ADB

Report and Recommendation of the President to the Board of Directors

Project Number: 51114-001
November 2020

Proposed Results-Based Loan and Administration of Grants
Perusahaan Listrik Negara
Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program (Phase 2)
(Guaranteed by the Republic of Indonesia)

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 2 October 2020)

Currency unit	–	rupiah (Rp)
Rp1.00	=	$0.00006731
$1.00	=	Rp14,855.00

ABBREVIATIONS

ACEF	–	Asian Clean Energy Fund
ADB	–	Asian Development Bank
COVID-19	–	coronavirus disease
DLI	–	disbursement-linked indicator
IVA	–	independent verification agent
JFPR	–	Japan Fund for Poverty Reduction
M&E	–	monitoring and evaluation
PAP	–	program action plan
PLN	–	Perusahaan Listrik Negara (State Electricity Corporation)
RBL	–	results-based lending
RUPTL	–	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Power Supply Business Plan)
SEAEI	–	Sustainable Energy Access in Eastern Indonesia
TA	–	technical assistance
UIW	–	Unit Induk Wilayah (Regional Administrative Unit)
ULP	–	Unit Layanan Pelanggan (Customer Services Unit)
UP2K	–	Unit Pelaksana Proyek Ketenagalistrikan (Electricity Project Implementation Unit)
UP3	–	Unit Pelaksana Pelayanan Pelanggan (Customer Service Implementation Unit)

NOTES

(i) The fiscal year (FY) of the Government of Indonesia and its agencies ends on 31 December. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2020 ends on 31 December 2020.

(ii) In this report, “$” refers to United States dollars.

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[a] Outposted to Indonesia Resident Mission
[b] Outposted to Cambodia Resident Mission

CONTENTS

RESULTS BASED PROGRAM AT A GLANCE

1. Basic Data

Project Number: 51114-001

Project Name	Sustainable Energy Access in Eastern Indonesia — Electricity Grid Development Program (Phase 2)	**Department/Division**	SERD/SEEN
Country	Indonesia	**Executing Agency**	P.T. Perusahaan Listrik Negara
Borrower	PT. Perusahaan Listrik Negara		
Country Economic Indicators	https://www.adb.org/Documents/LinkedDocs/?id=51114-001-CEI		
Portfolio at a Glance	https://www.adb.org/Documents/LinkedDocs/?id=51114-001-PortAtaGlance		

2. Sector

	Subsector(s)	ADB Financing ($ million)
✓ **Energy**	Electricity transmission and distribution	600.00
	Total	**600.00**

3. Operational Priorities

- ✓ Addressing remaining poverty and reducing inequalities
- ✓ Accelerating progress in gender equality
- ✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability
- ✓ Promoting rural development and food security
- ✓ Strengthening governance and institutional capacity

Climate Change Information

GHG reductions (tons per annum)	70,400
Climate Change impact on the Project	Low

ADB Financing

Adaptation ($ million)	0.00
Mitigation ($ million)	50.00

Cofinancing

Adaptation ($ million)	0.00
Mitigation ($ million)	3.00

Sustainable Development Goals

SDG 1.4
SDG 5.5
SDG 7.1
SDG 12.4
SDG 13.a

Gender Equity and Mainstreaming

Effective gender mainstreaming (EGM) ✓

Poverty Targeting

Geographic Targeting	✓
Household Targeting	✓

4. Risk Categorization: Complex

5. Safeguard Categorization

Environment: B **Involuntary Resettlement:** B **Indigenous Peoples:** B

6. Financing

Modality and Sources	Amount ($ million)
ADB	**600.00**
Sovereign Results Based Lending (Regular Loan): Ordinary capital resources	600.00
Cofinancing	**6.00**
Asian Clean Energy Fund under the Clean Energy Financing Partnership Facility - Grant projects (Full ADB Administration)	3.00
Japan Fund for Poverty Reduction - Grant projects (Full ADB Administration)	3.00
Counterpart	**1,669.00**
Government	1,669.00
Total	**2,275.00**

Currency of ADB Financing: US Dollar

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed results-based loan to the State Electricity Corporation (PLN), to be guaranteed by the Republic of Indonesia, for the Sustainable Energy Access in Eastern Indonesia (SEAEI)—Electricity Grid Development Program (Phase 2).[1] The report also describes the proposed administration of two grants: one to be provided by the Japan Fund for Poverty Reduction (JFPR) and the other to be provided by the Asian Clean Energy Fund (ACEF) under the Clean Energy Financing Partnership Facility, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the administration of both grants.[2]

2. SEAEI is a multi-year initiative with a series of interrelated lending programs and projects in Eastern Indonesia covering power generation, transmission, and distribution.[3] The SEAEI—Electricity Grid Development Program, approved in 2017, covers the regions of Sulawesi and Nusa Tenggara (Phase 1).[4] Phase 2 will cover the remaining regions of Eastern Indonesia, namely Kalimantan, Maluku, and Papua. The program aims to enhance access to sustainable and modern energy services in the target regions as envisioned in PLN's Electricity Power Supply Business Plan (RUPTL), 2019–2028, which will improve connectivity and help the regions' response to coronavirus disease (COVID-19) impacts.[5] The program also addresses a key priority of the government's National Medium-Term Development Plan (RPJMN) 2020–2024 to stimulate more inclusive growth with a focus on Eastern Indonesia.[6]

II. THE PROGRAM

A. Strategic Context

3. **Progress and challenges.** Indonesia's economy is the world's eighth largest in terms of purchasing power parity and has doubled in size since 2000. The decline in the poverty rate (19.1% in 2000 to 9.7% in 2018) has been remarkable, with 13.1 million people lifted out of poverty in 18 years albeit at risk of being reversed by COVID-19 impact. However, growth has been largely centered around Java, and regional disparities remain stark.[7] In Eastern Indonesia, poor infrastructure—for energy, transport, and communications—constrains its high growth potential.

4. **National priorities.** Expanded electrification, with a priority on regions outside Java, is an important element of the government's infrastructure investment plan. The plan includes increasing (i) the electrification ratio from 89% in 2016 to near 100% by 2024, (ii) the power generation capacity from 56.5 gigawatts in 2018 to 112.2 gigawatts in 2028, and (iii) the share of renewable energy in the national energy mix from 13% in 2016 to 23% in 2025.[8] PLN is the sole

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[1] The Asian Development Bank (ADB) provided transaction technical assistance (TA). ADB. 2018. *Technical Assistance to the Republic of Indonesia for Supporting Sustainable and Universal Electricity Access in Indonesia.* Manila (TA 9559-INO) under a cluster TA (ADB. 2013. *Technical Assistance to the Republic of Indonesia for Sustainable Infrastructure Assistance Program.* Manila [C-TA 0013-INO] financed by the Government of Australia through the Department of Foreign Affairs and Trade and administered by ADB).

[2] Both the JFPR and the ACEF are established by the Government of Japan and administered by ADB.

[3] "Eastern Indonesia" refers to the following five regions: Kalimantan, Maluku, Nusa Tenggara, Papua, and Sulawesi.

[4] ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Results-Based Loan to PLN, Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program.* Manila.

[5] PLN. 2019. *Electricity Power Supply Business Plan (RUPTL), 2019–2028*. Jakarta.

[6] Government of Indonesia. 2020. *National Medium-Term Development Plan 2020-2024.* Jakarta.

[7] For example, Jakarta's 2018 nominal per capita gross regional domestic product ($17,438) was more than 13 times higher than that of East Nusa Tenggara ($1,295).

[8] Kementerian Energi dan Sumber Daya Mineral Republik Indonesia (Ministry of Energy and Mineral Resources, Indonesia). 2017. *National Energy Master Plan*. Jakarta.

state-owned power utility in Indonesia and, together with its subsidiaries, is responsible for the generation, transmission, distribution, and retail sale of electricity. The government has undertaken several reform measures, including (i) expanding the role of the private sector and improving the investment climate, (ii) adjusting tariffs to better reflect costs and initiating performance-based measures to reduce state subsidy requirements, and (iii) strengthening PLN's governance and financial capacity to undertake the aggressive infrastructure investment plan.[9] Independent power producers are expected to account for 75% of new power capacity, with $57.5 billion of private sector financing, while PLN needs sovereign funding support for electricity grid development to fulfill its public service obligations, particularly in the outer provinces where cost recovery is challenged by tariff affordability. The government's approach balances the need for reforms to boost efficiency and service quality while striving to achieve universal electricity access with a priority on Eastern Indonesia, which poses the biggest challenge because of its vast and isolated geography and fragmented power grids.

5. **ADB support**. The programmatic support by the Asian Development Bank (ADB) to Eastern Indonesia in the energy sector includes (i) policy and regulatory support through the Sustainable and Inclusive Energy Program policy-based loan, [10] (ii) the Electricity Grid Development Program results-based lending (RBL) program for Sulawesi and Nusa Tenggara (footnote 4), (iii) wind and solar renewable energy projects in Sulawesi and Nusa Tenggara through nonsovereign operations,[11] (iv) a proposed sector project for small- to medium-scale natural gas-fired power plants with pilot gas–solar hybrid systems, and (v) other complementary projects and RBL programs.[12,] The program includes incentives to expand the use of renewable sources from both public and private sector investments and, together with other ADB support in the sector, will help enhance access to sustainable energy services, consistent with Sustainable Development Goal 7 of affordable, reliable, sustainable, and modern energy for all, and the Paris Agreement on climate change. [13] These operations are consistent with and support the government's reform agenda and efforts to strengthen governance and institutional capacity.

B. Program Rationale

6. Households classified as "not electrified" or "poorly electrified" account for 56% of all households in Papua, 15% in West Papua, 20% in both Maluku and North Maluku, 28% in Central Kalimantan, 18% in North Kalimantan, and 21% in West Kalimantan, versus a national average of 4%.[14] These areas are mainly serviced, if at all, by diesel-fired generators, which are inefficient, polluting, and expensive. Limited access to electricity compounds the broader development

[9] Government subsidies, which include a public service obligation margin of 7%, declined from 33% of PLN's total revenues in 2014 to 21% in 2019. The government has significantly streamlined business licensing processes, expanded financial guarantees, and provided targets for PLN on private sector procurement. Details are in the Program Expenditure and Financing Assessment (accessible from the list of linked documents in Appendix 2).

[10] ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Programmatic Approach and Policy-Based Loans for Subprogram 2 to the Republic of Indonesia for the Sustainable and Inclusive Energy Program.* Manila. Subprogram 2 supports policy actions to increase private sector investment, scale up renewable energy use, and reform electricity tariffs. Subprogram 3 aims to further improve fiscal sustainability and sector governance, mobilize private sector, and improve the regulatory environment for clean energy options.

[11] ADB. 2017. *Report and Recommendation to the Board of Directors: Proposed Loan and Administration of Loans to PT Energi Bayu Jeneponto for the Eastern Indonesia Renewable Energy Project (Phase 1).* Manila; and ADB. 2018. *Report and Recommendation to the Board of Directors: Proposed Loan and Administration of Loans for Special Purpose Vehicles Owned by Equis Energy for the Eastern Indonesia Renewable Energy Project (Phase 2).* Manila.

[12] ADB. 2019. *Country Operations Business Plan: Indonesia, 2020–2022.* Manila.

[13] United Nations General Assembly. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development.* New York; and The Paris Agreement under the United Nations Framework Convention on Climate Change; and Contribution to the ADB Results Framework (accessible from the list of linked documents in Appendix 2).

[14] 2017 data provided by PLN in October 2018. Poorly electrified households are those that receive intermittent power from small diesel generators and poorly maintained solar plants.

challenges in the target provinces. Papua, West Papua, and West Kalimantan have some of the lowest human development indexes, while these provinces and East and North Kalimantan have the lowest gender development indexes in Indonesia. Women's share of income is low in all provinces of Kalimantan, Maluku, and Papua, with the lowest share in East (23%) and North (26%) Kalimantan, versus a national average of 37%.[15] Disaggregated data is not available and there is a need to measure the impact of electrification programs on social development.

7. **COVID-19 impact**. Indonesia is among the hardest-hit countries in Southeast Asia by the COVID-19 pandemic. The economy is expected to contract by 1%, down from 5.0% growth in 2019 and from 5.4% growth originally expected for 2020.[16] In order to cushion the economic shocks to the poor during the pandemic, along with other measures the government announced free electricity for 24 million households in the 450-volt ampere (VA) category, and a 50% discount for 7 million households in the 900 VA category.[17] This has affected PLN's revenues, and PLN requires financial support to enhance its quality and coverage of services. Reliable electricity is a prerequisite to continue work, education, and essential health and public services especially when physical movement is restricted.[18] The program would enable ADB to support economic recovery in Eastern Indonesia and contribute to more equitable and resilient growth post COVID-19.

8. **The program**. The program will enhance sustainable, equitable, and reliable access to electricity for the population in nine provinces in Kalimantan, Maluku, and Papua and finance a slice of the broader program in the RUPTL 2019–2028. PLN has a financing gap for power delivery to communities, including through the use of cost efficient local renewable sources, for which it is seeking ADB support under the proposed program.

9. **Electrification impacts.** Increased electrification has been shown to result in improved development outcomes, including increased incomes, higher school attendance, reduced respiratory illness, and improved time poverty especially for women. An important lesson from programs in other countries is that consumer education and training are essential to achieve such improved development outcomes.[19]

10. **Modality.** The RBL modality is suitable as it will (i) increase accountability for delivering and sustaining results (e.g., by ensuring that community-level solar installations are functioning); (ii) consolidate gains in institutional strengthening from previous RBL programs;[20] (iii) fit with the government's fast-expanding universal electrification strategy and efforts to enhance PLN's efficiency and governance, through internal controls for monitoring and evaluation (M&E), procurement, and financial reporting; (iv) reduce high transaction costs associated with small, scattered investments; and (v) stimulate financing and harmonization with other development partners (footnote 2). The program will incorporate lessons from the previous RBL programs, such as the need to further strengthen PLN's internal M&E, waste and asset management, support

[15] Ministry of Women's Empowerment & Child Protection and Badan Pusat Statistik (Indonesian Central Statistical Office). 2018. *Pembangunan Manusia Berbasis Gender 2018*. Jakarta.
[16] ADB. 2020. *Asian Development Outlook Supplement 2020.* Manila.
[17] PLN. 2020. *PLN Ensures Extension of COVID-19 Electricity Assistance Program Is Timely and On Target*. Jakarta.
[18] Electricity is one of the top five non-food expenditures of poor households. Badan Pusat Statistik (Indonesian Central Statistical Office). 2020. *Monthly Report of Socio-Economic Data April 2020*. Jakarta.
[19] ADB. 2010. *Asian Development Bank's Assistance for Rural Electrification in Bhutan—Does Electrification Improve the Quality of Rural Life?* Manila; and World Bank. 2008. *Welfare Impacts of Rural Electrification: Evidence from Vietnam*. Washington, DC.
[20] ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Results-Based Loan to the Republic of Indonesia for the Electricity Grid Strengthening—Sumatra Program.* Manila, with cofinancing from the World Bank; and ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Results-Based Loan to PLN, Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program*. Manila, with cofinancing from the German development cooperation through KfW.

connection costs for poor households, further procurement process strengthening and educate consumers on safe and productive electricity use. An impact study (with sex-disaggregated data) will develop lessons for future programs.[21]

11. **Value added by ADB.** ADB's value addition to the sector comes from being the first partner to support sustainable energy access through the RBL modality, and able to leverage institutional improvements such as asset and waste management, least-cost planning for electrification with use of renewable energy systems, procurement tracking, and social impact monitoring. These will help ensure sustainability and strengthen PLN's capacity. RBL operations are well coordinated with its key development partners.[22] Previous RBL programs are cofinanced with the World Bank and German development cooperation through KfW (footnote 20). Collaboration will be pursued for the proposed program with the Japan International Cooperation Agency and the governments of Australia and New Zealand. The program is aligned with ADB's Strategy 2030 (Table 1), country partnership strategy for Indonesia, 2020–2024 which emphasizes inclusive growth with support for local and regional economic development, and included in ADB's country operations business plan for Indonesia, 2020–2022.[23]

Table 1: Alignment with Strategy 2030

Strategy 2030 Priorities	Contribution
Addressing remaining poverty and reducing inequalities	Reducing poverty and improving livelihoods by connecting more than 893,700 households in Eastern Indonesia, including at least 112,428 poor households
Accelerating progress in gender equality	Connecting at least 11,243 poor households headed by women and tracking female-headed households in PLN's M&E system; reducing time spent by women for household work; ensuring female participation in community workshops on safe and productive use of electricity
Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability	Increasing the use of clean energy systems for rural electrification; emphasizing results through power generation from renewable energy systems, rather than additional generation capacity, which may not be properly maintained
Promoting rural development and food security	Targeting rural regions with low electrification rates; expanding livelihood options and supporting the development of cold storage for food and medicine
Strengthening governance and institutional capacity	Strengthening governance and institutional capacity on internal M&E, asset and waste management, procurement, financial reporting, and sustainable operation and maintenance of small renewable energy systems in remote areas

M&E = monitoring and evaluation, PLN = Perusahaan Listrik Negara (State Electricity Corporation).
Source: Asian Development Bank.

C. Program Scope

12. PLN and ADB have agreed on an RBL program size of $2,275 million, of which the proposed loan will finance $600 million. Table 2 summarizes the RBL program scope.

Table 2: Program Scope

Item	Broader PLN Program	Results-Based Lending Program
Outcome	Electricity access in Kalimantan, Maluku, and Papua enhanced	Sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced
Key outputs	(i) Power generation capacity added; (ii) power transmission and distribution systems strengthened and expanded; and	(i) Power distribution network strengthened and expanded; (ii) renewable energy use increased; and

[21] Program Monitoring and Evaluation System Assessment (accessible from the list of linked documents in Appendix 2).
[22] Development Coordination (accessible from the list of linked documents in Appendix 2).
[23] ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific.* Manila; ADB. 2020. *Country Partnership Strategy: Indonesia, 2020–2024 —Emerging Stronger*. Manila; and ADB. 2019. *Country Operations Business Plan: Indonesia, 2020–2022.* Manila.

Item	Broader PLN Program	Results-Based Lending Program
	(iii) share of renewable energy increased.	(iii) institutional capacity strengthened and social monitoring enhanced.
Expenditure size	$5,128 million	Total: $2,275 million PLN: $1,669 million (73.4%) ADB: $600 million (26.4%) Cofinancing: $6 million (0.2%) poverty reduction and clean energy grants administered by ADB
Geographic coverage	All provinces in Kalimantan, Maluku and Papua	All provinces in Kalimantan, Maluku, and Papua
Implementation period	January 2020–December 2025	January 2020–December 2025

ADB = Asian Development Bank, PLN = Perusahaan Listrik Negara (State Electricity Corporation).
Sources: ADB and PLN.

D. Program Results

13. **Results chain.** The RBL program's impact is aligned with the RUPTL goal of enhancing the quality of life in Indonesian society through the use of electricity (footnote 5). The outcome will be sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced. Three disbursement-linked indicators (DLIs) at the outcome level focus on (i) the number of customers (DLI 1); (ii) the number of poor households electrified (DLI 2), supported by the JFPR grant, with a target that at least 10% of electrified households be headed by women;[24] and (iii) the reliability of services, as measured by the reduction in feeder line permanent interruptions (DLI 3). A baseline study and impact evaluation will measure social outcome indicators such as improved time use, separately for women and men.[25] Three output-level results contribute to the outcomes:

(i) **Output 1. Power distribution network strengthened and expanded**. This will be tracked by the installed length of medium-voltage distribution lines (DLI 4).

(ii) **Output 2. Renewable energy use increased.** Electricity provided to communities in the target areas will be from a mix of power sources, including small diesel generators, which is the most common for remote grids. Output 2, supported by the ACEF grant, explicitly focuses on increasing power generation from solar photovoltaic, mini and micro-hydro, and small biogas power plants (DLI 5).[26]

(iii) **Output 3. Institutional capacity strengthened and social monitoring enhanced.** Output 3 focuses on improving asset and waste management (DLI 6) and on enhancing social and gender aspects through PLN workshops on safe and productive energy use, with at least 30% female participation (DLI 7). Electronic procurement and contract payment systems will be integrated (DLI 8).[27]

14. These three outputs are sufficient to achieve the outcome, and the DLIs and other performance indicators provide ambitious yet achievable measures of progress toward outputs and outcome. The DLI targets were developed in consultation with experienced system planners in PLN and are as close as possible to the government-driven RUPTL targets, while carefully considering PLN's actual performance during 2012–2018. All DLIs will be verified by an

[24] Local government officials apply the term only when the woman is widowed or divorced. The proportion of females among heads of households is variable and may be as low as 3% in some villages.

[25] The indicators include improved time use reported by women and men as a result of electricity access on: (i) household work and care activities, (ii) productive activities, and (iii) social and community activities.

[26] DLI 5 on renewable energy has two sub-targets: (i) DLI 5.1 for targets that are consistent with PLN's RUPTL 2019-2028 (footnote 5) approved by the government; and (ii) DLI 5.2 for further aspirational targets that would need to be reflected in future RUPTL revisions, subject to government approval.

[27] The design and monitoring framework is in Appendix 1.

independent verification agent (IVA) under a separate technical assistance (TA) project.[28]

15. The results chain also includes three indicators not linked to disbursement, which track the program's social and gender outcomes, PLN's capacity for gender-sensitive social monitoring, and community-based training on solar photovoltaic maintenance.[29] These will be monitored through the program action plan (PAP).[30] Table 3 summarizes the disbursement allocations.

Table 3: Disbursement-Linked Indicator

	Disbursement Linked Indicators	ADB Financing	
		($ million)	(%)
Outcome			
DLI 1	Number of PLN customers in Kalimantan, Maluku, and Papua increased to at least 6.77 million customers by 2024.	150	25.0
DLI 2	An additional 112,428 poor households provided with PLN electricity by 2024, with data disaggregated by female/male-headed household; at least 10% of households to be headed by women: 2.1. All poor households[a] 2.2. Poor female-headed households	 60 15	 10.0 2.5
DLI 3	Feeder line permanent interruptions[b] in the distribution system reduced to less than 17.12 per 100 ckm by 2024.	90	15.0
Outputs			
DLI 4	Installed length of MV distribution lines increased to at least 63,692 ckm by 2024.	120	20.0
DLI 5	Power generation from solar photovoltaics (<10 MW), mini/micro hydro (<1 MW), and small biogas plants (<100 kW) increased by 5.1. An additional 40,000 MWh annually by 2025[c] 5.2. A further additional 48,000 MWh annually by 2025	 30 20	 5.0 3.3
DLI 6	Asset and waste management improved, with (i) 90% of used PLN-owned equipment in Kalimantan, Maluku, and Papua included in the disposal inventory as of the end of 2019 safely disposed of by 2025; and (ii) 25 additional warehouses holding environmental permits[d]	65	10.8
DLI 7	By 2024, consumer education workshops on safe and productive energy use implemented by 5 UIW and 29 UP3 offices, with a minimum of 30% female participation for each workshop based on a scoring system to promote female participation	30	5.0
DLI 8	E-procurement and SAP systems are integrated and rolled out by 2020, and at least 80% of contracts in financial value are recorded in the E-procurement–SAP integrated system by 2024	20	3.3
	Total	**600**	**100.0**[e]

ckm = circuit-kilometer; DLI = disbursement-linked indicator; kW = kilowatt; MV = medium volt; MW = megawatt; MWh = megawatt-hour; PLN = Perusahaan Listrik Negara (State Electricity Corporation); SAP = Systems, Applications, Products in Data Processing (integrated business software); UIW = Unit Induk Wilayah (Regional Administrative Unit); UP3 = Unit Pelaksana Pelayanan Pelanggan (Customer Service Implementation Unit).
[a] Supported by a grant of $3 million from the Japan Fund for Poverty Reduction.
[b] PLN defines permanent interruptions as those over 5 minutes in duration.
[c] Supported by a grant of $3 million from the Asian Clean Energy Fund.
[d] Environmental Permit and License to Operate Hazardous Waste Disposal.
[e] Numbers may not sum precisely because of rounding.
Sources: Asian Development Bank and PLN estimates.

E. Expenditure Framework and Financing Plan

[28] ADB. 2019. *Technical Assistance to the Republic of Indonesia for Supporting Sustainable and Universal Electricity Access Phase 2.* Manila (TA 9861-INO) under ADB. 2018. *Technical Assistance to the Republic of Indonesia for the Sustainable Infrastructure Assistance Program Phase II.* Manila (C-TA 0040-INO) financed by the Government of Australia through the Department of Foreign Affairs and Trade and administered by ADB.
[29] Program Results Framework (accessible from the list of linked documents in Appendix 2).
[30] Program Action Plan (accessible from the list of linked documents in Appendix 2).

16. PLN will be the borrower with a sovereign guarantee from the Republic of Indonesia. The total expenditure of the RBL program is estimated to be $2,275 million (Table 4).[31] This amount includes the engineering, procurement, and construction costs and additional expenditure items required to achieve the stated program results.

Table 4: Summary of Program Expenditure Framework, 2020–2025
($ million)

	Results-Based Lending Program	
Item	**Amount**	**Share of Total** (%)
Distribution		
A. Capacity expansion	660	29.0
B. Capacity strengthening	502	22.1
Renewable generation[a]	450	19.8
Corporate social responsibility budget	3	0.1
Monitoring and supervision	8	0.4
Environmental management	5	0.3
Interest during construction	287	12.6
Subtotal	**1,916**	**84.2**
Physical contingencies[b]	163	7.1
Price contingencies[c]	196	8.6
Total	**2,275**	**100.0**

Note: numbers may not sum precisely because of rounding.
[a] Solar photovoltaic plants (< 10 megawatts), mini/ micro-hydro plants (< 1 megawatt), and small biogas plants (< 100 kilowatts).
[b] Based on 10% estimated physical contingencies.
[c] Based on Asian Development Bank (ADB) forecast domestic and international cost escalation factors.
Sources: ADB and Perusahaan Listrik Negara (State Electricity Corporation) estimates.

17. **Program financing.** PLN has requested ADB to provide a regular loan of $600 million from ADB's ordinary capital resources and grants of $3 million each from the ACEF and JFPR. The loan will have a 20-year term, including a grace period of 5 years; an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; a commitment charge of 0.15% per year; and such other terms and conditions set forth in the draft loan agreement. Based on the straight line method, the average maturity is 12.75 years, and there is no maturity premium payable to ADB. The ADB loan and ACEF and JFPR grant proceeds are not linked to any certain expenditure items but are an integral part of the program's overall financing plan shown in Table 5.

Table 5: Program Financing Plan

	Broader PLN Program		RBL Program	
Source	**Amount** ($ million)	**Share of Total** (%)	**Amount** ($ million)	**Share of Total** (%)
PLN[a]	3,239	63.2	1,669	73.4
Asian Development Bank				
Ordinary capital resources (loan)	600	11.7	600	26.4
JFPR grant[b]	3	0.1	3	0.1
ACEF grant[b]	3	0.1	3	0.1
Others[c]	1,283	25.0	0	0.0
Total	**5,128**	**100.0**	**2,275**	**100.0**

ACEF = Asian Clean Energy Fund, JFPR = Japan Fund for Poverty Reduction, PLN = Perusahaan Listrik Negara (State Electricity Corporation), RBL = results-based lending.
Note: Numbers may not sum precisely because of rounding.
[a] From PLN's internal cash flows, commercial funding partners, and equity injections from the government.
[b] Trust fund established by the Government of Japan and administered by the Asian Development Bank.
[c] Includes funding from other bilateral and multilateral financial institutions, including the Islamic Development Bank and German development cooperation through KfW.
Sources: Asian Development Bank and PLN estimates.

[31] Program Expenditure and Financing Assessment (accessible from the list of linked documents in Appendix 2).

18. **Disbursement arrangements.** The loan and grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) and detailed arrangements agreed upon between the borrower and ADB. PLN will submit a withdrawal application reporting on the achievement of the DLIs, and disbursement will be made subject to verification by an IVA in accordance with the agreed verification protocols (Appendix 3). If a target has not been fully achieved but partial disbursement has been agreed for that DLI, ADB will determine the amount to be disbursed based on the level of achievement. Loan proceeds will be disbursed to PLN's general account with a commercial bank. Grant proceeds will be disbursed to separate accounts set up by PLN for each grant. Advance financing under the loan and both JFPR and ACEF grants, and financing for prior results under the loan and JFPR grant will be made available to address financing requirements as needed within the RBL policy limits.[32] PLN will refund any advance financing amount outstanding if the DLIs are not achieved.

F. Capacity Development and Program Action Plan

19. Various assessments have identified capacity gaps for implementing the RBL program (paras. 22–35). Based on these assessments, a PAP was developed to enhance PLN's capacity (in addition to strengthening through the three output-level institutional strengthening DLIs). The PAP includes actions in specific technical areas, M&E, fiduciary management, and safeguards to strengthen PLN systems, help achieve DLIs, and make the program results more sustainable. The PAP will focus on implementation capacity, which will complement physical investments under the program and contribute to PLN's overall efforts to increase the capacity of its staff and improve institutional monitoring and reporting systems.

G. Grant Assistance

20. Connections for poor households, a social and gender impact evaluation study, and PLN workshops on safe and productive electricity use will be supported by the JFPR grant proceeds.[33] The rehabilitation and upgrading of solar photovoltaic systems using advanced technology, including improvements in system design and maintenance procedures, will be supported by ACEF grant proceeds.

H. Implementation Arrangements

21. PLN is the executing agency. Program implementation will be undertaken by PLN's administrative regional units (UIWs) and units that report to them—the Customer Service Implementation Units (UP3s), Electricity Project Implementation Units (UP2Ks), and Customer Services Units (ULPs)—in Kalimantan, Maluku, and Papua, with oversight by PLN headquarters in Jakarta.[34] The program will be implemented from January 2020 to December 2025.[35]

[32] Financing for prior results will not be applicable under the ACEF grant.
[33] Japan Fund for Poverty Reduction Grant (accessible from the list of linked documents in Appendix 2).
[34] Unit Pelaksana Pelayanan Pelanggan (UP3) was previously called Area; Unit Layanan Pelanggan (ULP) was previously called Rayon; and Key PLN divisions in headquarters have developed good capacity to plan and manage RBL programs because of their experience with previous RBL programs (footnote 20).
[35] Program Implementation Document (accessible from the list of linked documents in Appendix 2).

III. SUMMARY OF ASSESSMENTS

A. Program Technical Assessments

22. A review of the technical soundness of the program shows that the power distribution design is simple and straightforward, and generally follows international practice. Overall, PLN's plan to develop the power systems in Kalimantan, Maluku, and Papua is operationally viable and can be expected to increase service coverage and reliability.[36] These conclusions underpin the results areas, key actions to be taken, and performance indicators for the sector overall, and the RBL program in particular.

23. The program's poverty reduction and social impact cuts across many sectors including tourism, health, fisheries, and agroindustry. Over 890,000 households (including the poorest and the most remote) will benefit from having electricity access. Children will be able to read and study in the evenings, and indoor air quality will improve as fuel lamps are eliminated. Women and men will be able to communicate better and access information via their phones. Village schools and health centers will benefit from lighting, refrigeration, and equipment for vaccination. The program will also expand electricity access to small and medium-sized businesses, and can contribute to substantial job growth, which will support the post-COVID recovery for Eastern Indonesia. [37]

24. Gender mainstreaming is addressed by two DLIs. DLI 2 will ensure that poor households headed by women are provided with reliable and affordable electricity supply, which will reduce the time and effort spent by women to obtain other fuels, enable women to run income-generating activities in their homes, and acquire knowledge through telecommunications.[38] Communities will be able to pump and store water, while having well-lit streets will deter crime and enhance safety for girls and women. DLI 7 (on consumer education) requires at least 30% female participation in the community workshops (with incentives to reach 50%).[39] Gender mainstreaming is also supported through community training on basic solar photovoltaic maintenance, with a focus on women's involvement.

25. The program will generate positive net incremental economic benefits from the additional electricity supply. The program's economic viability is assessed on the basis of a network system approach for the entire PLN program in Kalimantan, Maluku, and Papua, as the benefits are dependent on interlinked investments in generation, transmission, and distribution.

B. Program Systems Assessments

26. **Monitoring and evaluation systems.** PLN's corporate M&E system has the capacity to track all DLIs as well as other indicators. Of the eight DLIs, PLN's Management Reporting Information System already monitors DLIs 1, 3, 4, and 5, while other systems can complement and/or monitor DLIs 5, 6, and 8. The remaining indicators (DLIs 2 and 7) relate to the gender and social dimensions of the RBL program, and PLN is introducing special procedures to strengthen its information systems at both the field and central levels to report properly on these dimensions for the first time. Monthly reports provide comprehensive data on all aspects of PLN's operation,

[36] Program Soundness Assessment (accessible from the list of linked documents in Appendix 2).
[37] Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).
[38] In Bhutan this gave women greater self-confidence and more of a voice in household decisions (footnote 19).
[39] The 30% minimum threshold is established because local officials—mainly men—would attend this activity. In addition, since the project is spread out in many remote villages, pregnant women and women with young children may find it difficult to travel to the workshop venue if held outside the village.

and are reviewed at monthly consultations between PLN headquarters and UIW staff. IVA reports from the previous two RBL programs are being used to strengthen PLN's M&E systems.

27. **Fiduciary systems.** The program will use PLN's fiduciary systems for financial management, procurement, and audit. These systems were assessed to determine their ability to manage fiduciary risks and provide assurance that the RBL program funds will be used as intended, with due consideration for economy and efficiency.[40] The fiduciary assessment found that consolidated financial reporting and budgeting improvements were required. These fiduciary system improvements will be addressed through system enhancements in the PAP, with relevant staff required to attend training for these systems.

28. **Financial management.** A financial management assessment of PLN was carried out in 2015 (footnote 20) and 2017 (footnote 4), and updated for the program. The assessment was conducted with reference to relevant ADB guidance on financial management and concluded that PLN's financial management systems are adequate for the RBL program, with improvements needed in terms of timely budget execution and accounting and reporting. Administrative delays resulting in government financial support for PLN were identified as a risk. ADB, the World Bank, and other development partners will continue to mitigate this risk through ongoing TA support to strengthen public financial management arrangements (footnote 28).

29. PLN has been mandated to execute a significant investment program against a backdrop of uncertainty especially with COVID-19 impacts and volatile fuel prices, inflation, interest rate, and foreign exchange.[41] This presents a challenge to PLN's financial management, and the monitoring and early detection of deteriorating financial performance is addressed in the PAP. Continued government support is critical to ensure PLN's financial sustainability and to achieve the program's objectives. ADB and PLN will coordinate closely with the Ministry of Finance.[42]

30. **Procurement**. A procurement assessment covered the (i) procurement profile; (ii) regulations, rules, and procedures; (iii) organizational arrangements and capacity; and (iv) system performance.[43] The program will rely on PLN's systems and will exclude high-value contracts in accordance with ADB's RBL policy. The scope of procurement for the RBL program include: materials, works and service contracts for distribution lines; engineering, procurement, and construction of small renewable energy systems; and goods and works for in-house wiring. PLN will procure the materials for distribution centrally through limited bidding and framework contracts. The procurement of works and installation services will be carried out by the UIW offices and their subsidiary units. Procurement of advanced technology elements, such as remote monitoring and energy management systems, will be carried out following PLN's open competitive bidding procedures that allow participation by international bidders.

31. Previous RBL procurement risk assessments (conducted in 2015 and 2017) rated the overall risks as *moderate*. The procurement assessment finds the *moderate* rating still valid. The main deficiencies and risks in PLN's procurement system are (i) lack of an integrated information technology system to report, monitor, and analyze procurement and contract data; (ii) limitations

[40] Program Fiduciary Systems Assessment (accessible from the list of linked documents in Appendix 2).
[41] For example, the government announced in 2014 a program to add 35 gigawatts of new power generation capacity by 2019. This timeline has subsequently been extended.
[42] Program Expenditure and Financing Assessment (accessible from the list of linked documents in Appendix 2) includes information on key financial risks and mitigants for PLN, including those related to COVID-19; and to support PLN during its significant capital investment growth phase, the program proposes modified financial covenants, which will be applied consistently to all ADB loans under implementation.
[43] Procurement Assessment of Perusahaan Listrik Negara (State Electricity Corporation) (accessible from the list of linked documents in Appendix 2).

on international bidders who wish to participate, because of requirements for local content; (iii) the use of procurement methods with limited competition; (iv) insufficient procurement capacity or capacity of local contractors to scale up procurement under the program, especially in UIWs; and (v) insufficient procurement planning, which may lead to implementation delays. A key lesson from previous RBL programs is the low level of utilization of the contract monitoring application and lack of integration with the contract payment system. These will be addressed through DLI 8 of the proposed program. Other key procurement risks will be addressed through the PAP.

32. Integrity due diligence was conducted.[44] The Guidelines to Prevent or Mitigate Fraud, Corruption, and Other Prohibited Activities in Results-Based Lending for Programs were explained to and discussed with PLN.[45]

33. **Safeguard systems.** The program is expected to generate significant positive environmental and social benefits from reduced indoor kerosene and wood consumption. Promotion of renewable energy use will also lead to greenhouse gas emission reductions and health benefits. The program safeguard system assessment, undertaken by ADB with PLN drawing on previous related assessments, confirmed the safeguards classification of category B for environment, involuntary resettlement, and indigenous peoples.[46] The adverse environmental impacts of eligible activities under the program are anticipated to be minimal to minor, site-specific, reversible, and can be mitigated to acceptable levels through good construction practices. No impact is anticipated to result in irreversible and permanent damage. No physical displacement or relocation of people is anticipated. The expansion of distribution lines will require 0.2 square meters (for concrete poles) to 24 square meters (for pad mounted and on-ground distribution transformers) of land. Village-level power generation facilities will require 0.2 hectares to 2.0 hectares of land. There are customary communities in the project area, and some of the land used for the program may be owned by indigenous peoples groups. Program impact will not be significant, as it will involve minor land losses and will not lead to relocation for the communities. Actions to strengthen meaningful consultations, screening process to ensure the exclusion of category A activities, and provision of programs on access and awareness of electricity to indigenous peoples have been included in the safeguard program actions.

34. The program safeguard systems currently in place are broadly aligned with the objectives, scope, and triggers of ADB's Safeguard Policy Statement (2009) and considered generally acceptable.[47] PLN has established a relatively comprehensive system of guidelines and decrees that supplement the national regulatory framework for environmental and social safeguards. PLN has a robust institutional structure with broadly adequate staffing, with ongoing deployment of additional safeguards specialists at the UIW, UP3, and ULP levels. Gaps in safeguard systems have been identified with respect to (i) PLN's institutional capacity, especially at the UIW, UP3, and ULP levels; (ii) environmental and social safeguards screening; (iii) transparent and consistent procedures for negotiated land acquisition and donation; (iv) monitoring and reporting; (v) asset and waste management; (vi) warehouses operating without permits; and (vii) meaningful consultation, including involvement of vulnerable, indigenous, and customary community groups, and awareness raising on electrical safety. These will be addressed through DLI 6 (asset and waste management and warehouse permits) and the PAP, including a screening mechanism to ensure that the RBL program excludes activities that would be classified as category A in accordance with ADB's Safeguard Policy Statement.

[44] Integrity Disclosure (accessible from the list of linked documents in Appendix 2) includes information on the recent investigation by the Corruption Eradication Commission.
[45] ADB. 2018. Staff Guidance for Piloting Results-Based Lending for Programs. Manila. (Appendix 7).
[46] Program Safeguard Systems Assessment (accessible from the list of linked documents in Appendix 2).
[47] ADB. 2009. *Safeguard Policy Statement*. Manila.

C. Integrated Risk Assessment and Mitigating Measures

35. Major risks and mitigating measures are summarized in Table 6.[48] The overall benefits and impacts are expected to outweigh the risks and costs.

Table 6: Summary of Integrated Risk Assessment and Mitigating Measures

Risks	Key Mitigating Measures
Program scope. A significant proportion of poor households, including households headed by women, may be unable to connect because of depth of poverty and remote location.	PLN will use the poverty-focused JFPR grant to support in-house wiring costs for poor households. The loan and the ACEF grant will support PLN to connect remote villages using small grids with renewable energy systems.
Program scope. Insufficient commitment and government support to increase small renewable energy use in the RUPTL.	PLN will propose additional community-scale renewable energy investments in future RUPTL updates. PLN, with support from ADB, will engage with the Ministry of Mineral Resources throughout the program.
Financial sustainability. PLN's free cash flow decreases from forecasted levels, resulting in a delay to its capital expenditure program.	PLN will provide quarterly financial reporting and rolling 3-year financial projections to identify early indicators of heightened credit stress. PLN will also report on key internal initiatives to reduce the cost of electricity supply. ADB and PLN, in close coordination with the Ministry of Finance, will discuss budget support requirements during program implementation.
Fiduciary. PLN struggles with initiatives to strengthen internal controls.	The e-procurement system will be used to track contract awards and detect any red flags. Any issues identified will be discussed with PLN's management team, and relevant government authorities as appropriate.
Safeguards. The issuance of government approvals for the disposal of assets and wastes and licensing of warehouses is delayed.	PLN and ADB will have close coordination with the Ministry of State-Owned Enterprises and Ministry of Environment and Forestry during program implementation.
Monitoring and evaluation. PLN does not yet have the means to monitor the connection of households headed by women.	PLN will obtain additional data on households headed by women from the government and add a data field in its database for poor households.
Overall RBL program risk	Moderate

ACEF = Asian Clean Energy Fund, ADB = Asian Development Bank, JFPR = Japan Fund for Poverty Reduction, PLN = Perusahaan Listrik Negara (State Electricity Corporation), RUPTL = Electricity Power Supply Business Plan.
Source: ADB and PLN.

IV. ASSURANCES

36. The government and PLN have agreed with ADB on certain covenants for the RBL program, which are set forth in the loan agreement, grant agreements, and guarantee agreement.

V. RECOMMENDATION

37. I am satisfied that the proposed results-based loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of $600,000,000 to Perusahaan Listrik Negara (State Electricity Corporation), to be guaranteed by the Republic of Indonesia, for the Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program (Phase 2), from ADB's ordinary capital resources, in regular terms, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 20 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and guarantee agreements presented to the Board.

2 November 2020

Masatsugu Asakawa
President

[48] Integrated Risk Assessment and Mitigating Measures (accessible from the list of linked documents in Appendix 2).

DESIGN AND MONITORING FRAMEWORK

Impact the Program is Aligned with
The quality of life in Indonesian society is enhanced through the use of electricity (Electricity Power Supply Business Plan, 2019–2028)[a]

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced	a. Number of PLN customers in Kalimantan, Maluku, and Papua increased to at least 6.77 million by 2024 (2018 baseline: 5.22 million) DLI 1 b. Additional poor households provided with PLN electricity increased to 112,428 households by 2024, with data disaggregated by female/male-headed household, with at least 10% of households to be headed by women[b] (2018 baseline: 0 additional poor households provided with PLN electricity) DLI 2[c] c. Reliability of electricity supply improved**:** Feeder line permanent interruptions in the distribution system reduced to 17.12 per 100 ckm by 2024[d] (2018 baseline: 23.29 interruptions/100 ckm). DLI 3 d. By 2026, improved time use reported by women and men as a result of electricity access, measured in hours per week expended by women and men on: (i) household work and care activities, (ii) productive activities, and (iii) social and community activities (2020 baseline: To be measured through the baseline evaluation survey)	a.–c. PLN UIW records, PLN SILM, RBL program reports based on quarterly reviews, and IVA reports d. Social and gender impact evaluation, including baseline survey	Lack of central and local government funding support to poor households unable to connect, including households-headed by women
Outputs 1. Power distribution network strengthened and expanded	1a. Installed length of medium-voltage distribution lines increased to reach at least 63,692 ckm by 2024. (2018 baseline: 47.639 ckm) DLI 4	1a. PLN UIW records, PLN SILM, RBL program reports based on quarterly reviews, and IVA reports	
2. Renewable energy use increased	2a. Power generation from solar photovoltaics (<10 MW), mini/micro hydro (<1 MW), and small biogas (<100 kW) plants increased by (i) an additional 40,000 MWh annually by 2025; and (ii) an additional 48,000 MWh annually by 2025 (2018 baseline 0 additional MWh) DLI 5 2b. At least one pilot community-based training on solar photovoltaic maintenance delivered by 2024 with a minimum of 30% female participation, and a training module developed for expansion of community training by PLN (2018 baseline: Training not yet offered)	2a. PLN UIW, and EBT records and IVA reports	Insufficient commitment and government support to increase small renewable energy use in the RUPTL

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
3. Institutional capacity strengthened and social monitoring enhanced	3a. Asset and waste management improved, with (i) 90% of used PLN-owned equipment in Kalimantan, Maluku, and Papua included in the disposal inventory as of the end of 2019 safely disposed by 2025 and (ii) 25 additional warehouses holding environmental permit by 2024[e] (2018 baseline: 0% disposal rate; 0 additional warehouses with environmental permit) DLI 6	3a. Records from PLN's UIW and HSSE, and IVA reports	Undue delays in government approval processes hold up the required institutional actions
	3b. By 2024, consumer education workshops on safe and productive energy use implemented by 5 UIW and 29 UP3 offices, with a minimum of 30% female participation[f] for each workshop, based on a scoring system to promote higher female participation. (2018 baseline: 0 workshops) DLI 7[g]	3b. PLN UIW records, and IVA reports	
	3c. E-procurement and SAP systems are integrated and implemented by 2020, and at least 80% of contracts in financial value are recorded in the e-procurement–SAP integrated system by 2024. (2018 baseline: E-procurement and SAP systems are separate) DLI 8	3c. E-procurement plus SAP integrated system	
	3d. Annual report on social impact of electrification with data disaggregated by sex published by the end of 2022 (2018 baseline: No annual reporting)[h]	3d. PLN DIV COM and IVA reports, social and gender impact evaluation and baseline survey	

Key Program Actions

1. Program scope. Plan and finalize the selection of locations, components, and criteria for sequencing interventions for strengthening and expanding the distribution system.
2. Technical design. (i) Develop guidance to regulate voltage at feeder lines; and (ii) conduct a study with draft standards for single-phase distribution systems, including consideration of Single Wire Earth Return.
3. Program results. (i) Report implementation status of the Japan Fund for Poverty Reduction grant on poor household connections, PLN trainings, community training materials, and social and gender impact assessments; and (ii) report implementation status for the Asian Clean Energy Fund grant on community-scale solar photovoltaics, remote monitoring, hybrid units, and community training on solar photovoltaic maintenance.
4. Monitoring and evaluation. Strengthen PLN's existing monitoring and evaluation systems through regular quarterly reviews and improved data collection on poverty and gender.
5. Gender. Enhance PLN's capacity to mainstream gender, through enabling the tracking of households headed by men and women, managing gender impact assessments, and promoting female participation in trainings.
6. Financial management. Strengthen financial management through (i) automated production of consolidated financial statements with variance reporting against budget and (ii) regular reporting on initiatives to reduce electricity supply costs.
7. Procurement. Strengthen procurement through (i) reports based on the E-procurement-SAP integrated system, (ii) competitive bidding with international participation for new technologies/expertise; and (iii) annual procurement audits.
8. Safeguards. (i) Strengthen institutional capacity on environmental and social safeguards, (ii) strengthen safeguards screening and assessment, (iii) strengthen community consultations and grievance redress mechanisms, (iv) improve transparency and fairness on land issues, and (v) monitor compliance with safeguards program actions.

Financing Plan

Total financing program from 2020 to 2025: $2,275 million
Perusahaan Listrik Negara (Stata Electricity Corporation): $1,669 million
Asian Development Bank: $600 million (loan)
Japan Fund for Poverty Reduction: $3 million (grant)[i]
Asian Clean Energy Fund: $3 million (grant)[j]

Assumptions for Partner Financing
Not applicable

ckm = circuit kilometer; DIV COM = Division of Communication and Corporate Social Responsibility; DLI = disbursement-linked indicator; EBT = New and Renewable Energy Division; HSSE = Health, Safety and Environmental Division; IVA = independent verification agent; kW = kilowatt; MW = megawatt; MWh = megawatt-hour; PLN = Perusahaan Listrik Negara (State Electricity Corporation); RBL = results-based lending; RUPTL = Rencana Usaha Penyediaan Tenaga Listrik (Electricity Power Supply Business Plan); SAP = Systems, Applications, Products in Data Processing (an integrated business software); SILM = Sistem Informasi Laporan Manajemen (PLN's Management Reporting Information System); UIW = Unit Indux Wilayah (Regional Administrative Unit); UP3 = Unit Pelaksana Pelayanan Pelanggan (Customer Service Implementation Unit).

[a] PLN. 2018. *Electricity Power Supply Business Plan, 2019–2028.* Jakarta.

[b] A conservative target needs to be established regarding the share of female-headed households. While the Indonesian Central Statistical Office defines a female-headed household as one where a woman is the family breadwinner or considered the head of the family, local governments classify a household as female-headed only when the woman is widowed or divorced. The RBL program will use the local government definition, as this is the only data that is regularly available at the local level.

[c] PLN and local governments identify poor households through a database updated yearly. The updates by the local governments are provided to PLN, as poor households are entitled to receive subsidies for electricity tariffs.

[d] PLN defines permanent interruptions as those over 5 minutes in duration.

[e] Environmental Permit and License to Operate Hazardous Waste Disposal.

[f] Female participation is at a minimum of 30% because (i) village and district officials must be included in the workshops and they are mostly men, and (ii) most workshops are held at the UP3 level (not at the village level) and will require women to travel away from their homes, which is difficult for women with young children.

[g] Scoring system: one workshop with 30% female participation will count as 1.0 point, while one workshop with 50% female participation will count as 1.25 points.

[h] The output indicator 3d is not related to the outcome indicator d. The output indicator 3d strengthens PLN's capacity to report on social dimensions and impact of its work, while the outcome indicator d measures social and gender impact by an independent evaluation.

[i] The Japan Fund for Poverty Reduction (JFPR) grant will support outcome indicator b (DLI 2) and outcome indicator d; output indicator 3b(DLI 7); and the initial framework for the first report for output indicator 3d. The JFPR grant will be disbursed against DLI 2 because of the importance of this DLI to JFPR.

[j] The Asian Clean Energy Fund grant will support output indicator 2a (DLI 5) and output indicator 2b.

Sources: Asian Development Bank and PLN.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=51114-001-3

1. Loan Agreement: Ordinary Operations
2. Grant Agreement: Japan Fund for Poverty Reduction
3. Grant Agreement: Asian Clean Energy Fund
4. Guarantee Agreement
5. Country Economic Indicators
6. Sector Assessment (Summary): Energy
7. Program Soundness Assessment
8. Program Results Assessment
9. Program Results Framework
10. Program Expenditure and Financing Assessment
11. Program Monitoring and Evaluation System Assessment
12. Program Fiduciary Systems Assessment
13. Program Safeguard Systems Assessment
14. Integrated Risk Assessment and Mitigating Measures
15. Program Action Plan
16. Program Implementation Document
17. Contribution to the ADB Results Framework
18. Development Coordination
19. Summary Poverty Reduction and Social Strategy
20. Japan Fund for Poverty Reduction Grant

Supplementary Documents

21. Program Scope of Work
22. Monitoring and Evaluation Framework
23. Procurement Monitoring Framework
24. Additional Information to Program Safeguard Systems Assessment
25. Procurement Assessment of Perusahaan Listrik Negara (State Electricity Corporation)
26. Integrity Disclosure
27. Financial Analysis of Perusahaan Listrik Negara (State Electricity Corporation)
28. Key Lessons Learned from Results-based Loans to Perusahaan Listrik Negara (State Electricity Corporation)

DISBURSEMENT-LINKED INDICATORS, VERIFICATION PROTOCOLS, AND DISBURSMENT SCHEDULE

Table A3.1: Disbursement-Linked Indicators

Disbursement-Linked Indicator	Baseline and Year	2020	2021	2022	2023	2024	2025
Outcome: Sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced.							
DLI 1. Expanded access to electricity services: Number of PLN customers in Kalimantan, Maluku, and Papua increased to reach at least 6.77 million customers by 2024.	2018 baseline: 5.22 million customers	At least 5.94 million customers (cumulative) connected	At least 6.12 million customers (cumulative) connected	At least 6.38 million customers (cumulative) connected	At least 6.58 million customers (cumulative) connected	At least 6.77 million customers (cumulative) connected	
DLI 2. Pro-poor and gender focus: An additional 112,428 poor HHs provided with PLN electricity by 2024, disaggregated by female/male-headed households, of which at least 10% are female-headed households: 2.1. All poor households 2.2. Poor female-headed households	2018 baseline: 0 additional poor households provided with PLN electricity. ***2019 Prior results*:** An interface module transfers the most recent TNP2K data on: 2.1.All poor households 2.2. All female- and male-headed households to PLN for PLN's use.	Additional poor HHs provided with PLN electricity, disaggregated by female/male-headed households: 2.1 At least 29,414 poor HHs 2.2 At least 2,941 poor female-headed HHs	Additional poor HHs (cumulative) provided with PLN electricity, disaggregated by female/male-headed households: 2.1 At least 51,808 poor HHs 2.2 At least 5,181 poor female-headed HHs	Additional poor HHs (cumulative) provided with PLN electricity, disaggregated by female/male-headed households: 2.1 At least 73,368 poor HHs 2.2 At least 7,337 poor female-headed HHs	Additional poor HHs (cumulative) provided with PLN electricity, disaggregated by female/male-headed households: 2.1 At least 92,866 poor HHs 2.2 At least 9,287 poor female-headed HHs	Additional poor HHs (cumulative) provided with PLN electricity, disaggregated by female/male-headed households: 2.1 At least 112,428 poor HHs 2.2 At least 11,243 poor female-headed HHs	
DLI 3. Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced to reach less than 17.12 per 100 ckm by 2024	2018 baseline: MV feeder permanent interruptions 23.29/ 100 ckm	MV feeder permanent interruptions less than 20.58 per 100 ckm	MV feeder permanent interruptions less than 19.55 per 100 ckm	MV feeder permanent interruptions less than 18.57 per 100 ckm	MV feeder permanent interruptions less than 17.83 per 100 ckm	MV feeder permanent interruptions less than 17.12 per 100 ckm	
Output 1. Power distribution network strengthened and expanded							

Disbursement-Linked Indicator	Baseline and Year	2020	2021	2022	2023	2024	2025
DLI 4. Installed length of MV distribution lines increased to reach at least 63,692 ckm by 2024	2018 baseline: 47,639 ckm of MV distribution lines installed	At least 53,885 ckm (cumulative) of MV distribution lines installed	At least 56,685 ckm (cumulative) of MV distribution lines installed	At least 58,792 ckm (cumulative) of MV distribution lines installed	At least 61,229 ckm (cumulative) of MV distribution lines installed	At least 63,692 ckm (cumulative) of MV distribution lines installed	
Output 2: Renewable energy use increased.							
DLI 5. Green energy promotion. Power generation from solar PVs (<10 MW), mini/micro-hydro (<1 MW), and small biogas plants (<100 kW) increased by 5.1. An additional 40,000 MWh annually by 2025. 5.2. A further additional 48,000 MWh annually by 2025	2018 baseline: zero additional MWh generated from solar PV, mini/micro-hydro, and small biogas plants.	(i) List of EBTKE assets to be transferred to PLN cleared by PLN. (ii) Model KSO or another legal instrument with PEMDA approved by relevant authority within PLN	5.1. Additional 9,600 MWh generated from solar PV, mini/micro-hydro, and small biogas plants 5.2. Another 4,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants	5.1. Additional 16,800 MWh generated from solar PV, mini/micro-hydro, and small biogas plants 5.2. Another 12,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants	5.1. Additional 25,600 MWh generated from solar PV, mini/micro-hydro, and small biogas plants 5.2. Another 24,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants	5.1. Additional 35,200 MWh generated from solar PV, mini/micro-hydro, and small biogas plants 5.2. Another 40,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants	5.1. Additional 40,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants 5.2. Another 48,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants
Output 3: Institutional capacity strengthened and social monitoring enhanced.							
DLI 6. Asset and waste management improved, with (i) 90% of used PLN-owned equipment in UIW of Kalimantan, Maluku and Papua included in the disposal inventory as of end-2019 safely disposed by 2025, and (ii) 25 additional warehouses holding environmental permit in Kalimantan, Maluku and Papua by 2024	2018 baseline: 0% disposal rate 0 additional warehouses with permit from DLH	(i) Inventory of used equipment for disposal as of end-2019 prepared by UIWs (ii) 5 additional warehouses have secured the environment permit from DLH	(i) 20% of inventory of used equipment for disposal as of end-2019 approved by MSOE (ii) 10 (cumulative) additional warehouses have secured the environment permit from DLH	(i) 40% of inventory of used equipment for disposal as of end-2019 approved by MSOE (ii) 20% of 2019 inventory safely disposed (iii) 15 (cumulative) additional warehouses have secured the environment permit from DLH	(i) 65% of inventory of used equipment for disposal as of end-2019 approved by MSOE (ii) 40% of 2019 inventory safely disposed (iii) 20 (cumulative) additional warehouses have secured the environment permit from DLH	(i) 90% of inventory of used equipment for disposal as of end-2019 approved by MSOE (ii) 65% of 2019 inventory safely disposed (iii) 25 (cumulative) additional warehouses have secured the environment permit from the DLH	(i) 100% of inventory of used equipment for disposal as of end-2019 approved by MSOE (ii) 90% of 2019 inventory safely disposed

Disbursement-Linked Indicator	Baseline and Year	2020	2021	2022	2023	2024	2025
DLI 7. Consumer education: By 2024, consumer education workshops on safe and productive energy use implemented by 5 UIW and 29 UP3 offices, with a minimum of 30% female participation for each workshop, based on a scoring system to promote female participation	2019 baseline: 0 workshop, 0 points.	(i) Consumer training materials for safe & productive energy use developed and shared with UIW offices. (ii) One workshop in each of the 5 UIW with minimum 30% female participation. *Minimum points required for disbursement: 5*	Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 34*	Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 63*	Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 92*	Consumer education workshops held at UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 121*	
DLI 8. E-Procurement and SAP systems are integrated and rolled out by 2020, and at least 80% of contracts in financial value are recorded in the E-Procurement-SAP integrated system by 2024	2018 baseline: E-Proc and SAP systems are separate. *Prior results:* E-Proc and SAP are integrated.	E-Proc and SAP integrated system is rolled out.	At least 50% of contracts in financial value executed by UIWs (including units under them) recorded in E-Proc+SAP integrated system	At least 60% of contracts in financial value executed by UIWs (including units under them) recorded in E-Proc+SAP integrated system	At least 70% of contracts in financial value executed by UIWs (including units under them) recorded in E-Proc+SAP integrated system	At least 80% of contracts in financial value executed by UIWs (including units under them) recorded in E-Proc+SAP integrated system	

ckm = circuit kilometer; DLH = Provincial/District Environmental Agency (*Dinas Lingkungan Hidup*); DLI = disbursement-linked indicator; EBTKE = Directorate General of New and Renewable Energy and Energy Conservation; E-Proc = electronic procurement; HH = household; KSO = Memorandum of Understanding (*Kontrak Kerjasama Operasi*); kV = kilovolt; kW = kilowatt; MOU = memorandum of understanding; MSOE = Ministry of State Owned Enterprises; MW = megawatt; MWh = megawatt hour; PEMDA = local government (province, district or subdistrict); PLN = State Electricity Corporation (*Perusahaan Listrik Negara*); PV = photovoltaic (system); SAP = Systems, Applications, Products in Data Processing (an integrated business software); TNP2K = National Team for Accelerating Poverty Reduction (*Tim Nasional Percepatan Penanggulangan Kemiskinan*); UIW = Regional Administrative Unit (*Unit Induk Wilayah*); UP3 = *Customer Service Implementation Unit.*

Note: The Japan Fund for Poverty Reduction (JFPR) grant will support a subset of the results framework (notably, DLI 2 and DLI 7) and the initial framework for the first annual report on social impact of electrification. The JFPR grant will be disbursed against DLI 2 because of the importance of this DLI to JFPR. The ACEF grant will support DLI 5 and will be disbursed against DLI 5.

Source: ADB and PLN staff estimates.

Table A3.2: Verification Protocols

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
Outcome: Sustainable, equitable, and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced.			
DLI 1: Expanded access to electricity services: Number of PLN customers in Kalimantan, Maluku and Papua increased to reach at least 6.77 million customers by 2024.			
2018 Baseline: 5.22 million customers **2020:** At least 5.94 million customers (cumulative) connected **2021:** At least 6.12 million customers (cumulative) connected **2022:** At least 6.38 million customers (cumulative) connected **2023:** At least 6.58 million customers (cumulative) connected **2024:** At least 6.77 million customers (cumulative) connected	**Definition** of DLI 1 is the number of customers served by PLN in Kalimantan, Maluku, and Papua as recorded in PLN distribution systems for a given year. Customers include residential, commercial, industrial, and other customers. **Conditions for disbursement** are met if the number of cumulative PLN customers for a given year reaches or exceeds the target number specified for that year (as indicated in the first column). **Partial disbursement**. The DLI is scalable and partial disbursement is allowed. If the target is not fully achieved, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period) / (targeted achievement of the current period–targeted achievement of the previous period).* Disbursements are allowed for early or late achievement of the DLI. This means that the planned disbursement amount for a given year can be released when the target is fully achieved, even if the achievement is late, as long as the achievement is during the program's duration. Early payment is also allowed when the target is achieved earlier than scheduled.	PLN databases and annual statistics. Required frequency for reporting will be annual, and PLN and ADB may agree each year on interim reporting arrangements as appropriate. Monitoring may be as frequent as PLN wishes.	Each year, the focal unit(s) in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year in the concerned UIW offices, DIV PR-KAL, and DIV PR-MP. The IVA will also verify the results by spot checks of the system at district and province level. The IVA will refer to the verification protocols and other relevant guidelines prepared for the program. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.
DLI 2. Pro-poor and gender focus: Poor HHs provided with PLN electricity by 2024, disaggregated by female/male-headed households: **2.1. An additional 112,428 HHs** **2.2. Of the 112,428 HHs, at least 10% are female-headed households**			
2018 baseline: 0 additional poor households provided with PLN electricity **2019 Prior Results**: *Prior results*: An interface	**Definition** of DLI 2 is the number of poor households connected to electricity by PLN, disaggregated by male- and female-headed households. The definitions of "poor household" and "female-headed household" are those of the local governments, as reported and updated in the central database of TNP2K, which PLN also uses for identifying households eligible for electricity tariff subsidies.	PLN databases and annual statistics. Required frequency for reporting will be annual, and PLN and ADB may agree each year on interim reporting	Each year, the focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year in DIV PKK and in local government records, including for the targeting of poor households and female-headed

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
module transfers the most recent TNP2K data on **2.1.** All poor households **2.2.** Female- and male-headed households to PLN for PLN's use. **Annual Targets**: Minimum number of poor households provided with PLN electricity and disaggregated by female/male-headed households: **2020:** **2.1.** 29,414 additional poor HHs of which **2.2.** 2,941 female-headed households **2021:** **2.1.** 51,808 additional poor HHs (cumulative), of which **2.2.** 5,181 female-headed households **2022:** **2.1.** 73,368 additional poor HHs (cumulative) of which **2.2.** 7,337 female-headed households **2023:** **2.1.** 92,866 additional poor HHs (cumulative) of which **2.2.** 9,287 female-headed households **2024:** **2.1.** 112,428 additional poor HHs (cumulative) of which **2.2.** 11,243 female-headed households	The interface module under 2019 Prior Results is executed satisfactorily when PLN is able to use the data in 2020 for identifying poor households and male-headed and female-headed poor households for the purpose of household connections in Kalimantan, Papua, and Maluku. **Conditions for loan disbursement** are met if, for a given year, the targets and sub-targets specified for that year are met (as indicated in the first column). The JFPR grant will be used to support loan targets and sub-targets. **Partial disbursement**. The DLI is scalable and partial disbursement is allowed for both target and sub-targets in accordance with the allocations for each in Table A3.3. If the target/sub-target is not fully achieved, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period) / (targeted achievement of the current period–targeted achievement of the previous period).* Disbursements are allowed for early or late achievement of the DLI. This means that the planned disbursement amount for a given year can be released when the set targets are fully achieved even if the achievement is late, as long as the achievement is during the program's duration. Early payment is also allowed when achievement is earlier than scheduled.	arrangements as appropriate. Monitoring may be as frequent as PLN wishes.	households. The IVA will also verify the results by spot checks and interviews as needed at district, subdistrict (*camat*) and village level. The IVA will refer to the verification guidelines prepared for the program. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
DLI 3. Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced to reach less than 17.12 per 100 ckm by 2024			
2018 baseline: MV feeder permanent interruptions 23.29/ 100 ckm **2020:** MV feeder permanent interruptions less than 20.58 per 100 ckm **2021:** MV feeder permanent interruptions less than 19.55 per 100 ckm **2022:** MV feeder permanent interruptions less than 18.57 per 100 ckm **2023:** MV feeder permanent interruptions less than 17.83 per 100 ckm **2024:** MV feeder permanent interruptions less than 17.12 per 100 ckm	**Definition.** This is defined as the number of 20 kV feeder permanent interruptions per 100 ckm of lines within the distribution system. Permanent interruptions are defined by PLN as those longer than 5 minutes. The interruptions related to generation and transmission faults are excluded. **Conditions for disbursement** are met for a given year, if the yearly permanent interruptions are below the target value specified for that year (first column). **Partial disbursement.** The DLI is scalable and partial disbursement is allowed. If the target is not fully achieved, then disbursement can be proportional to the reduction made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual reduction achieved of the current period–targeted reduction of the previous period) / (targeted reduction of the current period–targeted reduction of the previous period).* Early achievement of this DLI is not possible as these are annual (not cumulative) targets. Late achievement is possible, when PLN makes up for the excess in the number of feeder line interruptions in past years by overachieving, i.e. being below, the annual target in subsequent years by an equivalent amount.	The number of permanent interruptions on each feeder is available from the trip counter and is recorded at the substations. These figures are already being retrieved and computed, along with feeder lengths, by DIV PKK. Required frequency for reporting will be annual. Monitoring may be as frequent as PLN wishes.	Each year, the focal unit(s) in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year in DIV PKK, DIVPR-KAL, and DIVPR-MP. The IVA will also verify the results by spot checks of the system at UP3, UIW, district and province level. The IVA will refer to the verification protocols and other relevant guidelines prepared for the program. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.
Output 1. Power distribution network strengthened and expanded			
DLI 4. Installed length of MV distribution lines increased to reach at least 63,692 ckm by 2024.			
2018 baseline: 47,639 ckm of MV distribution lines installed **2020:** At least 53,885 ckm (cumulative) of MV distribution lines installed **2021:** At least 56,685 ckm (cumulative) of MV distribution lines installed **2022:** At least 58,792 ckm (cumulative) of MV distribution lines installed	**Definition.** Medium-voltage lines are the 20 kV lines transferring electricity from electrical substations to distribution transformers. This is calculated by adding each year's additional lines installed (in ckm) to the previous year's installed lines, to obtain the cumulative total. **Conditions for disbursement** are met for a specific year when the cumulative total of PLN's medium-voltage distribution lines installed meets or exceeds the given target specified for that year (as indicated in the first column). **Partial disbursement.** The DLI is scalable and partial disbursement is allowed. If the target is not fully achieved, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied:	PLN databases and annual statistics. Required frequency for reporting will be annual, and PLN and ADB may agree each year on interim reporting arrangements as appropriate.	Each year, the focal unit(s) in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year in DIV PKK, DIVPR-KAL, and DIVPR-MP. The IVA will also verify the results by spot checks of the system at UP3, UIW, district, and province level. The IVA will refer to the verification protocols and other relevant guidelines prepared for the program. The IVA

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
2023: At least 61,229 ckm (cumulative) of MV distribution lines installed **2024:** At least 63,692 ckm (cumulative) of MV distribution lines installed	*Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period) / (targeted achievement of the current period–targeted achievement of the previous period).* Disbursements are allowed for early or late achievement of the DLI. This means that the planned disbursement amount for a given year can be released when the set target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration. Early payment is also allowed when achievement is earlier than scheduled.	Monitoring may be as frequent as PLN wishes.	report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.
Output 2: Renewable energy use increased.			
DLI 5. Green energy promotion: Power generation from solar PVs (<10 MW), mini/micro-hydro (<1 MW), and small biogas plants (<100 kW) increased by: **5.1. An additional 40,000 MWh annually by 2025** **5.2. A further additional 48,000 MWh annually by 2025**			
2018 baseline: zero additional MWh generated from solar PV, mini/micro-hydro, and small biogas plants **2020:** (i) List of EBTKE assets to be transferred to PLN cleared by PLN. (ii) Model KSO or another legal instrument with PEMDA approved by relevant authority within PLN. **2021:** **5.1.** Additional 9,600 MWh generated from solar PV, mini/micro-hydro, and small biogas plants. **5.2.** A further additional 4,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants **2022:**	**Definition.** DLI 5 measures power generation from solar PVs (<10 MW), mini/micro-hydro sources (<1 MW), and small biogas plants (<100 kW) in MWh. The MWh information is available in SILM. The MWh from solar PVs, mini/micro-hydro, and small biogas plants will be counted as long as this is obtained through the following modes: (i) PLN continued to maintain and operate PLN-owned solar PVs, mini/micro-hydro power plants, and small biogas plants. (ii) PLN makes non-functioning or poorly functioning solar PVs operationally functional and connects these to villages and households. The solar PVs may have been originally installed by the community themselves, or by local government, by an independent power producer, by EBTKE, or by PLN. (iii) PLN purchases power from solar PVs, mini/micro-hydro, and small biogas independent power producers. "Approval" of the KSO/MOUs in 2020 means official endorsement and signing off by the relevant authority within PLN. **Conditions for disbursement** are met for a specific year when the annual MWh output generated from solar PVs, mini/micro-hydro sources, and small biogas plants meets or exceeds the given target specified for that year (first column).	PLN databases and annual statistics. Required frequency for reporting will be annual, and PLN and ADB may agree each year on interim reporting arrangements as appropriate. Monitoring may be as frequent as PLN wishes.	Each year, the focal unit(s) in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year in DIV PKK, DIV PR-KAL, and DIV PR-MP. The IVA will also verify the results by spot checks of the system at village, district and province level. The IVA will refer to the verification protocols and other relevant guidelines prepared for the program. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
5.1. Additional 16,800 MWh generated from solar PV, mini/micro-hydro, and small biogas plants... **5.2.** A further additional 12,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants **2023:** **5.1.** Additional 25,600 MWh generated from solar PV, mini/micro-hydro, and small biogas plants. **5.2.** A further additional 24,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants **2024:** **5.1.** Additional 35,200 MWh generated from solar PV, mini/micro-hydro, and small biogas plants. **5.2.** A further additional 40,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants **2025:** **5.1.** Additional 40,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants. **5.2.** A further additional 48,000 MWh generated from solar PV, mini/micro-hydro, and small biogas plants.	**Partial disbursement.** For the quantitative targets in MWh (i.e., for 2021, 2022, 2023, and 2024), the DLI is scalable and partial disbursement is allowed. If the target is not fully achieved, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period)/ (targeted achievement of the current period–targeted achievement of the previous period).* For 2020, the targets are two institutional actions, each of which represents 50% of the disbursement allocation for 2020. Disbursement is allowed only upon the completion of the specific action, meaning that for a given action, no partial disbursement is allowed. Early payment is allowed when achievement is earlier than scheduled. For late achievement of the DLI, the planned disbursement amount for a given year can be released only when the cumulative MWh for that year is achieved and the achievement is during the program's duration.		

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
Output 3: Institutional capacity strengthened and social monitoring enhanced.			
DLI 6. Asset and waste management improved, with (i) 90% of used PLN-owned equipment in UIW of Kalimantan, Maluku and Papua included in the disposal inventory as of end-2019 safely disposed by 2025, and (ii) 25 additional warehouses holding environmental permit in Kalimantan, Maluku and Papua by 2024			
2018 baseline: 0% disposal rate. 0 additional warehouses with permit from DLH **2020:** (i) 2019 inventory prepared by UIWs. (ii) 5 additional warehouses obtain permit from DLH **2021:** (i) 20% of inventory of used equipment for disposal as of end-2019 approved by the MSOE. (ii) 10 additional warehouses (cumulative) obtain permit from DLH **2022:** (i) 40% of inventory of used equipment for disposal as of end-2019 approved by MSOE. (ii) 20% of 2019 inventory safely disposed. (iii) 15 additional warehouses (cumulative) obtain permit from DLH **2023:** (i) 65% of inventory of used equipment for disposal as of end-2019 approved by MSOE. (ii) 40% of 2019 inventory safely disposed. (iii) 20 additional warehouses (cumulative) obtain permit from DLH **2024:** (i) 90% of inventory of used equipment for disposal as of end-2019 approved by MSOE. (ii)	**Definitions:** The percentage of "the used equipment safely disposed" will be calculated on the basis of the original value of assets which are stocked at PLN warehouse sites in Kalimantan, Maluku, and Papua. The "disposal inventory" is a nationwide inventory of all PLN used equipment that are intended for disposal. The "permit from DLH" refers to the Environmental Permit (*Ijin Lingkungan*), which has to be obtained for each warehouse from the provincial or district environmental agency (*Dinas Lingkungan Hidup*). "Used PLN equipment" means PLN's assets and wastes (such as poles, cables, transformers, and meters) that are out of use, which have been discharged from distribution operations. "Assets" and "wastes" are the same in nature, but "assets" become "wastes" once these are approved as "waste" by the relevant authorities. "Safe disposal" means disposing of equipment through the following process: *Used equipment*, still considered as Government *assets*, are required to go through internal audit and verification within PLN involving the MSOE. *Broken materials of less than 5 years economic life* can be disposed through auction at the discretion of PLN headquarters, after approval of the PLN Board of Commissioners. *Used assets of more than 5 years of economic life* are disposed after approval by the MSOE. The process of inventory, review, audit, and verification by different units is further subject to legal requirements for the relevant authority to sign accountability statements. **Conditions for disbursement** are met for a specific year when the institutional actions and/or percentage targets set for that year (as indicated in the first column) are achieved. **Partial disbursement**. Partial disbursements are allowed as follows. For 2020, 2021, and 2025, each year has two institutional actions (each representing 50% of the disbursement allocation for that year), while 2022, 2023, and 2024 require three actions (each representing 33% of the disbursement allocation for that year). Partial disbursement	PLN UIW records and PLN central records. Required frequency for reporting will be annual, and PLN and ADB may agree each year on interim reporting arrangements as appropriate. Monitoring may be as frequent as PLN wishes.	Each year, the focal unit(s) in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year. The IVA will refer to the government guidance for asset management and the verification protocols. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
65% of 2019 inventory safely disposed. (iii) 25 additional warehouses (cumulative) obtain permit from DLH **2025:** (i) 100% inventory of used equipment for disposal as of end-2019 approved by MSOE. (ii) 90% of 2019 inventory safely disposed.	can therefore be made for a given year proportional to the number of actions completed. Partial disbursement is also permitted within a single institutional action. For example, within the component relating to percentage of waste disposal, and the component relating to the number of warehouses having obtained permits from DLH, partial disbursement can be made for each component following the formula. *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period)/ (targeted achievement of the current period–targeted achievement of the previous period).* However, partial disbursement cannot be made for the action relating to the approval by the MSOE of the 2019 inventory of used equipment for disposal. Disbursements are allowed for early or late achievement of the DLI, including the institutional actions mentioned above. This means that the planned disbursement amount for a given year can be released when the set target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration. Early payment is also allowed when achievement is earlier than scheduled.		
DLI 7. Consumer education: By 2024, consumer education workshops on safe and productive energy use are implemented by 5 UIW and 29 UP3 offices, with a minimum of 30% female participation for each workshop, based on a scoring system to promote female participation			
2018 baseline: 0 consumer education workshops on safe and productive energy use. **2020**: (i) Consumer training materials for safe & productive energy use developed and shared with UIW offices. (ii) One workshop in each of the 5 UIW with minimum 30% female participation. *Minimum points required for disbursement: 5*	**Definitions:** The consumer education workshops are defined as those held by PLN for consumers/customers who are connected, planning to be connected, or in the process of connection, with the workshop curriculum on safe and productive energy use agreed to by PLN and ADB. "Female participation" is calculated as the percentage of women consumers among total consumers participating in the workshop, and not the authorities officiating at the workshop. **Counting the workshops**: The workshop(s) will be counted as 1 workshop only when the number of participants from the community reaches or exceeds 100 persons. This 100 person threshold may be reached by (i) having a single workshop with at least 100 participants from the community, or (ii) holding a number of smaller workshops where the participants from the communities add up to at least 100 persons across these workshops (example: 3 workshops with	PLN UIW records and PLN central records. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Each year, the focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year with UIW and UP3 records, participant lists, and with the social resource person(s) The IVA will refer to the verification guidelines prepared for the program. The IVA report will then be attached to the PLN report.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
2021: Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 34* **2022:** Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 63* **2023:** Consumer education workshops held at each of 29 UP3 with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 92* **2024:** Consumer education workshops held at UP3 level with minimum 30% female participation among consumers. *Cumulative points required for disbursement: 121.*	respectively 20, 40 and 40 community participants—in this case, these 3 smaller workshops combined count as 1 workshop). **"Scoring system":** 1 workshop with 30% female participation counts as 1 point, while 1 workshop with female participation of 50% and above counts as 1.25 points. Workshops with less than 30% female participation will not earn any points. This means that having workshops with 50% female participation will earn more points, leading to fewer workshops required in the last year. **Conditions for disbursement** are met for a specific year when the required number of points for that year (first column) is achieved with not less than 30% female participation. For 2020, completion of (i) is required and cannot be partially disbursed, while (ii) is scalable, meaning that partial disbursement is allowed. For disbursement of allocated amounts (Table A3.3) for 2021, 2022, and 2023, the following are required: (i) a minimum of 29 points each year, (ii) workshops held at each of the 29 UP3 (iii) each workshop having at least 30% female participation. The corresponding number of required cumulative points are stated in column 1. For 2024, disbursement is allowed when the cumulative number of points achieved over the period 2021–2024 reaches or exceeds 121 points. **Partial disbursement.** Much of the DLI is scalable and partial disbursement is allowed according to the number of points accrued. If the target is not fully achieved in any given year, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period)/ (targeted achievement of the current period–targeted achievement of the previous period).* However, for the 30% female participation, the DLI is not scalable, and full disbursement is made only when female participation is not less than 30%. Disbursements are allowed for late achievement of the DLI. This means that the planned disbursement amount for a given year can be released when the target number of points is fully achieved even if the achievement is late, as long as the achievement is during the		Within one month of receiving the validated report, ADB will confirm whether the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
	program's duration. However, within a given year, training has to cover a certain number of UP3 levels, and therefore, early achievement cannot be made more than a year in advance.		
DLI 8. E-Procurement and SAP systems are integrated and rolled out by 2020, and at least 80% of contracts in financial value are recorded in the E-Proc+SAP integrated system by 2024.			
2018 baseline: E-Procurement (E-Proc) and SAP systems are separate. **Prior results 2019:** E-Proc and SAP are integrated. **2020:** E-Proc+SAP integrated system is rolled out. **2021:** At least 50% of contracts in financial value executed by UIW (including units under them) recorded in E-Proc+SAP integrated system. **2022:** At least 60% of contracts in financial value executed by UIW (including units under them) recorded in E-Proc+SAP integrated system **2023:** At least 70% of contracts in financial value executed by UIW (including units under them) recorded in E-Proc+SAP integrated system **2024:** At least 80% of contracts in financial value executed by UIW	**Definitions:** The baseline situation in 2018 is that (i) only a small proportion of contracts are recorded in E-Proc, and (ii) E-Proc system and SAP system are separate systems, not integrated. *Integration of the two systems* means that one report is generated by an E-Proc+SAP system for a given procurement transaction. An internal letter is sent by PLN headquarters to the regions instructing them the system is ready for use. *Rolled out* means that the access has been granted to UIWs and units under them, and that the relevant staff (e.g., for the first year of roll-out) have been trained in the use of the system. *Contracts executed* means contracts that have been awarded, with corresponding legal commitments signed by both parties. For disbursement trigger points in 2021, 2022, 2023 and 2024, the percentages relate to the following denominator and numerator: *Denominator*: Total value of procurement contracts executed by UIW and units under them. *Numerator*: Total value of procurement contracts *recorded* in the E-Proc+SAP system. "Recorded" means a procurement contract is recorded in the E-Proc+SAP system, whether e-procurement was used for the actual tendering process, or whether the procurement contract was recorded in the e-procurement system only after the contract award/tendering. **Conditions for disbursement** are met for a specific year when the required conditions for that year (as indicated in the first column) is achieved. **Partial disbursement.** For 2020, completion of systems integration is required and cannot be partially disbursed. The rest of the DLI is scalable and partial disbursement is allowed according to the percentage of total contracts executed that have been recorded in the integrated E-Proc+SAP system in terms of financial value.	PLN UIW records and PLN central records. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Each year, the focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report. The IVA will verify the results each year with UIW and UP3 records and the E-Proc+SAP system records. The IVA will refer to the verification guidelines prepared for the program. The IVA report will then be attached to the PLN report. Within one month of receiving the validated report, ADB will confirm whether the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
(including units under them) recorded in E-Proc+SAP integrated system	If the target is not fully achieved, then disbursement can be proportional to the increase made from the previous year's targeted achievement. The following formula will be applied: *Partial DLI disbursement = planned DLI disbursement for the period × (actual achievement of the current period–targeted achievement of the previous period)/ (targeted achievement of the current period–targeted achievement of the previous period).* Disbursements are allowed for early or late achievement of the DLI, including the institutional actions mentioned above. This means that the planned disbursement amount for a given year can be released when the target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration. Early payment is also allowed when achievement is earlier than scheduled.		

ADB = Asian Development Bank, ckm = circuit kilometer, DIV COM = Division of Communication and Corporate Social Responsibility, DIV PKK = Division of Corporate Performance Control, DIV PR-KAL = Division of Regional Development for Kalimantan, DIV PR-MP = Division of Regional Development for Maluku-Papua, DLI = disbursement-linked indicator, EBTKE = Directorate General of New Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources, HH = household, IVA = independent verification agency, JFPR = Japan Fund for Poverty Reduction, KSO = *Kontrak Kerjasama Operasi* or Memorandum of Understanding, kW = kilowatt, MSOE = Ministry of State Owned Enterprises, MV = medium voltage, MWh = megawatt hour, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), PV = photovoltaic (system), SILM = PLN's Management Reporting Information System (*Sistem Informasi Laporan Manajemen*), UIW = Regional Administrative Unit (*Unit Induk Wilayah*), UP3 = Customer Service Implementation Unit *(Unit Pelaksana Pelayanan Pelanggan).*

Sources: ADB, PLN management information systems, and Electricity Power Supply Business Plan (RUPTL) 2019–2028.

Table A3.3: Disbursement Schedule

($ million)

Disbursement-Linked Indicator	Total Financing Allocation	Share of Loan (%)	Prior Results	2020	2021	2022	2023	2024	2025
Outcome									
DLI 1: Number of PLN customers in Kalimantan, Maluku and Papua increased to reach at least 6.77 million customers by 2024	150.0	25.0	-	30.0	30.0	30.0	30.0	30.0	-
DLI 2: An additional 112,428 poor households provided with PLN electricity by 2024, disaggregated by female/male-headed households, of which at least 10% are female-headed households	75.0	12.5	30.0	9.0	9.0	9.0	9.0	9.0	-
2.1. All poor households	*60.0*	*10.0*	*25.0*	*7.0*	*7.0*	*7.0*	*7.0*	*7.0*	-
2.1. All poor households (JFPR Grant)	*3.0*	*-*	*0.6*	*1.0*	*1.0*	*0.4*	*-*	*-*	*-*
2.2. Poor female-headed households	*15.0*	*2.5*	*5.0*	*2.0*	*2.0*	*2.0*	*2.0*	*2.0*	-
DLI 3: Feeder line permanent interruptions in the distribution system reduced to reach less than 17.12 per 100 ckm by 2024	90.0	15.0	-	18.0	18.0	18.0	18.0	18.0	-
Outputs									
DLI 4: Installed length of MV distribution lines increased to reach at least 63,692 ckm by 2024	120.0	20.0	-	24.0	24.0	24.0	24.0	24.0	-
DLI 5: Power generation from solar PVs (<10 megawatts), mini/micro-hydro (<1 megawatt), and small biogas plants (<100 kilowatts) increased by:	50.0	8.3	-	5.0	9.0	9.0	9.0	9.0	9.0
5.1. Additional 40,000 MWh annually by 2025 based on RUPTL 2019	*30.0*	*5.0*	*-*	*5.0*	*5.0*	*5.0*	*5.0*	*5.0*	*5.0*
5.1. Additional 40,000 MWh annually by 2025 (ACEF Grant)	*3.0*	*-*		*1.0*	*1.0*	*1.0*	*-*	*-*	*-*
5.2 Further additional 48,000 MWh annually by 2025	*20.0*	*3.3*	*-*	*-*	*4.0*	*4.0*	*4.0*	*4.0*	*4.0*
DLI 6: Asset and waste management improved, with (i) 90% of used PLN-owned equipment in Kalimantan, Maluku and Papua included in the disposal inventory as of end-2019 safely disposed by 2025, and (ii) 25 additional warehouses holding environmental permits	65.0	10.8	-	11.0	11.0	11.0	11.0	11.0	10.0
DLI 7: By 2024, consumer education workshops on safe and productive energy use implemented by 5 UIW and 29 UP3 offices, with a minimum of 30% female participation for each workshop, based on a scoring system to promote female participation	30.0	5.0	-	6.0	6.0	6.0	6.0	6.0	-
DLI 8. E-Procurement and SAP systems are integrated and rolled out by 2020, and at least 80% of contracts in financial value are recorded in the E-Procurement+SAP integrated system by 2024	20.0	3.3	4.0	-	4.0	4.0	4.0	4.0	-
TOTAL (ADB loan)	**600.0**	**100.0**	**34.0**	**103.0**	**111.0**	**111.0**	**111.0**	**111.0**	**19.0**
TOTAL (JFPR grant and ACEF grant)	***6.0***	***-***	***0.6***	***2.0***	***2.0***	***1.4***	***-***	***-***	***-***

ACEF = Asian Clean Energy Fund; ADB = Asian Development Bank; ckm = circuit-kilometer; DLI = disbursement-linked indicator; JFPR = Japan Fund for Poverty Reduction; MV = medium voltage; MWh = megawatt hour; PLN = State Electricity Corporation (*Perusahaan Listrik Negara*); PV = photovoltaic (system); RUPTL = Electricity Power Supply Business Plan (Rencana Usaha Penyediaan Tenaga Listrik); SAP = Systems, Applications, Products in Data Processing (an integrated business software); UIW = Regional Administrative Unit (*Unit Induk Wilayah*); UP3 = Customer Service Implementation Unit (*Unit Pelaksana Pelayanan Pelanggan*).

Notes: (i) Numbers may not sum precisely because of rounding; (ii) Table A3.2 provides further details on disbursement allocations for different components of a DLI; (iii) the JFPR grant will support a subset of the results framework and will be disbursed against DLI 2 because of the importance of this DLI to JFPR; and (iv) the ACEF grant will support DLI 5.

Sources: ADB and PLN staff estimates.