing agencies, will organize and administer the training, consultation workshops.

II. CONSULTING SERVICES

I. Transmission and Distribution Engineering Firm

1. Objective and Purpose of Assignment

5. This TA will recruit a power transmission and distribution consulting firm (the T&D firm) to conduct due diligence and prepare the relevant loan documents in accordance with ADB's requirements for approval by ADB and the government. The T&D firm will carry out technical due diligence and prepare the relevant loan documents in coordination with the Safeguards firm to be recruited under this TA, as well as provide ongoing support during the loan implementation phase.

2. Scope of Work

6. The T&D firm will confirm the rationale and priority of the subproject(s) proposed for transmission and distribution components respectively, for inclusion into the scope of each project and program, based on latest the government's power development plan(s), in particular the national medium-term development plan (RPJMN) and the PLN's electricity power supply business plan (RUPTL).

7. For project loans, the T&D firm will (i) undertake technical capacity assessment; (ii) prepare technical design and cost estimates for subprojects, propose appropriate contract packaging and procurement plans; (iii) conduct economic and financial due diligence; (iv) undertake governance assessment; (v) prepare outline engineering design and draft bidding documents; (vi) prepare relevant documents for reference in drafting the Report and Recommendation to the President and its linked documents; and (vii) provide technical supports to PLN as needed.

8. For RBL loans, the T&D firm will (i) study ADB's RBL requirements and latest approved RBLs; (ii) recommend disbursement-linked indicators (DLIs) and other results indicators; (iii) prepare program action plans; (iv) conduct technical and system assessments; (v) prepare relevant reference documents for the Report and Recommendation to the President and its linked documents; and (vi) provide technical support to PLN as needed.

9. The outline of key tasks is as follows:

Table 1: Outline of Key Tasks

No.	Task Title	Key Tasks	Remarks
1	Project rationale	<ul style="list-style-type: none"> Review the latest T&D plans and update as required Discuss with PLN on prioritization of T&D projects Prepare a write up highlighting the importance of the proposed project components and subprojects containing quantitative information. 	Project loan and RBL loan
2	Technical appraisal and cost estimates	<ul style="list-style-type: none"> Prepare conceptual design including technical specifications and bill of quantities, and propose technical solution for T&D components. Prepare detailed cost estimates for each subproject under T&D components Prepare detailed cost estimates for each component Prepare estimates for project operation and maintenance costs by component and by subprojects Prepare physical contingencies Propose appropriate subproject bid packaging Prepare a draft procurement plan Prepare an implementation plan and schedule Prepare evaluation and qualification criteria to be applied to the potential bidders 	Project loan
3	Climate change impact, risk analyses, and climate financing	<ul style="list-style-type: none"> Conduct accounting of GHGs emissions associated with projects and programs Calculate net GHGs emission associated with projects and programs Compute estimated mitigation finance based on additional costs of reducing net GHGs emissions Propose adaptation measures including engineering and non-engineering adaptation measures for the project design, if any Calculate climate financing under the projects and programs 	Project loan and RBL loan
4	DLIs and Program Action Plan	<ul style="list-style-type: none"> Recommend disbursement-linked indicators and other results indicators 	RBL loan

No.	Task Title	Key Tasks	Remarks
		<ul style="list-style-type: none"> • Prepare program action plans based on assessments for program technical soundness, fiduciary aspects, procurement system, monitoring and evaluation system, governance, and DLI verification 	
5	Bidding documents	<ul style="list-style-type: none"> • Prepare complete set of Bidding document(s) to include commercial and technical components in accordance with procurement plan and ADB regulations and ADB Standard Bidding Document (2018, Procurement of Goods and Works) • Prepare appropriate subproject packaging • Prepare implementation plan and schedule 	Project loan
6	Implementation Support	<ul style="list-style-type: none"> • Provide ongoing support during the loan implementation phase, • Monitoring targets throughout implementation period • Ongoing technical support to PLN 	Project loan and RBL loan
7	Miscellaneous	<ul style="list-style-type: none"> • Perform on the job training with counterpart staff and organize project workshops as required • Draft appropriate sections of ADB project document RRP and linked documents. 	Project loan and RBL loan

3. Detailed Tasks and Expected Output

10. **Transmission Engineer– (international, 8 person-months [PM]).** The expert will carry out its tasks to support *the Power Transmission Sector Project (PTSP)* in the development of 70 kV, 150 kV, and higher voltage power transmission systems across Indonesia including rehabilitation, upgrading and expansion of transmission lines and substations. Detailed tasks include, but not limited to the following:

- (i) Review proposed 70 kV, 150 kV, and/or higher voltage transmission projects by PLN and technical viability of the projects based on RUPTL;
- (ii) Assess regional power demand forecasts and provide recommendations;
- (iii) Meet PLN, visit project sites and assess the status of existing networks (condition, issues in capacity, reliability, use of standards, operation and maintenance aspects, losses, generation facilities, condition of distribution networks connected to the transmission system);
- (iv) Review costs estimates by PLN and provide recommendations;
- (v) Select prioritized transmission lines and substations projects based on the government’s criteria and conduct technical due diligence including technical viability, standards used, potential to use latest technologies and provide recommendations
- (vi) Prepare bill of quantities and cost estimates for the core subprojects;
- (vii) Review technical specifications for all network components of the proposed projects and provide recommendations for updating;
- (viii) Review bidding documents and provide recommendations for updating;
- (ix) Assess the risks to the project implementation with risk mitigation measures;
- (x) Assess the implementation period of ongoing projects and provide achievable targets for implementation of the proposed projects; and
- (xi) Asses the institutional arrangements in technical and operational planning of the PLN regional departments who supervise the project and responsible in operation and maintenance of the project assets.

11. **Power System Engineer–Smart Grid (national 2 PM).** The expert will support *the Electricity Grid Development Program (EGDP2)*. ADB is seeking the services of smart grid specialist to support PLN in its effort to establish a corporate roadmap and technical standards and guidelines for smart grid implementation in PLN and support the selection and implementation

of smart grid pilots in four locations in Sulawesi and Nusa Tenggara. The key objective is to provide advice and build capacity to the respective regional offices (*Wilayahs*) and the regional and technical teams in headquarters. The smart grid specialist will work closely with other consultants. The detailed tasks will include, but not limited to the following:

- (i) Provide support to PLN on the smart grid guidelines and the underlying proposed system and technology standards, grid codes;
- (ii) Provide advice on the selection of the four smart grid locations;
- (iii) Review the implementation documents and approach; and
- (iv) Provide lessons learned from similar undertakings in other countries.

12. **Power Engineer– (international, 2 PM; national, 9 PM).** The expert will support *the Electricity Grid Development Program 2 (EGDP2)*. ADB is seeking the services of power distribution engineers to (i) conduct technical due diligence of PLN's power distribution network development plans in Kalimantan, and (ii) provide technical support to PLN in applying advance technologies such as remote monitoring of hybrid systems for isolated communities. The detailed tasks will include, but not limited to the following:

- (i) Validate the design and general layout of the power stations, generators and other electrical components and power plant electrical systems, and protection systems;
- (ii) Review the technical plan for the connection to the grid and report any bottleneck that may become critical for implementation; and
- (iii) Review the status of the regional grid and interconnection plans to evaluate feasibility of connecting the proposed power plants to the grid.

13. **Power Engineer– (international, 2 PM; national 9 PM).** The expert will support *the Sustainable and Reliable Energy Access Program (SREAP)* and participate in loan due diligence mission for the RBL program and contribute to the various meetings and discussions with PLN and other government agencies as necessary. The consultant will conduct technical due diligence of PLN's power transmission and distribution network development plans in West and Central Java, provide technical support to PLN in applying advance technologies such as distribution automation system and distribution management system for improving reliability and quality electricity services, and prepare required all RBL linked documents (LDs) and supplementary documents (SDs). The detailed tasks include, but not limited to the following:

- (i) Review PLN's power grid system, operation and maintenance program for reliability, and electrification program in West and Central Java;
- (ii) Review PLN's T&D programs and plans, and based on at least the last 5 years' trend data, in coordinate with concerned units in PLN, recommend the new targets for the future 5 years to be achieved by PLN for the items below:
 - (a) Rehabilitation length of distribution lines;
 - (b) Reconductoring length of transmission lines (no changes of transmission tower/structure to fall under safeguards category B or C);
 - (c) System Average Interruption Duration Index and System Average Interruption Frequency Index (separate figures for transmission and distribution);
 - (d) T&D system losses (separate figures for transmission and distribution);
 - (e) Number of automated distribution feeders;
 - (f) Number of new customers electrified;
 - (g) Reduced CO2 emission through losses reduction, improved reliability, decreased use of diesel generators owned by business/industry, etc.; and

- (h) Estimation of climate change financing following ADB climate change financing guideline.
- (iii) Review PLN's technical programs and plans and identify any challenge and bottleneck that may become critical to timely implementation of the program and include in the PAP for technical issues;
- (iv) Assess and prepare/update the program technical soundness; and
- (v) Review and prepare/update technical sections in the relevant linked documents and supplementary documents, such as:
 - (a) Disbursement-linked indicators – technical;
 - (b) Program soundness assessment;
 - (c) Integrated risk assessment;
 - (d) Program action plan; and
 - (e) Program scope of work, etc.

14. **Battery Energy Storage System Expert (international, 3 PM).** The expert will support *the Sustainable and Reliable Energy Access Program (SREAP)* and participate in loan due diligence mission for the RBL program and contribute to the various meetings and discussions with PLN and other government agencies as necessary. The consultant will conduct technical due diligence of PLN's BESS development plan including impact study for BESS with a capacity around 100MWh connected to the grid; provide technical support to PLN in applying BESS for improving reliability and quality electricity services; and provide inputs to relevant RBL linked documents (LDs) and supplementary documents (SDs) in coordination with the international power distribution expert. The detailed tasks include, but not limited to the following:

- (i) Review the existing PLN's BESS development policy, law, regulations, and institutional arrangements as well as existing studies and reports for BESS development;
- (ii) Assist PLN in preparing the BESS development policy (if not existent or outdated) including targets, implementation strategy, investment, and institutional arrangements;
- (iii) Recommend the potential of introducing most appropriate BESS technologies to PLN in targeting reliability improvements;
- (iv) Prepare the benefits of BESS including CO2 emission reduction as appropriate;
- (v) Develop business models to promote BESS development, if applicable;
- (vi) Recommend the targets of EV charging system installation for the future 5 years under the program in coordination with PLN;
- (vii) Review PLN's technical programs and plans and identify any challenge and bottleneck that may become critical to timely implementation of the program and include in the PAP for technical issues; and
- (viii) Review and prepare/update technical sections in the relevant LDs and SDs in coordination with the International Power Distribution Expert .

15. **Electric Vehicle (EV) Charging System Expert (international, 2 PM).** The expert will support *the Sustainable and Reliable Energy Access Program (SREAP)* and participate in loan due diligence mission for the RBL program and contribute to the various meetings and discussions with PLN and other government agencies as necessary. The consultant will conduct technical due diligence of PLN's EV charging system development plans including impact study for EV charging stations connected to the grid; assist PLN in development of EV charging station roadmap, charging standard, tariff scheme and payment system; and provide inputs to relevant RBL linked documents (LDs) and supplementary documents (SDs) in coordination with the international power distribution expert. The detailed tasks will include, but not limited to the following:

- (i) Review the existing energy policy, law, regulations, and institutional arrangements as well as existing studies and reports related to EV charging system in the Indonesia;
- (ii) Coordinate with PLN, government units, transportation associations and fleet managers, on key considerations for successful deployment of EV charging system;
- (iii) Support design of safe and adequate charging system and recommend EV charging stand for electric vehicles in the Indonesia;
- (iv) Review and recommend business models, tariff scheme and the payment system to PLN related to EV charging system. The consultant will identify risks and propose approaches for minimizing risks and maximizing program benefits;
- (v) Develop safety protocols;
- (vi) Estimate power demand increase by EV charging, CO2 emission reduction, and climate change financing following ADB guidelines;
- (vii) Recommend the targets of EV charging system installation for the future 5 years under the RBL program in coordination with PLN;
- (viii) Review PLN's technical programs and plans and identify any challenge and bottleneck that may become critical to the timely implementation of the program and include in the PAP for technical issues; and
- (ix) Review and prepare/update technical sections in the relevant LDs and SDs in coordination with international Power Distribution Expert.

16. **Power Engineer – Transmission System (international, 12 PM).** The expert will support *Power Generation Sector Project (PGSP & GDIP)*. ADB is seeking the services of power system engineers to assist PLN on the power generation and solar-gas hybrid system in Eastern Indonesia. The detailed tasks will include, but not limited to the following:

- (i) Validate the design and general layout of the power stations, generators and other electrical components and power plant electrical systems, and protection systems;
- (ii) Review the technical plan for the connection to the grid and report about any bottleneck that may become critical for the implementation of the time schedule; and
- (iii) Review the status of the regional grid and interconnection plans to evaluate feasibility of connecting the proposed power plants to the grid.

17. **Procurement Specialist (international, 5 PM).** The expert will support *the Power Generation Sector Project (PGSP); Electricity Grid Development Program Phase 2 (EGDP 2); and Sustainable and Reliable Energy Access Program (SREAP)*. ADB is seeking the services of an international procurement specialist to support the proposed sector loan for PGSP with the procurement plan for the overall sector projects and the core subprojects, and assist PLN with the procurement mechanism and evaluation criteria to further strengthen the procurement system and capacity to the proposed RBL program. The consultant will work closely with the other specialists. The detailed tasks will include, but not limited to the following:

- (i) PGSP
 - (a) Prepare a detailed procurement plan specifying schedule and mode of procurement and source of financing;
 - (b) Provide guidance to the executing agency in preparing the Master Bidding Documents for procurement funded by ADB, with special attention to the advance procurement and retroactive financing requirements; and

- (c) Undertake a thorough review of the turn key contracts prepared by PLN to ensure that they are in line with ADB's Procurement Guidelines.
- (ii) EGDP 2
 - (a) Conduct an assessment on PLN's procurement regulations, rules and procedures;
 - (b) Evaluate and monitor the procurement system performance;
 - (c) Identify potential deficiencies and risks in PLN's procurement system, including procurement methods and procurement planning; and
 - (d) Help PLN to improve its procurement capacity to scale up procurement under the program.
- (iii) SREAP
 - (a) Complete all the procurement-related write-up required across the various linked documents;
 - (b) Provide inputs into the integrated risks assessment and complete the necessary write-up;
 - (c) Provide procurement-related program action tasks and completing the necessary write-up;
 - (d) Provide inputs to the program fiduciary systems assessment;
 - (e) Provide support and input to the integrity disclosure report;
 - (f) Prepare a list of follow up action required under the PAP that will include:
 - (f.1) Revision or preparation of Policy and Procedure Manual(s) as identified;
 - (f.2) Risk mitigation procedures and practices that will need to be adopted or reviewed; and
 - (f.3) Gap analysis to identify capacity building opportunities and recommended accompanying programs;
 - (g) Work on RBL outputs including drafting, preparation of presentations, etc. in compliance with ADB requirements as needed and required for the RBL program; and
 - (h) Any other tasks needed for completing the procurement-related sections for preparing the RBL program.

18. **Financial Specialist, Energy Economist (international, 1 PM; national, 7 PM).** The experts will support *Electricity Grid Development Program Phase 2 (EGDP 2)*; and *Sustainable and Reliable Energy Access Program (SREAP)*. The two specialists 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. S/he will have at least 10 years' experience in financial management/energy economics and 5 years' experience in applying the procurement rules of international organizations.

19. **Impact Evaluation Specialist (international, 4 PM).** The experts will support *Electricity Grid Development Program Phase 2 (EGDP 2)*; and *Sustainable and Reliable Energy Access Program (SREAP)*. The Evaluation Specialist will ensure adequate consultations on each verification and capacity building-related deliverable in the form of reporting, one-on-one meetings, focus group meetings, or broad stakeholder consultations as required.

4. Minimum Qualification Requirements

20. The specialists will have regional experience who should have the following minimum qualifications:

- (i) The international consultants should have a university degree in desired fields, preferably at post-graduate degree and with at least 10 years of relevant professional experience in the power sector including power transmission and distribution system engineering and procurement related subjects;
- (ii) The national consultants shall have a university degree in related fields and at least 7 years of relevant professional experience. They should have a good knowledge of power distribution sector in Indonesia;
- (iii) The procurement specialist must be familiar with ADB standard bidding documents and procurement guidelines; and
- (iv) Working experience with PLN and Indonesia power sector will be an advantage.

J. Environmental and Social Safeguards Firm

1. Objective and Purpose of Assignment

21. ADB will require the services of a safeguards firm to assist in evaluation of environmental and social safeguards project concerns and prepare due diligence documents for the ensuing projects.

22. Consulting firm inputs will be 22 person-months of international consultants and 18 person-months of national consultants. Quality- and cost-based selection method with a technical: financial weighting of 90:10 will be used. Estimated budget is \$550,000. The type of contract will be time-based contract which will be firmed up during contract negotiations. The proposed composition of the consulting firm is shown in the table below. The outline terms of reference of the TA consultant are given in paragraphs below.

International Experts	Person-months	National Experts	Person-months
Team Leader environment Specialist	7	Environmental Safeguards Specialist	8
Environmental Safeguards Specialist	8	Social Safeguards Specialist	10
Social Impact & Resettlement Specialist	7		
Total person-months	40		18

2. Scope of Work

23. **Environmental and Social Safeguards.** Technical expertise will be provided to support 4 projects; specifically, EGDP 2, PGSP, SREAP and GDIP.

24. **Environmental due diligence.** Due to the nature of habitats and biodiversity of the region, there is the likelihood of some projects/programs having environmental impacts classed as "A" which corresponds to the highest impact, preparation of a Draft Rapid Environmental Assessment (REA) Checklist and A Checklist for Preliminary Climate Risk Screening to confirm categorization for transmission component is required. Technical expertise is required to prepare environmental impact assessment/initial environmental evaluation (EIA/IEE) reports including (i) up to date

quantified baseline data, (ii) appropriate quantification of project's impact, (iii) environmental management plan (EMP), (iv) explanation of a grievance redress mechanism for environment, and (v) assessment of the borrower's capacity and need for a capacity building program to ensure satisfactory implementation of the environment safeguards, following ADB Safeguard Policy Statement (2009). The experts will be expected to conduct consultations with stakeholders including affected people and document consultation results in EIA/IEE as well as prepare the terms of reference for the implementation individual consultants for environment monitoring.

25. **Social safeguard due diligence.** It is anticipated that the projects/programs will not pose severe impacts on community's land and assets based on PLN experience, hence resettlement impact category will most likely be "B". Many indigenous people groups live in the islands covered under the projects. Indigenous category B and C projects will be selected for the project, and there will be no category A projects selected. The use of country safeguards systems (CSS) will be considered once PLN's use of CSS is approved. If the project/s match/es the criteria for the use of CSS, a socio-economic study and social impact assessment is to be undertaken in the project impact area and include meaningful consultation with affected people, project beneficiaries and other stakeholders, and documentation of consultation results in draft resettlement plans and ethnic minorities development plans (RPs/EMDPs). In accordance with the ADB Safeguard Policy Statement (2009), the experts will prepare social safeguards frameworks, and social safeguards planning documents as necessary for each project component. The safeguards planning documents are documents of the Government and should be prepared in consultation with them prior to submission to ADB for review and concurrence. Part of the terms of reference will also include to prepare the terms of reference for the individual implementation consultants and independent monitoring agency (if required) and estimate their costs; a Grievance Redress Mechanism taking into consideration suggestions stemming from community consultations and assist the Government in carrying out disclosure of key information in the safeguards planning documents. The experts will assess the capacity of the Government and field staff in social safeguards planning and implementation, and recommend a capacity strengthening program as required. The team is anticipated to conduct specific conflict- sensitive consultations in all relevant project areas, if any.

26. **Climate impacts and risk assessment.** The safeguards firm will conduct accounting of greenhouse gases (GHGs) emissions associated with the project, which can arise from generation emissions due to increase demand and emissions saved owing to electricity replaces other fuels used. Calculate net GHGs emission associated with this project. Conduct climate risk assessment for the project and propose measures to ensure design specifications for transmission infrastructure withstand more extreme conditions (such as higher wind velocity) and to provide them with the ability to cope with higher air temperatures, wind, corrosion, and flooding. Propose adaptation measures including engineering and non-engineering adaptation measures for the project design.

27. **Reporting, communication and other support.** Ensure timely delivery of outputs and submission of reports; present the assessments and results in regional meetings/workshops, obtaining comments and addressing them; administer workshops and training under the technical assistance.

3. Consultants minimum qualification requirements for the firm

a. Team Leader / Senior Environmental Specialist (international, 7 PM)

28. The Environmental and Social Safeguards Team Leader will be tasked with overseeing support to EGD 2, PGSP, SREAP & GDIP projects covering a wide range of environmental and social conditions across a wide geographical area.

i. Qualifications

29. The specialists should have a postgraduate degree in environmental engineering/science or natural resource management with at least 15 years' experience in environmental related work especially in developing countries in Asia. As a team leader, the expert will be responsible for all subproject outputs and liaison with ADB, PLN and other partners. The team leader will be supported by all team members. The team leader will seek and coordinate the inputs of all team members and ensure that the assessments and reports, workshop and training organizations, and proposed implementation arrangements meet ADB's requirements.

b. Environmental Specialists (international, 8 PM)

i. Scope of Work

30. The international environmental safeguards consultant will be engaged on an intermittent basis. The consultants will work closely with the IVA Team engaged under TA 9113-INO to independently verify PLN's progress in implementing the environmental safeguards actions under the RBL Program Action Plans.

ii. Detailed Tasks

31. The detailed tasks include:

- (i) Verify the progress towards the agreed targets under DLI 8 on DLI 8: Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021;
- (ii) Work closely with the IVA team in the verification of PLN's implementation of the Program Action Plan (PAP), particularly action on environmental safeguards; and
- (iii) Provide all information and documents required to verify the safeguards actions in a timely manner.

iii. Output/Reporting Requirements

iv. Qualifications

32. The specialists should have a postgraduate degree environmental engineering/science or natural resource management with at least 15 years' experience in environmental related work especially in developing countries in Asia. It is essential for the specialist to have knowledge of environmental policies and regulatory framework/ legislation as well as that of international finance institutions such as ADB or World Bank on environmental impact assessment and its cross-sectoral application. The specialist should also have extensive knowledge on the ADB's Safeguard Policy Statement (SPS) with its objectives, scope and triggers, policy principles and environmental safeguards requirements. Familiarity with Results-Based Lending and experience in environmental safeguards in Indonesia are an advantage. An excellent verbal and written

communications skill in English is required. Current knowledge of Indonesian legal frameworks for environmental and strong interpersonal skills and ability to work effectively in a multi-cultural environment are needed.

c. Environment Specialist (national, 8 PM)

i. Scope of Work

33. The consultant will carry out the government system assessments through desk reviews, meetings, consultations, and field visits. The national specialist, will undertake (i) the diagnostic assessment of the government's current system (policy and legal frameworks) and PLN practices, scope and triggers of ADB safeguards for environment; (ii) prepare linked documents for the RBL such as Program Safeguards System Assessment (PSSA) and additional information of PSSA; and (iii) give environmental safeguards related inputs to Program Action Plans (PAPs) for RBL program. The assessment analysis will build on past and existing studies carried out by ADB for country safeguards system (CSS) for PLN and assessment on safeguards from previous energy RBL programs. The PSSA exercise will include; (a) diagnostic assessment of applicable and relevant laws, regulations, rules, and procedures for managing and mitigating the environmental safeguards impacts of RBL program; (b) an assessment of PLN's implementation practice, capacity and commitment to plan, implement, monitor and report on the safeguards measures for RBL program; (c) the RBL programs' inconsistency with the applicable ADB Safeguard Policy Statement (SPS) 2009 principles (as relevance) and Public Communication Policy, the significance of these gaps, and PLN's commitment to address critical gaps; and (d) environmental safeguards related program actions to be included in the overall PAPs for RBL program to address the identified weaknesses. The PAPs will follow the SPS objectives and principles, but the policy delivery process and operational procedures will refer to the country system. The consultant requires for timely outputs and ensure that the quality of deliverables.

ii. Detailed Tasks

34. The detailed tasks include, but not limited to the following:
- (i) Review equivalence and acceptability assessments reports for PLN's use of country safeguards system (CSS) carried out by ADB in collaboration with PLN and BAPPENAS and existing PSSA reports for Indonesia such as under EGD 2;
 - (ii) Propose an initial categorization for RBL program's potential environmental impacts and draft ADB categorization forms for environment;
 - (iii) Review documents on applicable and relevant government laws, regulations, rules, and procedures for managing and mitigating the environmental safeguards impacts of the RBL program;
 - (iv) Assess key inconsistencies/gaps between the Indonesian law and regulations and PLN's Decrees with ADB SPS principles and whether the written system (law, regulations, procedure) addresses safeguards principles set forth in ADB SPS. Identify what incremental improvements are needed;
 - (v) Assess the implementation of written system and capacity of the PLN as executing agency (EA), implementing agencies (IAs-PLN Wilayahs/Regional offices), and other key agencies in handling environmental safeguards. Identify what incremental improvements are needed. Capitalize the gap analysis and capacity assessment in handling environment safeguards under equivalence and acceptability assessment for PLN, PSSA reports and relevant ADB financed projects framework for energy with PLN for the assessment and action plans;

- (vi) In collaboration with PLN, organize consultation meetings with relevant local government agencies, Provincial and District Government handling environmental issues, PLN regional offices (PLN Wilayahs and the units below), and other stakeholders in the at regional level where selected program are located;
- (vii) Assess the adequacy of how EA/IA has implemented its own projects as well as ADB/IFI projects on a macro level. Assess the commitments of EA/IA at national and regional level in addressing the gaps;
- (viii) Based on the legal review and capacity assessment, prepare environmental safeguards related actions to be included in the overall PAPs to address the identified gaps/weaknesses in framework and capacity;
- (ix) Prepare draft PSSA reports for RBL program containing assessment and environmental safeguards related program actions and be made available for the key stakeholders prior to the consultations. Use outline of ADB PSSA for the report preparation;
- (x) In collaboration with the PLN HQ and PLN Wilayah and other consultants under the RBL program, organize consultations with key stakeholders on the draft PSSAs and PAPs and get participants view and suggestions/recommendations for the draft;
- (xi) Finalize the PSSA reports in collaboration with environmental safeguards specialists and give environmental safeguards related inputs to PAPs. Secure the agreement from ADB and EAs; and
- (xii) Undertake additional tasks to be assigned by the Team Leader or Environmental Safeguards Specialist, ADB.

iii. Qualifications

35. The specialist should have a university degree in a relevant background in natural sciences, environmental sciences/management or environmental engineering with at least 12 years' experience in environment impacts and management related work especially in developing countries in Asia. Advance graduate degree is preferable. It is essential for the specialist to have knowledge of country environment safeguards policies and regulatory framework/legislation as well as that of international finance institutions such as ADB or World Bank on environment safeguards and its cross-sectoral application. The specialist should also have extensive knowledge on SPS with its objectives, scope and triggers, policy principles and environment safeguards requirements. Familiarity with Results-Based Lending and experience in working on power/energy sector projects/program are preferable. An excellent verbal and written communications skill in English is required. Current knowledge of Indonesia and strong interpersonal skills and ability to work effectively in a multi-cultural environment are needed.

d. Social Safeguards Specialist (international, 7 PM)

i. Scope of Work

36. International social safeguards consultants will be engaged on an intermittent basis. The consultants will work closely with other consultants.

ii. Detailed Tasks

37. The consultants will carry out the following tasks:
- (i) develop social impact assessment, including gender analysis;

- (ii) design resettlement framework and indigenous peoples planning framework for the overall sector project;
- (iii) provide resettlement plan and indigenous peoples plans for the proposed projects (the core subprojects and selected non-core subprojects) as required;
- (iv) provide management support, including collecting data inputs, fact-checking and documentation; and
- (v) undertake data collection and relevant research as well as analysis.

iii. Minimum Qualification Requirements

38. The social safeguards consultants will be individuals with the following minimum qualifications:

- (i) University degree in social sciences and related fields;
- (ii) Minimum of 5 years' specific experience in social safeguards implementation and/or monitoring; and
- (iii) Preferably with experience in working on power/energy sector projects.

e. Social Safeguards Specialist (national, 10 PM)

i. Scope of Work

39. The consultant will carry out the government system assessments through desk reviews, meetings, consultations, and field visits. The international specialist, assisted by a national specialist, will (i) assess the current Government of Indonesia (GOI)'s resettlement and indigenous people (social) safeguards system for managing social impacts and risks; (ii) prepare/update linked documents (LDs) for the RBL such as Program Safeguards System Assessment (PSSA) and Summary Poverty Reduction and Social Strategy (SPRSS); and (iii) give social safeguards related inputs to Program Action Plans (PAPs) for RBL program. The assessment analysis will build on past and existing studies carried out by ADB for country safeguards system (CSS) for PLN and assessment on safeguards from previous energy RBL programs. The PSSA exercise will include; (a) diagnostic assessment of applicable and relevant laws, regulations, rules, and procedures for managing and mitigating the social safeguards impacts of RBL program; (b) an assessment of PLN's implementation practice, capacity and commitment to plan, implement, monitor and report on the safeguards measures for RBL program; (c) the RBL programs' inconsistency with the applicable ADB Safeguard Policy Statement (SPS) 2009 principles (as relevance), the significance of these gaps, and PLN's commitment to address critical gaps; and (d) social safeguards related program actions to be included in the overall PAPs for RBL program to address the identified weaknesses. The PAPs will follow the SPS objectives and principles, but the policy delivery process and operational procedures will refer to the country system. The consultant requires for timely outputs and ensure that the quality of deliverables.

ii. Detailed Tasks

40. The detailed tasks include, but not limited to the following:

- (i) Review equivalence and acceptability assessments reports for PLN's use of country safeguards system (CSS) carried out by ADB in collaboration with PLN and BAPPENAS and existing PSSA reports for Indonesia such as under EGDP 2;

- (ii) Propose an initial categorization for RBL program's potential social impacts and draft ADB categorization forms for involuntary resettlement and indigenous peoples;
- (iii) Review documents on applicable and relevant government laws, regulations, rules, and procedures for managing and mitigating the social safeguards impacts of the RBL program;
- (iv) Assess key inconsistencies/gaps between the Indonesian law and regulations and PLN's Decrees with ADB SPS principles and whether the written system (law, regulations, procedure) addresses safeguards principles set forth in ADB SPS. Identify what incremental improvements are needed;
- (v) Assess the implementation of written system and capacity of the PLN as executing agency (EA), implementing agencies (IAs–PLN Wilayahs/Regional offices), and other key agencies in handling social safeguards. Identify what incremental improvements are needed. Capitalize the gap analysis and capacity assessment in handling social safeguards under equivalence and acceptability assessment for PLN, PSSA reports and relevant ADB financed projects framework for energy with PLN for the assessment and action plans;
- (vi) Select the most social-sensitive programs (including geographic area, potential impacts on resettlement and indigenous peoples, and communities acceptance) to be financed under the RBL program (completed, ongoing, or planned activities), and conduct field visits to assess compliance with ADB/GOI- PLN social safeguards policies;
- (vii) In collaboration with PLN, organize consultation meetings with the communities and local leaders including customary leaders and village offices, relevant local government agencies (Regional Land Office (KATR/BPN), Provincial and District Government handling social welfare and indigenous people), civil society organization (CSO), PLN regional offices (PLN Wilayahs and the units below), and other stakeholders in the at regional level where selected program are located;
- (viii) Assess the adequacy of how EA/IA has implemented its own projects as well as ADB/IFI projects on a macro level. Assess the commitments of EA/IA at national and regional level in addressing the gaps;
- (ix) Based on the legal review and capacity assessment, prepare social safeguards related actions to be included in the overall PAPs to address the identified gaps/weaknesses in framework and capacity both for involuntary resettlement and indigenous peoples. The actions that may include:
 - (a) specific mitigation measures to address particular impacts;
 - (b) institutional arrangement, cost estimates, budget, and time frame for implementing the actions; and
 - (c) measures for information disclosure, consultation, and grievance redress during implementation
- (x) The action will focus for the key priority actions and be selective in its coverage. The type and content of agreed actions are determined by reference to the PSSAs findings and should be commensurate with the significance of social safeguards issues associated with the RBL programs. The actions may include measures for monitoring social safeguards systems performance;
- (xi) Prepare draft PSSA reports for RBL program containing assessment and social safeguards related program actions and be made available for the key stakeholders prior to the consultations. Use outline of ADB PSSA for the report preparation;
- (xii) In collaboration with the PLN HQ and PLN Wilayah and other consultants under the RBL program, organize consultations with key stakeholders on the draft PSSAs

and PAPs and get participants view and suggestions/recommendations for the draft. The stakeholders include representatives affected persons and community leaders, Ministry of Energy and Mineral resources (MEMR), Land Office (KATR/BPN), local government agencies, PLN, CSOs, and other relevant agencies at regional level where program are located. Give social safeguards related inputs to minutes of consultations and recommendations;

- (xiii) Finalize the PSSA reports in collaboration with social safeguards specialists and give social safeguards related inputs to PAPs. Secure the agreement from ADB and EAs; and
- (xiv) Undertake additional tasks to be assigned by the Team Leader or Social Safeguards Specialist, ADB.

iii. Qualifications

41. The specialist should have a university degree in a relevant social science with at least 12 years' experience in social safeguards related work especially in developing countries in Asia. Advanced graduate degree is preferable. It is essential for the specialist to have knowledge of country social safeguards policies and regulatory framework/legislation as well as that of international finance institutions such as ADB or World Bank on social safeguards and its cross-sectoral application. The specialist should also have extensive knowledge on SPS with its objectives, scope and triggers, policy principles and social safeguards requirements. Familiarity with Results-Based Lending and experience in working on power/energy sector projects/program are preferable. Excellent verbal and written communications skill in English is required. Current knowledge of Indonesian legal frameworks for land acquisition and resettlement and indigenous peoples and strong interpersonal skills and ability to work effectively in a multi-cultural environment are needed.

III. INDEPENDENT VERIFICATION AGENT FIRM FOR RBL PROGRAMS

A. Background

42. An independent verification agent (IVA), Castlerock Consulting Pte Ltd, was engaged under INO C-TA0013: Sustainable Infrastructure Assistance Program Subproject 8 – Strengthening Verification in Results-Based Programs in Indonesia's Power Sector (TA 9113-INO) to undertake independent results verification and capacity building support to PLN (State Electricity Corporation) of Indonesia in the monitoring and evaluation of the results indicators and the disbursement-linked indicators (DLIs) and program action plans (PAPs) under two ongoing RBLs in Indonesia: (i) ADB L3339 and AIF L8297 and World Bank's Program for Results (PforR): Electricity Grid Strengthening–Sumatra (EGSS) Program; and (ii) ADB L3560: Sustainable Energy Access in Eastern Indonesia–Electricity Grid Development Program (EGDP) covering Sulawesi and Nusa Tenggara.

43. The IVA was selected using the quality and cost-based selection (QCBS) method with a technical and financial ratio of 90:10 using biodata technical proposal for the original contract covering independent verification of DLIs under EGSS with engagement period from 15 September 2016 to 30 June 2019. With the approval of additional budget for TA 9113-INO, variations to the IVA's contract were undertaken to include the verification of the PAP for EGSS and DLI and PAP for EGDP in the scope of work and extension of the contract until 30 November 2019. Independent verifications for EGSS and EDGP need to be undertaken until 30 June 2020 and 30 June 2022, respectively. Since SIAP 1 will end on 31 December 2019, it is proposed that future verifications be financed under SIAP 2.

B. Objective and Purpose of the Assignment

44. PLN, as implementing agency for the RBL and PforR programs, will have the responsibility for overall program results monitoring and evaluation. Within PLN the Corporate Performance Control Unit (SPKK) will collect and consolidate data from the regional offices (Wilayahs) and assist PLN's program management unit within the Corporate Planning Division (DIVRKO) to prepare a quarterly performance monitoring report. SPKK's role under the programs is in line with its existing mandate to report to PLN's President Director on corporate performance against the agreed key performance indicators. PLN Wilayahs also currently maintain statistics on virtually all the indicators for which they will be required to provide data under the programs. While PLN's evaluation capacity and established procedures are reasonable, the program will bring added value by helping PLN to further strengthen its monitoring and evaluation methodologies and capacity through the assistance of a third-party verification agent (IVA).

45. For continuity of the verifications for the two ongoing RBLs, Castlerock Consulting Pte Ltd IVA is proposed to be re-engaged as the IVA through single source selection/direct contracting. It is also expected that the verification of the proposed INO EGDP2 covering Kalimantan, Maluku and Papua, and SREAP covering western and central Java will be included under the IVA's scope of work upon approval by ADB's Board.

1. Scope of Work

46. Based on the current verification schedules being adopted for the two ongoing RBLs, the IVA is expected to undertake the following:

- (i) Phase 1 (initial contract under SIAP 2)
 - (a) L3339/L8297-INO and World Bank's PforR: Sumatra (from 1 January to 30 June 2020) – 1 annual verification (for 2019 achievements)
 - (b) L3560-INO: Sulawesi and Nusa Tenggara and common DLIs and program actions under KfW cofinancing (from 1 January 2020 to 30 June 2022) – 2 interim and 3 annual verifications
 - (c) Proposed EGDP 2: Kalimantan, Maluku and Papua (from 1 January 2020 to 30 June 2022) – 1 baseline, 2 interim and 2 annual verifications
- (ii) Phase 2 (contract extension, as and when funds will become available)
 - (a) Proposed EGDP 2: Kalimantan, Maluku and Papua program (from 1 July 2022 to 30 June 2026) – 4 interim and 4 annual verifications
 - (b) Proposed SREAP: Western and Central Java (from 1 January 2021 to 30 June 2026) – 1 baseline, 5 interim and 6 annual verifications

47. **Verification Protocols.** Under Phase 1, the IVA will continue to verify the achievement of DLI results and program actions for the two ongoing RBLs and PforR, including common DLIs and program actions upon effectiveness of KfW cofinancing for L3560-INO, from 1 January 2020 until 30 June 2022, following the terms of reference currently being adopted under its contract under SIAP 1 and commence verification for the proposed EGDP 2 upon loan effectiveness. Contract extension for Phase 2 will be initiated as and when funds under SIAP 2 will become available. The IVA will verify results through financial audit, procedural verification, and physical inspection that will test the accuracy and quality of results claimed by PLN. In accordance with good audit practice, physical verification will take place against a sampling framework and frequency. The IVA will use the verification protocols of the ongoing RBLs as the basis for preparation of a program results verification report that will be submitted by PLN to ADB and the

World Bank. The IVA will also adopt monitoring and evaluation practices in line with international standards when conducting audits or other work as appropriate.

48. **Disbursements.** The loan proceeds will be disbursed against submission to ADB, the World Bank, and KfW of the IVA's program results verification report on the achievement of DLIs. PLN will present the program results verification report to ADB, the World Bank, and KfW within three months of the end of each calendar year (for ADB and KfW it is 31 December and World Bank it is 30 June). ADB, the World Bank, and KfW will use the program results verification report to determine the amount of the eligible disbursements to be made based on the results achieved.

49. **Prior Results under EGDP 2.** Disbursements for prior results, if any, will be made against the verification of the results following the effectiveness of the ADB loan.

50. The IVA will be responsible for the following key activities, but not limited to:

(i) **Output 1: Results indicators verification**

- (a) Verifying the baseline data for the results indicators under EGDP 2 (2018 or 2019 data) and under SREAP (2019 or 2020 data).
- (b) Verifying on an annual basis the results indicators as per annual targets of EGSS, EGDP, EGDP 2, and SREAP as provided by PLN's Corporate Performance Control Unit (SPKK).

(ii) **Output 2: Disbursement-linked indicators verification**

- (a) Verifying the baseline data for the results indicators under EGDP 2 (2018 or 2019 data) and under SREAP (2019 or 2020 data).
- (b) Verifying on an annual basis the DLIs under EGSS, EGDP, EGDP 2, and SREAP (i) on the basis of their respective DLI targets, (ii) using their respective verification protocols, and (iii) by applying the corresponding disbursement schedules.
- (c) Verifying the 2019 World Bank PforR DLIs (a) as its Disbursement Linked Indicator Matrix, (b) using the verification protocols as identified in the DLI Verification Protocols and (c) applying the unit values in the Bank Disbursement Table.

(iii) **Output 3: Capacity building**

- (a) Reviewing and providing comments and observations on SPKK, PLN's Internal Audit (SPI), and Division Head Sumatra's role and coverage in reporting and providing assurance on validity of DLI achievements (in Sumatra region). Identify specific deficiencies and areas of weaknesses and make recommendations for their improvement. Build SPKK, SPI, and Division Head Sumatra's capacity to compile the results indicators and DLI performance data as per standards required for their verification by the IVA.

(iv) **Output 4: PLN's management of the RBL is strengthened**

- (a) Verifying PLN's actions under the PAP for EGSS, EGDP, EGDP 2, and SREAP
- (b) Providing recommendations to PLN and ADB on enhancements to managing performance of the transmission and distribution programs in the geographical areas covered by the RBLs.

2. Deliverables

51. **Program results verification report.** The IVA shall prepare for PLN, ADB, the World Bank and KfW's review within three months following the end of each interim (January to June) and annual (January to December) program, the achievement of DLIs, results indicator targets and program actions, through interim and annual results verification reports based on the structure agreed with PLN, ADB, the World Bank, and KfW.

52. **Prior results under EGDP 2 and SREAP.** The IVA shall deliver the report within 30 days of mobilization the first Program Results Verification Report covering the prior results under EGDP 2 and SREAP, if any, covering DLI targets achieved from signing of the ADB loan and as per the DLI matrix.

53. **Institutional framework, reporting, and management.** The main counterpart to whom the IVA will report to would be the respective regional units for each RBL program. PLN's Corporate Planning Division (DIVRKO) will provide coordination support as needed. In addition, PLN's Corporate Performance Control Unit (SPKK) shall provide the key performance indicators corresponding to each RI and DLI under the Program for each prior calendar year, and for prior results.

54. The IVA will submit interim and annual reports and a completion report that should conceptually reflect issues, value addition by the IVA, lessons learned and proposed measures on the usage and strengthening of PLN's verification systems.

55. PLN will provide the IVA access to PLN's databases, and if needed, internet access. Other equipment such as specialized software to improve internal systems, if purchased by the IVA, will be handed over to PLN upon completion of the IVA's contract in accordance with ADB policies on turn-over of equipment.

3. Implementation Arrangements

56. Overall, the consultant will report to PLN and ADB. The IVA's team will be supervised by an experienced team leader who will concurrently function as the team's senior auditor. The IVA will ensure adequate consultations on each independent verification and capacity building-related deliverable in the form of one-on-one meetings, focus group meetings, or broad stakeholder consultations.

57. The team leader's duties, include, but are not limited to:

- (i) liaising with PLN and keeping ADB, the World Bank, and KfW apprised of any issues or concerns that could impact project performance and/or completion, and ensuring direction of the IVA's work toward achieving the intended objectives and timelines;
- (ii) coordinating the inputs per agreed work plans, advising team members of changes to the work plans, and monitoring team members' other project commitments to ensure priority attention is given to the project;
- (iii) ensuring outputs of team members are in accordance with the contract's terms of reference and ADB/World Bank/KfW quality expectations, and reviewing, commenting on, and approving such outputs, as needed;
- (iv) ensuring all contracted deliverables are prepared in a timely manner, and managing project scheduling;

- (v) briefing team members on (a) quality management, (b) safety and security issues, and (c) integrity and professional conduct, and keeping the team updated on changes in the operating environment or procedures;
- (vi) approving timesheets and expense claims of team members, managing any emerging issues, and leading the firm's work on contract administration;
- (vii) developing and submitting quarterly contract status reports in accordance with agreed formats and based on inputs by the team members as well as other information on the contract and the consultant team as required by ADB and PLN; and
- (viii) submitting the required reports to ADB and PLN for approval. The completion report shall include lessons learned, a sustainability plan, and other recommendations that would ensure that the gains achieved from the verifications are fully institutionalized.

58. **IVA team composition.** The IVA shall nominate key experts for power engineers, environment safeguards specialists, social safeguards specialists and technical/research analysts, to ensure that verifications of the DLIs and PAPs undertaken satisfactorily and quality reports are delivered on time.

59. **Contract negotiations.** The IVA will be requested to submit its technical (work plan and biodata of proposed key experts) and financial proposals for this assignment. ADB will evaluate the technical proposal and will secure concurrence from PLN. Once the technical proposal is deemed acceptable, contract negotiations will be held upon effectiveness of the subproject under SIAP 2. ADB does not commit to award a contract to the IVA.

60. **Assignment duration.** It is envisaged that Phase 1 of the IVA's assignment will be from 1 January 2020 to 30 June 2022, on intermittent basis. Phase 2 implementation will be confirmed upon approval of additional funds from SIAP 2.

IV. INDIVIDUAL CONSULTANTS

61. In addition to the firms, a number of individual consultants will be engaged to deliver specific outputs including; sector procurement assessment, climate risk vulnerability assessment, financial performance and financial management assessments, project financial and economic analysis, community consultation, and communication strategy and implementation.

C. Geothermal (Mechanical/Process) Engineer (international, 2 PM)

1. Scope of Work

62. The geothermal engineer will provide technical guidance to GDE related to expansion of existing geothermal power plants Dieng and Patuha and support ADB in technical evaluation and project due diligence for ADB financing. The geothermal engineer will conduct the following tasks:

2. Detailed Tasks:

- (i) Review all data and models related to existing operations;
- (ii) Recommend additional geoscientific studies required to inform further design work;

- (iii) Evaluate technology options for the power plant power plant, considering the development scenario, fluid characteristics, field condition, equipment mobilization condition, and the economic aspects;
- (iv) Identify options for incorporating innovation/high-level technology and quantify incremental costs and benefits;
- (v) Develop the initial drilling design and update to incorporate additional data as they become available;
- (vi) Provide cost estimates based on the feasibility-level design and provide necessary breakdowns to ADB financial specialist for preparation of cost tables and financial models; and
- (vii) Prepare a framework of activities for the engineering and design follow-on work and the supervision consultants.

3. Qualifications

63. The geothermal engineer should have a relevant degree and a minimum of 8 years of related experience. Experience and expertise in geothermal surface facility design and power plant procurement is essential. Experience on geothermal power plants in Indonesia is preferred.

D. Procurement Specialist (national, 2 PM)

1. Scope of Work

64. ADB is seeking the services of a procurement specialist to (i) support the proposed sector loan for PGSP with the procurement plan for the overall sector projects and the core subprojects, and (ii) assist PLN with the procurement mechanism and evaluation criteria to further strengthen the procurement system and capacity to the proposed RBL program. The consultant will work closely with the other specialists.

2. Detailed Tasks:

a. PGSP

- (i) Prepare a detailed procurement plan specifying schedule and mode of procurement and source of financing;
- (ii) Provide guidance to the executing agency in preparing the Master Bidding Documents for procurement funded by ADB, with special attention to the advance procurement and retroactive financing requirements; and
- (iii) Undertake a thorough review of the turn key contracts prepared by PLN to ensure that they are in line with ADB's Procurement Guidelines.

b. EGDP 2

- (i) Conduct assessment on PLN's procurement regulations, rules and procedures;
- (ii) Evaluate and monitor the procurement system performance;
- (iii) Identify potential deficiencies and risks in PLN's procurement system, including procurement methods and procurement planning; and
- (iv) Help PLN to improve its procurement capacity to scale up procurement under the program.

3. Qualifications

65. The specialist should have a bachelor's degree in electrical engineering with at least 15 years' experience in the power sector with extensive experience in high-voltage transmission systems and substations including gas-insulated switchgear substations. It is essential for the specialist to have at least 5 years of experience in preparing, and managing and supervising procurement of large turnkey/EPC procurement packages. The specialist should also have extensive knowledge of ADB's procurement systems and national procurements systems of large middle-income countries in Southeast Asia. Some knowledge of PLN's power system and procurement practices is preferred. The specialist should have strong interpersonal skills and ability to work effectively in a multicultural environment.

E. Procurement Specialist (SREAP) (national, 3 PM)

1. Scope of Work

66. The objective of the assignment is to assist ADB in coordination with the PLN to prepare all the procurement-related assessments as required for preparing the RBL program and drafting all the findings in the various linked documents (LDs) (to be provided as needed). A procurement system assessment report for PLN was developed for EGDP 2 in early 2019, which will be updated and expanded as needed to fit the specific scope of the proposed SREAP program. Particular emphasis should be placed on tracking any areas where corruption, fraud or conflicts of interest can exist. The specialist will focus on the performance, practices, and status of procurement systems of PLN and any other agencies, as needed.

67. The consultant will be expected to participate in loan due diligence missions for the RBL program and contribute to the various meetings and discussions with PLN and other government agencies as necessary. The consultant will, (i) assess the current procurement systems of PLN and the Ministry of State-Owned Enterprises; (ii) assess Government of Indonesia's (GOI) national public procurement guidelines; (iii) review the Indonesia country procurement assessment report prepared by ADB; (iv) review the procurement assessment of PLN conducted by ADB for EGDP 2 and produce an updated procurement assessment report for SREAP; (v) provide recommendations to strengthen the proposed program and future programs, (vi) participate in mission meetings and related activities, and (vii) assist in the preparation of possible program actions. The consultant requires for timely outputs and ensure that the quality of deliverables.

2. Detailed Tasks

68. The detailed tasks include, but not limited to the following:
- (i) Complete all the procurement-related documents required across the various linked documents;
 - (ii) Provide inputs into the integrated risks assessment and completing the necessary write-up;
 - (iii) Provide procurement-related program action tasks and completing the necessary write-up;
 - (iv) Provide inputs to the program fiduciary systems assessment;
 - (v) Provide support and input to the integrity disclosure report;
 - (vi) Prepare a list of follow up action required under the PAP that will include:

- (a) Revision or writing of Policy and Procedure Manual(s) as identified;
- (b) Risk mitigation procedures and practices that will need to be adopted or reviewed;
- (c) Gap analysis to identify capacity building opportunities and recommended accompanying programs;
- (vii) Work on RBL outputs including writing, preparing presentations, etc. in compliance with ADB requirements as needed and required for the RBL program; and
- (viii) Any other tasks needed for completing all the procurement-related write-up for preparing the RBL program.

3. Qualifications

69. The specialist should have a university degree with at least 10 years' experience of government and state-owned country procurement systems, preferably with direct experience in Indonesia. Advanced graduate degree is preferable. It is essential for the specialist to have knowledge of procurement guidelines as that of international finance institutions such as ADB or World Bank. Familiarity with Results-Based Lending and experience in working on power/energy sector projects/program are an advantage. Excellent verbal and written communications skill in English is required.

F. Research Associate (national, 20 PM)

1. Scope of Work

70. ADB is seeking the services of a research associate to support the proposed three sector projects and two RBL programs. The research associate shall work closely with the ADB project officers and other consultants. The consultant will also be expected to liaise with the government and stakeholders in Indonesia. He/she will be responsible for conducting background research work, analyses, and developing sections of technical reports, as well as creating a database of reference materials and project documents.

2. Detailed Tasks

71. Detailed tasks include, but not limited to the following:
- (i) Provide technical and analytical support to ongoing and new projects and programs in the energy sector in Indonesia;
 - (ii) Support project processing and project administration, including procurement activities and implementation of select technical assistance activities;
 - (iii) Be part of technical teams and contribute to technical analyses, and participate in technical discussions with the governments; and
 - (iv) Support developing new technical assistance activities and ADB's ongoing sector plans with governments and other stakeholders.

3. Qualifications

72. The specialist should hold masters' degree in a relevant field (e.g. engineering, sciences, economics, finance, urban planning). The consultant should have consultancy experience with the government, ADB or with any other multilateral development organizations. She/he should also have minimum general experience at least 5 years and minimum specific at least 5 years. It is essential to have energy sector knowledge in Indonesia. It is preferable to have experience with ADB project processing and knowledgeable with ADB's implementation guidelines and procedure.

The specialist should have strong interpersonal skills and ability to work effectively in a multicultural environment. Excellent English language proficiency is a must.

G. Program Coordinator (national, 45 PM)

1. Scope of Work

73. The program coordinator (PC) shall be support staff of the Energy Division, Southeast Asia Department (SEEN), and other Indonesia energy team members as appropriate, for the processing of new loans, grants, and TAs.

2. Detailed Tasks

a. Research

- (i) Prepare TA reports to support proposed and ongoing Indonesia energy projects;
- (ii) Collect relevant data and information, and conduct analyses for loans, grants, and TAs under preparation;
- (iii) Compile these analyses in documents, spreadsheets, and slides, in a way useful for ADB operations;
- (iv) Prepare briefings, background papers and presentations for ADB's internal needs, meetings, conferences, and workshops;
- (v) Assist in drafting, reviewing and editing project-related documents prepared by the team; and
- (vi) Assist the project teams in any other research tasks as necessary, including simple translation of communication and short documents between Bahasa Indonesia and English and vice versa.

b. Coordination

- (i) Engage with relevant ADB's divisions for loans, grants, and TAs under preparation;
- (ii) Join site visit to support coordination among ADB, key counterpart and communities in potential project locations;
- (iii) Facilitate the organization of meetings and events, including the development of agendas, arrangement of venues, and fulfillment of other logistical issues, and assist in the identification and confirmation of speakers and participants;
- (iv) Provide meeting minutes and verify the contents with the participants;
- (v) Coordinate with the development partners and consolidate interagency comments; and
- (vi) Coordinate internally with ADB teams and departments concerned.

c. Communication and outreach

- (i) Prepare outreach materials related to the project;
- (ii) Review and proof-read project reports and outreach materials; and
- (iii) Prepare other reports as needed.

3. Qualifications

74. The program Coordinator should have the following qualifications:
- (i) A minimum of a Bachelor's Degree in engineering, development, finance, economics, environment, or other relevant fields;
 - (ii) Minimum 3 years of experience in assisting research and program administration, preferably in the energy and/or international development fields;
 - (iii) Good knowledge of Indonesian government organizations, including SOEs;
 - (iv) Native Bahasa Indonesia skills and strong oral and written communication skills in English (a written test may be administered as part of the interview process);
 - (v) Strong computer skills, including proficiency in MS Office tools; preference for knowledge of other research and project management tools such as MS Project, research databases, GIS, and web tools; and,
 - (vi) Ability to work as part of a team within a dynamic and multi-cultural environment.