Program Implementation Document

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Perusahaan Listrik Negara
Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program
(Guaranteed by the Republic of Indonesia)

CONTENTS

PURPOSE OF THE PROGRAM IMPLEMENTATION DOCUMENT

1. The developing member country (DMC) is wholly responsible for implementing the program supported by results-based lending (RBL). The Asian Development Bank (ADB) staff support the results-based lending program design and implementation.

2. The program implementation document (PID) consolidates the essential program implementation information. The PID is a management tool which supports effective program implementation, monitoring, and reporting. It is developed throughout the program processing, and should be discussed with the DMC at Loan Negotiations. It is a living document that should be refined and kept up to date during program implementation.

Abbreviations

ADB	=	Asian Development Bank
DLIs	=	disbursement-linked indicators
DMC	=	developing member country
EGDP	=	Electricity Grid Development Program
EPC	=	engineering, procurement, and construction
GW	=	gigawatts
GWh	=	gigawatt-hours
IVA	=	independent verification agency
kV	=	kilovolt
M&E	=	monitoring and evaluation
MOF	=	Ministry of Finance
MSOE	=	Ministry of State-Owned Enterprises
MVA	=	megavolt-ampere
PAP	=	program action plan
PID	=	program implementation document
PLN	=	Perusahaan Listrik Negara (State Electricity Corporation)
RBL	=	results-based lending
RPJMN	=	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
RPJPN	=	Rencana Pembangunan Jangka Panjang Nasional (National Long-Term Development Plan)
RRP	=	report and recommendation of the President
RUPTL	=	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Power Supply Business Plan)
SILM	=	Sistem Informasi Laporan Manajemen (Management Reporting Information System)
SPKK	=	Satuan Pengendalian Kinerja Korporat (Corporate Performance Control)
TWh	=	terawatt-hours

I. PROGRAM DESCRIPTION

1. The role of the energy sector as a key enabler of inclusive growth has become more important as the Government of Indonesia is faced with the challenge of expanding its economy. The annual rate of growth declined from 6.4% in 2010 to 5.0% in 2016 and is expected to remain at 5.1% in 2017. Improved access to affordable and sustainable forms of energy is critical to enhance competitiveness, not only in the country's manufacturing and commercial centers, but also in remote areas. Lack of access to energy constrains efforts to transform the eastern part of Indonesia into a new growth engine with a focus on high-value agriculture, fisheries, small and medium-sized enterprises, and tourism, all of which rely on a stable energy supply. Uneven development across provinces has contributed toward widening income disparities, with several provinces in Eastern Indonesia lagging significantly behind Java and Bali.[1]

2. To address this, the government has prioritized accelerating investment in infrastructure under the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional,* or RPJMN), 2015–2019, which explicitly includes the "outer" and eastern regions as geographical priorities. One of its pillars is to improve access to electricity services significantly by adding 35 gigawatts of generation capacity and expanding power grids to raise the national electrification ratio from 84% in 2014 to 97% by the end of 2019. Eastern Indonesia, where power grids across the islands are isolated, of poor quality, and underdeveloped, presents the greatest challenge to the achievement of these targets. The electrification ratios in some eastern provinces are particularly low—74% in West Sulawesi, 67% in Southeast Sulawesi, 68% in West Nusa Tenggara, 59% in East Nusa Tenggara, and 44% in Papua.[2]

3. The proposed $600 million loan for the Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program aims to support the development of electricity distribution networks to connect businesses and households and to enhance the quality of life in Eastern Indonesia by the sustainable use of electricity as a key driver of increased economic activity. The program will complement a proposed sector loan for small- to mid-sized natural gas-fired power stations across Eastern Indonesia. Natural gas is a much cleaner fuel compared to diesel and the quick-responding nature of gas-fired engines and turbines make these a good match for intermittent renewable energy sources such as solar and wind.[3] It is an appropriate transition fuel to move towards a low-carbon energy system. The two loans will help enhance access to sustainable energy services, consistent with the Sustainable Development Goals (goal 7: affordable and clean energy) and the Paris Agreement on climate change.[4]

4. The overall investment needs for the government's generation, transmission, and distribution program are $83.5 billion, of which $43.5 billion is to come from the private sector (independent power producers) and the balance of $40 billion from the State Electricity Corporation (*Perusahaan Listrik Negara* or PLN)[5]. PLN will not be able to meet the investment needs on their own and has an estimated funding gap of $30.3 billion, which will have to be borne by other financing sources, including from development partners. In Eastern Indonesia, where

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[1] For example, Jakarta's 2015 nominal annual per capita income ($14,727) was 13 times higher than that of East Nusa Tenggara ($1,147). The income gap between the poorest and richest regions has widened since 2010.

[2] PLN Management Reporting Information System (*Sistem Informasi Laporan Manajemen* [SILM]).

[3] Eastern Indonesia is considered to have significant wind and solar resources. ADB is supporting the government on wind and solar tariffs to help spur project development.

[4] United Nations General Assembly. 2015. *Transforming Our World: The 2030 Agenda for Sustainable Development.* New York; Paris Agreement under the United Nations Framework Convention on Climate Change.

[5] The breakdown is (i) $15.5 billion for generation, (ii) $17 billion for transmission, and (iii) $7.5 billion for distribution.

there are many isolated grids, PLN is already using its own resources to establish 70 kilovolt (kV) and 150 kV backbone transmission systems while seeking support from ADB and other partners to strengthen and expand local distribution networks.[6]

5. The government has taken several measures to strengthen PLN's financial ability to undertake this planned expansion, and to improve the investment climate for the private sector. The government increased electricity tariffs in 2014, and in 2015 instituted tariffs based on cost recovery and automatic price adjustment for all but the poorest households. Further, the government infused nearly $500 million in equity to PLN in 2015 and $1.8 billion in 2016. It is also piloting a new subsidy setting approach that will rely on performance and incentivize PLN to operate more efficiently in order to capture additional savings. This aims to improve PLN's financial status and its ability to raise debt. In 2015, the government passed regulations that allow PLN to borrow directly from bilateral and multilateral agencies against a sovereign-backed guarantee.

6. The RBL program will finance a portion of the overall broader program needs as identified in PLN's RUPTL, 2017–2026 for strengthening and expanding the power distribution network in Eastern Indonesia. It builds on the experience and lessons learned from the ongoing RBL program for grid strengthening in Sumatra.[7] The RBL is a suitable modality as (i) it uses PLN's own systems, such that the agreed program actions will directly contribute to institutional strengthening beyond the RBL program's geographical coverage; (ii) its focus on results rather than expenditures will help establish a stronger evaluation culture complementary to the government's intent to provide incentives based on corporate performance; (iii) it helps lower the transaction costs involved in managing thousands of small-scale activities and expenditures to develop the distribution network;[8] and (iv) it will enable PLN, government stakeholders, and development partners to convene around achieving the results and outcomes of the program to enhance collaboration.[9]

7. ADB's value addition to this program's design include: (i) strengthening institutional capacity and addressing bottlenecks to help make PLN's operations safer and more sustainable; (ii) keeping technical power losses low by putting emphasis on the number of distribution transformers,[10] (iii) introducing technological innovation that can enhance resource optimization and contribute to climate change mitigation, and (iv) supporting PLN's efforts to scale up the adoption of new energy meters while educating consumers on managing their energy expenditures. In particular, as paragraph 13 (ii) mentions, the program's incentives for improved waste management will achieve a breakthrough for all regions where PLN operates, and the

[6] The government is particularly keen to increase the use of renewable energy in Eastern Indonesia where fuel transport costs are high, and PLN is seeking support from development partners to enable these small grids to better handle the intermittency of solar and wind power through technology innovation

[7] ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Results-Based Loan to Perusahaan Listrik Negara for Electricity Grid Strengthening—Sumatra Program.* Manila. The World Bank provides a $500 million program-for-results (PforR) loan in parallel to ADB's $600 million program. PLN has fully achieved both the ADB and World Bank 2016 annual disbursement-linked indicators and making progress on all items under the program action plan.

[8] The most recent loan for power distribution (Loan 2619-INO: Java–Bali Electricity Distribution Performance Improvement Project) experienced significant delays due to rebidding and contractor underperformance. It applied a "ring-fenced" procurement approach typical for ADB loans, and consolidated contracts into large packages to ease administration. However, the approach effectively excluded the smaller contractors that normally carry out distribution contracts and did not take advantage of PLN's own system for mid- and low-voltage grid development.

[9] Additional development partners are currently considering possible parallel cofinancing for this RBL program.

[10] RUPTL targets are based on total transformer capacity, which allows the regional operational teams to use larger transformers at longer intervals leading to extended low-voltage lines with higher losses.

intended smart grid pilot projects will allow for a higher mix of renewable energy in the local grids to support the country's transition towards more environmentally sustainable growth.[11]

8. This operation is consistent with the priorities outlined in ADB's country partnership strategy 2016–2019 for Indonesia[12] and is part of an overall programmatic approach embedded within a policy reform framework that is supported by the Sustainable and Inclusive Energy Program policy-based loan.[13] It will complement the proposed loan for power generation and a further loan for power distribution network development in Eastern Indonesia included in the country operations business plan 2017–2019. It has been coordinated with the key development partners supporting Indonesia's energy sector. Overall, ADB is seeking to provide over $3.0 billion in financing to Indonesia's energy sector during 2017–2019.

9. **Program scope**. PLN and ADB have agreed on a RBL Program size of $1,830 million dedicated to the eight provinces across Sulawesi and Nusa Tenggara (SNT),[14] of which $600 million will be financed by the proposed loan. Table 1 summarizes the RBL Program scope.

Table 1: Program Scope

Item	PLN's Broader Program	Results-Based Lending Program
Outcome	Enhanced energy security	Enhanced access to more reliable electricity services for residential, commercial, and industrial customers
Key outputs	Transmission backbone system developed and distribution system strengthened and expanded	Distribution system strengthened and expanded; innovation and institutional capacity enhanced
Expenditure size	$5,057 million (including $3,385.1 million for base costs)	$1,830 million (including $1,214.5 million for base costs), of which: ADB: $600 million (32.8%); PLN and others (67.2%)
Geographic coverage	Sulawesi and Nusa Tenggara	Sulawesi and Nusa Tenggara
Implementation period	2017–2021	2017–2021

Sources: ADB and PLN staff estimates.

10. **Efficiency and economy**. The component-specific investment needs projected for the program are based on a conventional technical design of medium and low voltage works (MV and LV) that PLN deems to make the best use of funds available and to be the most cost-effective in terms of achieving expected results. The distribution design, being mostly overhead construction, but with some underground works in specific urban areas, generally follows standard international practice, and is expected to reduce overall distribution losses, leading to efficiency gains, and provide a better reliability and quality of electricity supply to the customer. While the private sector plays an important role in Indonesia's energy sector for generation, PLN holds an actual monopoly over the MV and LV distribution system and is, therefore, the primary agency responsible for network expansion. Such tasks are thus best placed with PLN.

[11] In line with the government's Intended Nationally Determined Contributions submitted to the UNFCCC.
[12] ADB. 2016. *Country Partnership Strategy: Indonesia, 2016–2019.* Manila.
[13] ADB. 2015. *Report and Recommendation of the President to the Board of Directors (RRP): Proposed Programmatic Approach and Policy-Based Loans for Subprogram 1 to the Republic of Indonesia for Sustainable and Inclusive Energy Program.* Manila.
[14] The eight provinces include East Nusa Tenggara, West Nusa Tenggara, and six provinces in Sulawesi (North Sulawesi, Central Sulawesi, West Sulawesi, South Sulawesi, Southeast Sulawesi, and Gorontalo).

II. RESULTS AND DISBURSEMENT

A. The RBL Program's Overall Results

1. National results frameworks

11. **Country results framework.** The Government of Indonesia uses three kinds of results frameworks for national development planning: the national long-term development plan (RPJPN), 2005–2025, the five-year National Medium-Term Development Plan (RPJMN), which has targets aligned with the long-term plan, and sector plans of ministries and line agencies.[15] The 2015–2019 RPJMN promotes inclusive economic and environmentally sustainable growth and sets out 31 national action programs,[16] grouped into three priority areas, among them energy security and regional equity, with a focus on accelerating development in the country's much poorer eastern regions.[17]

12. **Energy sector goals and targets.** The Government's Energy Sector Action Program is linked to the infrastructure and environment action programs. Its stated goal in the RPJMN, 2015–2019 is "enhanced energy security." Measures to achieve this include expanding energy infrastructure and investments, increasing energy efficiency and accessibility, diversifying the energy mix with new and renewable energy sources, reducing greenhouse gas emissions, and increasing private sector participation. The Electricity Power Supply Business Plan (RUPTL)18 provides rolling 10-year electricity development plans. The 2017–2026 RUPTL provides PLN's targets in SNT, which are to: (i) expand its 20 kV system from 47,256 circuit-kilometers in 2016 to 76,430 circuit-kilometers in 2021; (ii) increase the installed capacity of distribution transformer units to 10,191 MVA by 2021 (2016 baseline: 4,298 MVA); (iii) increase the number of customers from 5.62 million in 2016 to 7.62 million in 2021; and (iv) increase electricity sales from 11.3 terawatt-hours in 2016 to 22.0 terawatt-hours in 2021.

2. Program results framework

13. **Impact and outcome. Table 2** shows the Program Results Framework. The progress of the program towards the achievement of results will be monitored using the table in Appendix 4. At the impact level, the program is aligned with the RUPTL's goal of enhancing the quality of life in Indonesian society by the sustainable use of electricity as a key driver of increased economic activity. The expected outcome of the RBL program is expanded access to more reliable electricity services for residential, commercial, and industrial customers in the Eastern Indonesian provinces across SNT. The outcome is linked to the results areas in the national electricity results framework while the key performance indicators for the RBL program outcome are identical or similar to those used by PLN. This will be achieved through two outputs as follows:

(i) **Output 1. Distribution system strengthened and expanded**. This output will help address the need for an expanded and strengthened distribution system, and consequently improve electrification rates, reduce overloading, and address reliability issues for the local population and businesses.

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[15] A. S. Alisjahbana. 2014. Presentation at the International Conference on Economic Modelling, Bali. 18 July.
[16] Government of Indonesia, Bappenas. 2015. Medium-Term National Development Plan, 2015–2019. Jakarta.
[17] In 2014, the national poverty rate was estimated at 11%, compared to poverty rates of 17.1% in West Nusa Tenggara, 19.6% in East Nusa Tenggara, 13.6% in Central Sulawesi, 12.8% in Southeast Sulawesi, 17.4% in Gorontalo, and 12.1% in West Sulawesi (National Bureau of Statistics (BPS). http://www.bps.go.id/linkTabelStatis/view/id/1488
[18] State Electricity Corporation (PLN), 2017. *Electricity Power Supply Business Plan, 2017–2026.* Jakarta.

(ii) **Output 2. Innovation and institutional capacity enhanced**. This output will support PLN's efforts to innovate and strengthen institutional capacity for environmental management and increased efficiency. The program will (a) support innovation through pilot-scale smart grid projects, which will integrate the expanded use of intermittent, renewable energy sources and better manage demand fluctuation;[19] (b) expand the use of digital prepaid meters to reduce nontechnical losses, payment defaults, and servicing costs in remote areas; (c) improve PLN's asset and waste management with the safe disposal of several years' backlog of used equipment, including hazardous waste; and (d) track the timely implementation of distribution system contracts.

[19] The smart grid pilot projects will be aligned to support planned investments in solar and wind energy by both PLN and the private sector. Some of these renewable energy investments may be financed by German development cooperation through KfW (1,000 Islands Renewable Energy for Electrification Program) and ADB's Private Sector Operations Department.

Table 2: RBL Program Results Framework

Disbursement-Linked Indicator	DLI (Yes/ No)	Baseline and Year	2017	2018	2019	2020	2021
1. **Expanded access to electricity services**: number of total customers increased by an average annual rate of at least 5.6% to reach at least 6.99 million customers by 2020	Yes/ DLI 1	2016 baseline: 5.62 million customers	At least 5.90 million customers connected	At least 6.27 million customers connected	At least 6.62 million customers connected	At least 6.99 million customers connected	
2. **Growth in delivered electricity services:** total annual electricity sales increased by an average annual rate of at least 8.5% to reach at least 15,710 GWh by 2020, with an equal or higher growth rate for commercial customers to reach at least 3,234 GWh annual sales by 2020	Yes/ DLI 2	2016 baseline: Energy sales 11,336 GWh (2,334 GWh to commercial customers)	At least 12,300 GWh or more of energy sales to customers (at least 2,532 GWh to commercial customers)	At least 13,345 GWh or more of energy sales to customers (at least 2,747 GWh to commercial customers)	At least 14,480 GWh or more of energy sales to customers (at least 2,981 GWh to commercial customers)	At least 15,710 GWh or more of energy sales to customers (at least 3,234 GWh to commercial customers)	
3. **Improved reliability of services:** Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5% to reach less than 15.82/ 100 ckm by 2020[a]	Yes/ DLI 3	2016 baseline: MV feeder permanent interruptions 19.43/ 100 ckm	MV feeder permanent interruptions less than18.45/ 100 ckm	MV feeder permanent interruptions less than 17.53/ 100 ckm	MV feeder permanent interruptions less than 16.66/ 100 ckm	MV feeder permanent interruptions less than 15.82/ 100 ckm	
4. Number of distribution transformer units installed increased by an average annual rate of at least 5.6% to reach at least 50,721 by 2020	Yes/ DLI 4	2016 baseline: 40,788 units installed	At least 43,072 distribution transformer units installed	At least 45,484 distribution transformer units installed	At least 48,031 distribution transformer units installed	At least 50,721 distribution transformer units installed	
5. Additional length of medium-voltage (MV)[b] distribution lines installed increased by an average annual rate of at least 5.6% to reach at least 58,764 ckm by 2020, with an equal or higher growth rate for Lombok and Flores combined to reach at least 7,388 ckm by 2020	Yes/ DLI 5	2016 baseline: 47,256 ckm of MV distribution lines installed (5,941 ckm in Lombok and Flores)	At least 49,902 ckm of MV distribution lines installed (at least 6,274 ckm in Lombok and Flores combined)	At least 52,697 ckm of MV distribution lines installed (at least 6,626 ckm in Lombok and Flores combined)	At least 55,648 ckm of MV distribution lines installed (at least 6,997 ckm in Lombok and Flores combined)	At least 58,764 ckm of MV distribution lines installed (at least 7,388 ckm in Lombok and Flores combined)	

Disbursement-Linked Indicator	DLI (Yes/ No)	Baseline and Year	2017	2018	2019	2020	2021
6. Pilot-scale smart grid projects implemented in at least 4 areas by 2021.	Yes/ DLI 6	2016 baseline: 0 SG projects in SNT that are in line with Corporate SG Roadmap	SG Guidelines based on Corporate SG Roadmap issued, pilot projects in 4 PLN Areas selected	Project design developed, 2 pilot SG projects start procurement	At least 2 more pilot SG projects start procurement	At least 2 pilot SG projects operational	At least 4 pilot SG projects operational
7. Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021	Yes/ DLI 7	2016 baseline: 48% of total customers use digital pre-paid meters or smart meters	At least 55% of total customers use digital pre-paid meters or smart meters	At least 60% of total customers use digital pre-paid meters or smart meters	At least 65% of total customers use digital pre-paid meters or smart meters	At least 70% of total customers use digital pre-paid meters or smart meters	At least 75% of total customers use digital pre-paid meters or smart meters
8. Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021	Yes/ DLI 8	2016 baseline: 0 disposal rate. Accumulated used equipment, including hazardous waste and slow procedures for review, approval and disposal	(i) 2016 inventory of used equipment for disposal prepared and approved by PLN & MSOE. (ii) PLN Guidance for Asset Management (1998) revised to accelerate disposal of hazardous waste	(i) Existing oil spills cleaned in accordance with MOEF No.33/2009. (ii) at least 20% of PLN's used equipment in the 2016 inventory safely disposed	(i) All warehouses equipped with oil containment/ protection measures (ii) At least 50% of PLN's used equipment in the 2016 inventory safely disposed	At least 80% of PLN's used equipment in the 2016 inventory safely disposed	At least 90% of PLN's used equipment in the 2016 inventory safely disposed
9. Timely completion of implementation of distribution system contracts increased to more than 75% by 2021	No	2016 baseline: 45% of distribution system contracts on time	At least 55% of distribution system contracts implemented on time	At least 60% of distribution system contracts implemented on time	At least 65% of distribution system contracts implemented on time	At least 70% of co distribution system contracts implemented on time	At least 75% of distribution system contracts implemented on time

ckm = circuit kilometer, DLI = disbursement-linked indicator; GWh = gigawatt hour, km = kilometer, MOEF = Ministry of Environment and Forestry, MSOE = Ministry of State Owned Enterprises, PLN = State Electricity Corporation, SG = Smart Grid, SNT = Sulawesi and Nusa Tenggara

[a] The PLN defines "*Permanent interruptions*" as any interruption to the system longer than 5 minutes. The interruptions related to generation and transmission faults are excluded for this indicator.

[b] PLN generally defines medium-voltage as 20 kV.

Sources: Asian Development Bank estimates, PLN management information systems, and Electricity Power Supply Business Plan (RUPTL), 2017–2026.

B. Disbursement-Linked Indicators

14. Eight disbursement-linked indicators (DLIs) have been identified **(Table 3).** These indicate the areas crucial for the successful implementation of the RBL Program. The DLIs contain three outcome indicators and five output indicators. At the outcome level, DLI 1 and DLI 2 respectively measure the expanded access to electricity services and growth in energy sales, while DLI 3 focuses on reliability of electricity supply. DLI 4 and DLI 5 reflect the infrastructure improvements, leading to increased transformer units and expanded distribution lines. DLI 6 reflect the program's support to enhancing institutional capacity for efficiency and innovation by tracking the initiation and progress of pilot smart grid projects in selected program areas. DLI 7 will enhance operational efficiency and resource optimization by incentivizing the expanded use of digital prepaid meters. DLI 8 tracks the process of improving systems and procedures for the safe disposal of used equipment.

15. Most of these indicators are already being tracked by PLN's management information systems and therefore do not require separate measurement efforts. Overall, the DLIs and the other performance indicators provide ambitious yet achievable measures of progress toward program outputs and outcome. The DLI targets have been developed in consultation with experienced PLN planners and are as close as possible to the government-driven RUPTL targets, while carefully considering PLN's actual performance during 2010-2016. For example, the analytical work for the RUPTL showed that the growth rate was projected to decline for Sulawesi in the coming five-year period, which led to a significant revision in the projected trend of energy sales over the same period. The progress towards the achievement of the DLIs will be monitored using the table in Appendix 4.

Table 3: Disbursement-Linked Indicators		Disbursement Allocated ($ million)	Share of Total ADB Financing (%)
Outcome			
DLI 1	Expanded access to electricity services: Number of total customers in Sulawesi and Nusa Tenggara increased by an average annual rate of at least 5.6% (at least 1.37 million more customers by 2020 from the 2016 baseline)	120.0	20.0
DLI 2	Growth in delivered electricity services: Total annual electricity sales increased by an average annual rate of at least 8.5% (an increase of at least 4,374 gigawatt-hours by 2020 from the 2016 baseline), with an equal or higher growth rate for commercial customers	96.0	16.0
DLI 3	Improved reliability of services: Feeder line permanent interruptions[a] in the distribution system reduced by an average annual rate of at least 5% (a reduction of more than 3.61 interruptions per 100 circuit-kilometers by 2020 from the 2016 baseline)	48.0	8.0
Outputs			
Distribution system strengthened and expanded			
DLI 4	Number of distribution transformer units installed increased by an average annual rate of at least 5.6% (at least 9,933 more units by 2020 from the 2016 baseline)	96.0	16.0
DLI 5	The length of medium-voltage distribution lines installed increased by an average annual rate of at least 5.6% (at least 11,508 circuit-kilometer increase by 2020 from the 2016 baseline), with an equal or higher growth rate in Lombok and Flores	96.0	16.0
Innovation and institutional capacity enhanced			
DLI 6	Pilot-scale smart grid projects implemented in at least four areas by 2021	48.0	8.0
DLI 7	Operational efficiency and resource optimization enhanced, with at least 75% of total customers using digital prepaid meters or smart meters by 2021 (from 48% in 2016)	48.0	8.0
		48.0	8.0

Table 3: Disbursement-Linked Indicators	Disbursement Allocated ($ million)	Share of Total ADB Financing (%)
DLI 8 Asset and waste management improved, with 90% of used PLN-owned equipment from the 2016 disposal inventory safely disposed of by 2021		
Total	**600.0**	**100.0**

DLI = disbursement-linked indicator, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*).
[a] PLN defines permanent interruptions as those over 5 minutes in duration.
Sources: Asian Development Bank estimates, PLN management reporting information system, and Electricity Power Supply Business Plan (*Rencana Usaha Penyediaan Tenaga Listrik*), 2017–2026.

C. Disbursement Linked Indicator Verification Protocols

16. **Table 4** provides the verification protocols for the DLIs. The verification status will be tracked by using reports from the PLN and the independent verification agency, which will be summarized in a monitoring table such as in Appendix 5.

Table 4: Disbursement-Linked Indicator Verification Protocols

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
DLI 1: Expanded access to electricity services: number of total customers in Sulawesi and Nusa Tenggara increased by an average annual rate of at least 5.6% to reach at least 6.99 million customers by 2020			
Baseline (2016): 5.62 million customers in Sulawesi and Nusa Tenggara 2017: At least 5.90 million customers (cumulative) connected 2018: At least 6.27 million customers (cumulative) connected 2019: At least 6.62 million customers (cumulative) connected 2020: At least 6.99 million customers (cumulative) connected	**Definition** of DLI 1 is the number of customers served by PLN in Sulawesi and Nusa Tenggara, as recorded in PLN distribution systems for a given year. Customers include residential, commercial, industrial, social, and government 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 (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 set target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration.	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 SPKK and DIR REG SNT. 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 is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 2: Growth in delivered electricity services: total annual electricity sales increased by an average annual rate of at least 8.5% to reach at least 15,710 GWh by 2020, with equal or higher growth for commercial customers to reach at least 3,234 GWh annual sales by 2020			
Baseline (2016): 11,336 GWh total electricity sales with 2,334 GWh sales to commercial customers 2017: At least 12,300 GWh of total electricity sales with at least 2,532 GWh sales to	**Definition** of DLI 2 is annual electricity sales by PLN in GWh for the whole of Sulawesi and Nusa Tenggara, which is the electricity sold to all customers (residential, commercial, industrial, social, and government customers) by PLN. Each year this is obtained by the total electricity sales for that year. Annual sub-targets are established for electricity sold to commercial customers. **Conditions for disbursement** are met if, for a given year, the cumulative total electricity sales reaches or exceeds the sales	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	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 SPKK and DIR REG SNT. The IVA will also verify the

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
commercial customers 2018: At least 13,345 GWh of total electricity sales with at least 2,747 GWh sales to commercial customers 2019: At least 14,480 GWh of total electricity sales with at least 2,981 GWh sales to commercial customers 2020: At least 15,710 GWh of total electricity sales with at least 3,234 GWh sales to commercial customers	target specified for that year (first column). 25% of the total allocated loan amount for this DLI is allocated to annual sub-targets for electricity sales to commercial customers. **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 set target is fully achieved even if the achievement is late as long as the achievement is during the program's duration.	appropriate. Monitoring may be as frequent as PLN wishes.	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 is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 3: Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5% to reach less than 15.82/100 ckm by 2020			
Medium-voltage feeder line permanent interruptions within the distribution system are: Baseline (2016): 19.43/100 ckm in 2016 2017: less than18.45/100 ckm 2018: less than 17.53/100 ckm 2019: less than 16.66/100 ckm 2020: less than 15.82/100 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).	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 SPKK. 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 SPKK and DIR REG SNT. 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 is then attached to the PLN report.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
			Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 4: Number of distribution transformer units installed increased by an average annual rate of at least 5.6% to reach at least 50,721 by 2020			
Baseline (2065): 40,788 distribution transformer units installed 2017: cumulative total installed: at least 43,072 units 2018: cumulative total installed: at least 45,484 units 2019: cumulative total installed: at least 48,031 units 2020: cumulative total installed: least 50,721 units	**Definition.** Distribution transformer means transformers in PLN's medium-voltage (20 kV) and low-voltage distribution network in SNT. Each year, the newly installed units are added onto the existing installed units to obtain the cumulative total for that year. **Conditions for disbursement** are met for a given year when the number of distribution transformer units installed equals or surpasses the target 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 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 target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration.	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 SPKK and DIR REG SNT. 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 is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 5: Length of medium-voltage (MV) distribution lines installed increased by an average annual rate of at least 5.6% to reach at least 58,764 ckm by 2020, with equal or higher growth in Lombok and Flores to reach at least 7,388 ckm combined length by 2020			
Baseline (2016): 47,256 ckm of MV distribution lines installed, with 5,941 ckm in Lombok and Flores combined	**Definition.** Lombok and Flores mean the PLN Areas of Lombok and Flores.[20] 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. Annual sub-	PLN databases and annual statistics. Required frequency for reporting will be annual, and PLN and	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

[20] "PLN Areas of Lombok and Flores" are PLN's administrative terms and includes smaller islands served by those PLN Area offices.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
2017: cumulative total installed: at least 49,902 ckm of MV distribution lines, with at least 6,274 ckm in Lombok and Flores combined 2018: cumulative total installed: at least 52,697 ckm of MV distribution lines, with at least 6,626 ckm in Lombok and Flores combined 2019: cumulative total installed: at least 55,648 ckm of MV distribution lines, with at least 6,997 ckm in Lombok and Flores combined 2020: cumulative total installed: at least 58,764 ckm of MV distribution lines, with at least 7,388 ckm in Lombok and Flores combined	targets are established for installed MV distribution line length in the PLN Areas of Lombok and Flores (combined). **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 (first column). 25% of the total allocated loan amount for this DLI is allocated to annual sub-targets for PLN Areas of Lombok and Flores (combined). **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 set target is fully achieved even if the achievement is late, as long as the achievement is during the program's duration.	ADB may agree each year on interim reporting arrangements as appropriate. Monitoring may be as frequent as PLN wishes.	results each year in SPKK and DIR REG SNT . 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 is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 6: Pilot-scale smart grid projects implemented in at least 4 areas by 2021			
Baseline (2016): no SG projects in Sulawesi and Nusa Tenggara that are in line with corporate SG roadmap 2017: (i) SG Guidelines based on Corporate SG Roadmap issued, (ii) project sites in at least 4 areas selected 2018: (i) Project design developed, (ii) Two pilot	**Definition.** Smart Grid (SG) projects are those that meet the criteria defined by PLN. The criteria include, but are not necessarily limited to, demand response mechanisms to help balance electrical consumption with supply, inter-operability with solar and other renewables, and ICT systems that provide two-way information between the electricity supply source and user. **Conditions for disbursement** are met for a specific year when the institutional actions and numeric targets set for that year (first column) are achieved, with the criteria for achievement as detailed in the guidelines developed in 2017, including performance indicators for the pilots. **Partial disbursement**. Partial disbursements are allowed as	PLN Wilayah 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 including through field checks of the pilot projects as needed. The IVA will refer to the 2017 SG guidelines, performance indicators and the verification protocols

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
SG projects start procurement 2019: At least two more pilot SG projects start procurement 2020: At least two pilot SG projects operational 2021: At least four pilot SG projects operational	follows. For the same year, where there are two or three institutional actions, partial disbursement is possible proportional to the number of actions completed. However, partial disbursement is not possible within a single institutional action. The specified action has to be completed for disbursement. Partial disbursement is possible for all years: 2017 (2 actions, 50% of that year's allocation each) 2018 (project design for 4 projects – 12.5% each, procurement start for 2 projects – 25% each), 2019 (2 projects, 50% each), 2020 (2 projects with 50% each, 2021 (2 more projects with 50% each). 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.		and other relevant guidelines prepared for the program. The IVA report is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.
DLI 7: Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021			
Percentage of total customers using digital prepaid meters or smart meters is: Baseline (2016): 48% of total customers 2017: At least 55% 2018: At least 60% 2019: At least 65% 2020: At least 70% 2021: At least 75%	**Definition**. Digital pre-paid meters and smart meters are those that meet national standards, as defined by PLN, and are installed by PLN. The total number of customers (denominator) are as defined in DLI 1: the residential, commercial, and industrial customers served by PLN in SNT, as recorded in PLN distribution systems for a given year. The numerator is the number of customers using digital pre-paid meters, whether new customers or those having converted from an existing conventional meter. **Conditions for disbursement** are met for a given year when the percentage of PLN customers using digital pre-paid meters or smart meters installed meets or exceeds the criteria each year as specified 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	PLN Wilayah 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 in SPKK and DIR REG SNT. 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 is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
	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.		
DLI 8: Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021			
Baseline (2016): Accumulated used equipment, including hazardous waste; no updated inventory; slow procedures for review, approval and disposal 2017: (i) inventory of used equipment for disposal as of end-2016 prepared and approved by PLN, (ii) PLN Guidance for Asset Management (1998) revised to accelerate disposal of hazardous waste 2018: (i) inventory of used equipment for disposal as of end-2016 approved by MSOE, (ii) existing oil spills in SNT cleaned in accordance with MOEF Regulation No.33/2009, (iii) at least 20% of PLN's used equipment in the 2016 inventory safely disposed 2019: (i) all warehouses	**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 Sulawesi and Nusa Tenggara. The "disposal inventory" is a nationwide inventory of all PLN used equipment that are intended for disposal. "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 through the following process. *Used equipment,* still considered as Government assets, are required to go through internal audit and verification within PLN involving the Ministry of State Owned Enterprises (MSOE) and the Directorate-General of National Wealth under the Ministry of Finance. *Broken materials less than 5 years old and still with economic value* can be disposed through auction at the discretion of PLN headquarters, but this would need agreement of the Board of Commissioners. *Used assets more than 5 years old with low economic value* are disposed through the MSOE. The long process of inventory, review, audit, and verification by different units is further subject to legal requirements for the relevant authority to sign accountability statements. "Oil containment" is where spills of oil are contained within a barrier or drainage system rather than being absorbed at the surface, contaminating the soil and water. Where it is not practical to provide permanent, dedicated containment structures, one or more alternative forms of spill containment may be provided as "oil protection measures," such as	PLN Wilayah 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 including through field checks of the warehouse sites. The IVA will refer to the revised government guidance for asset management and the verification protocols and other relevant guidelines prepared for the program. The IVA report is then attached to the PLN report. Within one month of receiving the validated report, ADB will confirm that the target has been met.

Disbursement-Linked Indicator	Definition and Description of Achievement and Verification	Information Source and Frequency	Verification Agency and Procedure
in SNT equipped with oil containment and/or protection measures, (ii) at least 50% of PLN's used equipment in the 2016 inventory safely disposed 2020: At least 80% of PLN's used equipment in the 2016 inventory for SNT safely disposed 2021: At least 90% of PLN's used equipment in the 2016 inventory for SNT safely disposed	automatic shut-off valves on storm water basins, or shut-off valves in drainage or sewer facilities, combined with oil-water separators. **Conditions for disbursement** are met for a specific year when the institutional actions and/or percentage targets set for that year (first column) are achieved. **Partial disbursement**. Partial disbursements are allowed as follows. For the same year, where there are two or three institutional actions, partial disbursement is possible proportional to the number of actions completed. Partial disbursement is also permitted within a single institutional action. Within the component relating to percentage of waste disposal, partial disbursement can be made 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). Under 2018 action (i), if PLN obtains approval from MSOE for X% of the 2016 inventory, then the same portion from the allocated amount for this action can be disbursed. Similarly, for 2018 action (ii) and 2019 action (i), if PLN completes the specified actions for Y% of all warehouses, then the same portion from the allocated amount for these actions can be disbursed. 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.		

ADB = Asian Development Bank, ckm = circuit kilometer, DIR REG SNT = Regional Directorate of Sulawesi and Nusa Tenggara, DLI = disbursement-linked indicator; GWh = gigawatt hour, IVA = independent verification agency, km = kilometer, MOEF = Ministry of Environment and Forestry, MSOE = Ministry of State Owned Enterprises, MV = medium voltage, PLN = State Electricity Corporation, SG = Smart Grid, SNT = Sulawesi and Nusa Tenggara, SPKK = Corporate Performance Control Unit.

Sources: Asian Development Bank estimates, PLN management information systems, and Electricity Power Supply Business Plan (RUPTL), 2017–2026.

D. Disbursement Principles, Allocation and Status

17. Financing under the loan will be disbursed, subject to the achievement and verification of the agreed DLIs (**Table 3** and **Table 4**). The loan 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. Up to 25% of the loan will be made available for advance financing upon loan effectiveness. PLN will submit a withdrawal application that reports on the achievement of the DLIs. Before the submission of the first withdrawal application, PLN will submit to ADB the evidence of achievement for such disbursement based on the verification protocols, and evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of PLN, together with the authenticated specimen signatures of each authorized person. The ADB will then arrange for an independent verification agent (IVA) to verify and submit its independent report.

18. The disbursement amount allocated to each disbursement-linked indicator depends on its importance. While the cost of achieving the DLI may be a factor for consideration, there is no one-to-one relationship between the allocation of disbursement and the costs required to achieve the results. Any amount not disbursed for an unmet DLI will be disbursed once it has been achieved. If progress toward the DLI target has been made, but the target not yet achieved, and partial disbursement has been agreed for that DLI, ADB will determine the amount to be disbursed based on the level of achievement. Partial disbursements are allowed for DLIs in accordance with protocols set out in **Table 4**. Disbursements are allowed for early or late achievement of DLIs. Verification mechanisms and protocols have been established depending on the nature of the DLIs.

19. Loan proceeds will be disbursed to PLN's general account with a commercial bank. Further advance financing will also be allowed to address financing requirements as needed within the RBL policy limits.[21] PLN will refund any advance financing amount outstanding if the DLIs are not achieved. Advances can be considered for initial and subsequent DLIs during the implementation period. The amount of advances will be recovered from subsequent disbursements when DLIs are achieved. Additional advances can be made once an earlier advance has been recovered or partially recovered. The recovered advance is then available, as needed, for additional advances ("revolving advances"), but the outstanding advance should not at any time exceed the ceiling of 25% of ADB financing. PLN will refund any advances (or portions of advances) if the DLIs have not been met or fully met by program completion no later than six months after program completion.

20. **Table 5** shows the expected disbursement allocation and schedule. Disbursement status will be monitored using the table in Appendix 6.

[21] Ceilings are 25% for advance financing and 20% for financing for prior results. The combined outstanding balance of advance financing and amount of financing for prior results should not exceed 30%.

Table 5: Expected Disbursement Schedule

($ million)**Disbursement-Linked Indicator**	**Total ADB Financing Allocation**	**Share of ADB Financing** (%)	**Advance Financing**	**2017**	**2018**	**2019**	**2020**	**2021**
Outcome								
DLI 1: Expanded access to electricity services: number of total customers increased by an average annual rate of at least 5.6%	120.0	20.0	0.0	30.0	30.0	30.0	30.0	-
DLI 2: Growth in delivered electricity services: total electricity sales increased by an average annual rate of at least 8.5%	96.0	16.0	0.0	24.0	24.0	24.0	24.0	-
Sub-allocation for commercial customers	*24.0*	*4.0*	*0.0*	*6.0*	*6.0*	*6.0*	*6.0*	-
Sub-allocation for all other customers	*72.0*	*12.0*	*0.0*	*18.0*	*18.0*	*18.0*	*18.0*	-
DLI 3: Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5%	48.0	8.0	0.0	12.0	12.0	12.0	12.0	-
Outputs								
DLI 4: Number of distribution transformer units installed increased by an average annual rate of at least 5.6%	96.0	16.0	48.0	12.0	12.0	12.0	12.0	-
DLI 5: Length of medium-voltagea distribution lines installed increased by an average annual rate of at least 5.6%	96.0	16.0	48.0	12.0	12.0	12.0	12.0	-
Sub-allocation for Lombok and Flores (combined)	*24.0*	*4.0*	*12.0*	*3.0*	*3.0*	*3.0*	*3.0*	-
Sub allocation for all other PLN services areas	*72.0*	*12.0*	*36.0*	*9.0*	*9.0*	*9.0*	*9.0*	-
DLI 6: Pilot-scale smart grid projects implemented in at least 4 areas by 2020	48.0	8.0	18.0	6.0	6.0	6.0	6.0	6.0
DLI 7: Use of digital pre-paid meters or smart meters among existing customers increased to enhance operational efficiency and resource optimization; use of digital pre-paid meters or smart meters to reach 70% of total customers by 2020	48.0	8.0	18.0	6.0	6.0	6.0	6.0	6.0
DLI 8: Asset and waste management improved with at least 80% of used PLN equipment from the 2016 disposal inventory safely disposed by 2020	48.0	8.0	18.0	6.0	6.0	6.0	6.0	6.0
TOTAL	**600.0**	**100.0**	**150.0**	**108.0**	**108.0**	**108.0**	**108.0**	**18.0**

ADB = Asian Development Bank, DLI = disbursement-linked indicator, ckm = circuit-kilometer, kV = kilovolt, PLN = Perusahaan Listrik Negara (State Electricity Corporation).
Source: ADB estimates.

III. EXPENDITURE FRAMEWORK AND FINANCING

A. Expenditure Framework

21. **Program expenditure framework**. PLN's RUPTL 2017–2026 includes an overview of the projected transmission, distribution and generation investment needs for Eastern Indonesia which amount to $21.747 billion. The proposed RBL is defined to cover transmission and distribution needs in SNT for the period 2017–2021, which in the RUPTL is estimated at $2.871 billion. PLN's estimates cover engineering, procurement, and construction (EPC) costs and do not include other expenditure items required to make the program operational (e.g. land acquisition, permits, consultants, project management, and overhead). ADB has therefore estimated the total program costs based on similar projects funded by ADB in the recent past, which is shown below.

22. **Table 6** shows the total program costs estimated at $5,057.3 million (consisting of $3,385.1 million EPC costs[22] and $1,672.2 million additional expenditure items). The RBL program is estimated at $1,830.3 million, of which $1,214.5 million represents EPC costs. The combination of EPC costs and additional expenditure items makes the full set of expenditures comprehensive and the RBL program fully operational.

23. PLN's EPC cost figures are based on detailed calculations of electricity demand and ensuing requirements for distribution. The technical design of the proposed program has been carried out by PLN technical experts, generally in accordance with internationally accepted good practice. Based on a review of the methodology used in estimating the expenditures and benchmarking exercise against market prices, ADB considers the program expenditures to be realistic in terms of prioritization and coverage.

Table 6: Summary of Program Expenditure Framework, 2017–2021

($ million)

	PLN Broader Program		RBL Program	
Item	**Amount** ($ million)	**Share of Total** (%)	**Amount** ($ million)	**Share of Total** (%)
Civil works	846.3	16.7	303.6	16.6
Equipment	2,538.8	50.2	910.9	49.8
Taxes and duties	406.2	8.0	145.7	8.0
Land acquisition	23.0	0.5	12.1	0.7
Project management	33.9	0.7	12.1	0.7
Monitoring and supervision	169.3	3.3	60.7	3.3
Environmental management	16.9	0.3	6.1	0.3
Interest	364.0	7.2	78.5	4.3
Physical contingencies[a]	403.4	8.0	145.1	7.9
Price contingencies[b]	255.4	5.1	155.2	8.5
Total	**5,057.3**	**100.0**	**1,830.3**	**100.0**

PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.
Note: Numbers may not sum precisely because of rounding.
[a] Based on 10% estimated physical contingencies (typical for this type of project).
[b] Based on Asian Development Bank forecast domestic and international cost escalation factors.
Sources: Asian Development Bank and PLN estimates.

[22] Engineering, procurement and construction costs, or capital expenditure needs for distribution. No land acquisition will be undertaken under the program financed by ADB.

Table 7: Annual Breakdown of Engineering, Procurement, and Construction Costs
($ millions)

	2017	2018	2019	2020	2021	Total
Transmission	851.1	643.4	196.6	232.8	246.7	2,170.6
Distribution	260.7	233.8	234.0	248.7	237.2	1,214.5
Total	1,111.9	877.2	430.7	481.5	483.9	3,385.1
Share (%)	32.8	25.9	12.7	14.2	14.3	100.0

Source: Calculated based on RUPTL, 2017–2026

24. **Program financing**. PLN is expected to finance around 60% of the overall program, and 50% of the RBL Program. PLN and the government may request ADB and other development partners to provide additional financing during satisfactory implementation of the subsequent phases of the program to bridge any financing gap through to 2021.[23] For the program, PLN has requested a loan to be guaranteed by the Republic of Indonesia in the amount of $600 million from ADB's ordinary capital resources. The status of program financing will be monitored closely as indicated by Appendix 8.

Table 8: Program Financing Plan

	PLN Broader Program		RBL Program	
Source	Amount ($ million)	Share of Total (%)	Amount ($ million)	Share of Total (%)
PLN[a]	3,008.0	59.5	915.2	50.0
Asian Development Bank	600.0	11.9	600.0	32.8
Others[b]	1,449.3	28.7	315.1	17.2
Total	**5,057.3**	**100.0**	**1,830.3**	**100.0**

PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.
[a] From PLN's internal cash flows and equity injections from the Government of Indonesia.
[b] Includes possible funding from the World Bank, the Islamic Development Bank, and other multilateral and bilateral financial institutions. If partner funding is insufficient, PLN is expected to secure the necessary funding from its internal cash flows or additional equity injections from the government.
Sources: Asian Development Bank and PLN estimates.

IV. PROGRAM SYSTEMS AND IMPLEMENTATION ARRANGEMENTS

25. The executing agency will be PLN. PLN's regional (*Wilayah*) offices in Sulawesi and Nusa Tenggara will implement the program with overall oversight by PLN headquarters. The relevant PLN headquarters divisions have developed good capacity to plan and manage RBL programs due to their experience over the past year for the Sumatra RBL program with ADB and Program-for-Results with the World Bank. Program implementation is from October 2017 to December 2021.

A. Monitoring and Evaluation System

26. **M&E information systems.** PLN is committed to continuous and comprehensive monitoring and evaluation (M&E). Assessment of its existing M&E systems, processes and procedures indicate extensive data generation, the ability to monitor transmission and distribution in real time, and a regular reporting system. The Management Reporting Information System (SILM) contains data on critical dimensions such as performance, electricity generation, energy sales, transmission and distribution, and projects and construction. This information will facilitate the monitoring of the DLIs for the program. The M&E in PLN at the corporate level is handled and managed by SPKK through SILM. SILM provides accurate, real-time, online data. A monthly summary report is generated based on information provided by SILM, addressed to the Board of

[23] Development Coordination (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

Directors (BOD) and to all Heads of Divisions. Based on this report, each division provides feedback on the condition of the field, addresses problems, or develops strategies to make forward progress. In addition, the BOD and SPKK use the “BOD Dashboard” information system which contains comprehensive data in real-time for (i) customer service; (ii) projects; (iii) corporate performance; and (iv) electricity condition.

27. **Institutional arrangements for M&E.** SPKK has been specifically created and given the task of monitoring, evaluating and de-bottlenecking process problems that arise in the implementation of tasks and business processes in the corporation. The SPKK coordinates with all divisions and units in PLN to obtain current and accurate data. It processes and evaluates data into clear information to facilitate BOD decision-making. In addition, each division has duties and responsibilities to perform monitoring duties in accordance with its field. PLN has extensive experience in monitoring and evaluation both large and smaller projects and programs. PLN M&E experience, however, is in projects that are largely input-based. Management staff in each division and in SPKK monitor and evaluate PLN programs, projects, processes and procedures internally. However, little benchmarking, or comparison, to other companies with world-class experience and achievement has been accomplished. Capacity development within PLN needs be expanded to include professional development in comparative M&E practices in order to allow PLN to benchmark itself against the standards of other power companies that use international best practices in M&E.

28. **Availability and quality of data.** In most of the data collection applications, data indicators and targets have been established. The units responsible provide the necessary data. This responsibility has been designated as a key performance indicator (KPI) for the related units. Units that do not fill in complete and accurate data will receive a low achievement of the KPI score. This mechanism ensures the availability and quality of the data. Quantitative data regarding the performance of PLN include data from PLN and data managed by subsidiaries. PLN also maintains historical data for analysis and reporting annually and for five-year development plans.

29. **Information sharing and arrangements for reporting.** The data collected within IT applications is accessible by all Divisions and Units in PLN. This ensures proper information sharing. The Operations division works closely with the Strategic Programs division (supply chain, strategies program, planning procurement) and reports to SPKK. All units also report directly to their division. Internal operational reporting is “cascade up” -monthly/quarterly/semi-annual/annual from units to SPKK. Progress reports on achievement of KPI, progress reports of construction projects, and information about the problems that arise are routinely reported every month through SILM. Written reports are submitted to the BOD and Heads of Divisions in the form of Summary Progress Reports. These contain information based on detailed data for each indicator for each unit distribution / region and construction units, and detailed figure percentage progress of project implementation for each project generation, transmission and substations, complete with the status of the current problems.

30. **DLI reporting.** The M&E system within PLN is sufficient and able to generate reliable, timely, and adequate information on results, including DLIs. The units responsible provide the necessary data. Data specific to DLIs and other indicators are collected, analyzed, and monitored throughout the specific systems indicated above (**Table 9)**. PLN will submit to ADB quarterly reports on; (i) the achievements of overall program results; (ii) DLIs and DLI verification protocols; (iii) covenants in the loan and program agreements; and (iv) PAP implementation. ADB will engage and IVA to check and verify the information related to DLIs.

Table 9: Monitoring and Evaluation Responsibilities and Expanded Data Sources with DLIs and Other Indicators

Performance Targets and Indicators with Baselines	Responsible Directorate and/or Division	Data Sources	Monitoring Frequency	System	Reporting Documentation Monthly
Outcome: Adequacy and reliability of power supply achieved for Sulawesi					
DLI 1: Expanded access to electricity services: number of total customers increased by an average annual rate of at least 5.6%	Wilayah, DIR REG SNT	– Numbers of customers connected – Type of customer – Location – Wait time for new connections	Real time	AP2T	SILM
DLI 2: Growth in delivered electricity services: total electricity sales increased by an average annual rate of at least 8.5% with an equal or higher growth rate for commercial customers	Wilayah, DIR REG SNT	– Numbers of customers connected – Type of customer – Location – Accounts receivable	Real time	AP2T	SILM
DLI 3: Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5% each year	Wilayah, DIR REG SNT	– Duration – Frequency – Phone calls – Employee report – Region/branch office	Real time	AP2T APKT	SILM
Outputs					
DLI 4: Number of distribution transformer units installed increased by an average annual rate of at least 5.6%	Wilayah, DIR REG SNT	Progress of transformer installation	Quarterly	P3B	SILM
DLI 5: Additional length of medium-voltage distribution lines installed increased by an average annual rate of at least 5.6% with an equal or higher growth rate for Lombok for Flores combined	Wilayah, DIR REG SNT	Progress of distribution line installation	quarterly	P3B	SILM SCADA Report P3B
DLI 6: Pilot-scale smart grid projects implemented in at least 4 areas by 2021	Wilayah, DIR REG SNT, DIV SIS, Smart Grid Task Force	Progress reports on SG pilots, guidelines, etc.	Quarterly		SPKK/SILM
DLI 7: Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021	Wilayah, DIR REG SNT	Progress on new meter installation and old meter replacement	Monthly		SILM
DLI 8: Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021	DIV ACT, DIV K3L, Wilayah, DIR REG SNT	– Progress on guidelines/regulations/approvals – Progress of waste disposal	Quarterly		SPKK/SILM
Percentage of contracts implemented on time in program areas increased to at least 75% by 2021	Wilayah, DIR REG SNT, DIV SCM	– Operating expenditures – Accounts receivable – Project progress – Contract implementation	Monthly		SPKK

AP2T = Aplikasi Pelayanan Pelanggan Terpusat (centralized customer services application),[a] DIR REG SNT = Directorate of Sulawesi and Nusa Tenggara Regional Business, DIV ACT = Accounting Division, DIV K3L = Health, Safety, and Environment Division, DIV SCM = Supply Chain Management Division, DIV SIS = System Planning Division, DLI = disbursement-linked indicator, P3B = Penyaluran dan Pusat Pengatur Beban (Load Dispatch Center), PLN = State Electricity Corporation, SCADA = supervisory control and data acquisition, SILM = Information System for Management Reporting, SPKK = Corporate Performance Control Unit.

[a] This application unites the business processes related to PLN customers.

Sources: Asian Development Bank and PLN staff.

B. Fiduciary Systems

1. Financial Management System

31. The proposed RBL program will use PLN's existing financial management (FM) system and procedures, which ADB considers adequate and will allow PLN to implement the proposed program effectively. PLN has significant experience in implementing development partner-financed projects and programs, including for ADB, other international organizations and commercial banks. Related procedures have generally been well-implemented, and the funds flow and disbursement arrangements for ADB-funded programs have been satisfactorily employed by PLN.

32. Indonesia has a relatively well-functioning public financial management (PFM) system, as evidenced by the 2012 PEFA-based assessment.[24] It showed that performance had improved in many areas—including comprehensiveness and transparency, predictability and control in budget execution, and external scrutiny and audit—but also that some specific areas continued to be very weak. These include the extent of unreported government operations, transparency of inter-governmental fiscal relations, multi-year budgeting, implementation of internal controls for payroll and non-salary expenditure, the internal audit function, the quality and timeliness of in-year budget reports, and the legislature's scrutiny of external audit reports. The government has been carrying out PFM reforms with donor support for a number of years.

33. Indonesia's state-owned enterprises (SOEs) are not, as such, part of the PFM sector, given that they are governed by Boards and follow private sector legislation and regulations. However, PLN and other large SOEs are fully government-owned, which implies financial accountability and a relationship vis-à-vis the government budget since significant subsidies are allocated via the budget, and a subsidiary loan agreement (SLA) is approved by Parliament as a separate budget line. SOEs are required to submit quarterly financial statements to the Ministry of SOEs (MSOE) and to produce audited financial statements as part of their annual report. There is also a requirement that SOEs undertake regular assessments of their financial "health". SOEs generally comply with reporting requirements and the Ministry of Finance (MOF) encourages compliance further by following up on their preparation of fiscal risk statements.

34. A description of PLN's financial management systems is presented in Program Fiduciary Systems Assessment.[25] The actions recommended to be undertaken in order to address identified financial management challenges and related fiduciary risks are shown in Section V. The plan will be regularly reviewed for progress, and updated if and when required. This will include addressing any new issues that are identified.

35. The financial management assessment indicates a moderate level of fiduciary risk. While some FM weaknesses and shortcomings have been identified for PLN, these are, as such, relatively minor and can be effectively addressed through the proposed mitigation measures and actions. Based on these being fully and properly implemented, the financial management arrangements are considered adequate.

[24] Government of Indonesia and Development Partners. 2012. *Indonesia: Repeat Public Expenditure and Financial Accountability (PEFA) Report & Performance Indicators.* Jakarta.

[25] Accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President.

2. Procurement System

a. Summary of Procurement System

36. **Procurement profile of the program.** The in-depth procurement assessment of PLN is an update of the assessment carried out for the Electricity Grid Strengthening—Sumatra Program (Loan 3339/8297) and was guided by the Supplementary Appendix No. 5 of the RBL Guidelines, which presents indicative questions for assessing RBL program fiduciary systems, to ensure that an adequate procurement system exists to support a principle-based program.

37. The procurement for the program will include SCADA and equipment for distribution networks as well as civil works and installation services. PLN will use a variety of procurement methods, which include open competitive bidding, framework contracts and direct contracting through open book.

38. It is this assessment's finding that the procurement framework as expressed in PLN's Board of Directors (BOD) Decree Nº 0620.K/DIR/2013 on PT PLN (Persero) General Guidelines for Procurement is appropriate and follows good practices used by utility companies around the world. The framework provides the overall principles for procurement, a procurement strategy as well as detailed procedures. The overall objective of the procurement strategy is to increase value for money (VfM) for the organization, which are identified as the correct balance of the six Rights (Rs) - quality, quantity, location, time, social-economic impact, and price. The right price is only considered once the other 5 Rs have been complied with. The social economic goals of the procurement process may include social, environmental or other strategic objectives and can also include building national capacity to supply PLN by utilizing domestic products, suppliers and contractors. The applicable procurement methods for the program can be defined as follows:

a. The default procurement method is called "limited bidding", where bids are solicited to a number of prequalified bidders, after going through a prequalification process following an open competitive bidding. The prequalified bidders are maintained in the list (referred to as "DPT List") under framework contract agreements for certain period of time (could be 6 months or a year, and some with possible extensions). This method is applicable for the procurement of MDU as well as for the procurement of civil works.
b. Another method is open competitive bidding, which is likely to be applicable for the procurement of SCADA system and the procurement of engineering, procurement, and construction (EPC) services for the smart grid pilot projects.
c. Purchases of small parts in very small volume (particularly for emergency items, which are immediately required for addressing emergency circumstances to maintain the power distribution services to customers) may also be conducted through open book system, or direct contracting (for contracts less than USD25,000).

39. The key for PLN in implementing their procurement strategy is to conduct extensive market research and to identify appropriate sourcing strategies depending on the supply market, the overall expenditure for different spending categories and the importance of those goods and services to PLN operations. As an analytical framework PLN uses the Kraljic Portfolio Purchasing Model to categorize spend and classifies its procurements in Strategic, Bottleneck, Leverage and Routine categories to develop the appropriate sourcing strategy. PLN have implemented a number of framework contracts for equipment to improve efficiency, security of supply and achieve better value for money through fostering economies of scale. For works and engineering, procurement, and construction (EPC) contracts open competitive bidding is the default

procurement method. To ensure quality of supply and of contractors, PLN has a list of pre-approved vendors, which meet the financial and technical requirements set out by PLN.

40. There are two key issues for ADB to consider for implementing an RBL using PLN's procurement system - local content requirements and direct contracting through open book, which are integral parts of PLN's procurement system. It is recommended that ADB accept these conditions when deciding to use the RBL modality because RBL policy clearly states that implementation rely on country systems not ADB Procurement Guidelines. More specifically:

a. **Local content requirements**. The requirement for local content for equipment means that only suppliers with manufacturing facilities in Indonesia are eligible to bid for and receive contracts. It should be noted that several multinational firms do have manufacturing facilities in Indonesia and PLN is actively encouraging foreign firms to either open facilities or expand the line of equipment they manufacture in Indonesia.
b. **Direct contracting through open book**. For direct contracting, only those suppliers who are pre-selected by PLN are eligible to supply goods and services. Although competition is sacrificed, open book contracting brings other benefits such as security of supply and according to PLN also value for money. Overall, it is only 6-6.5 % of the procurement spending for distribution equipment anticipated under the program will go through the open book system.

41. While PLN's overall procurement framework is appropriate, PLN will face a number of risks in managing procurement under this program. ADB's procurement assessment has identified the following procurement risks:

a. **Procurement and market capacity**. As the investment in distribution and transmission will be significantly increased in the implementation period, it may strain the capacity both internally in PLN as well in the supply markets. Not only is ADB processing a RBL, other partners are likely to support the distribution and transmission program and PLN is investing heavily to meet the ambitious goals of the power subsector development program. The absorptive capacity of PLN and perhaps more importantly the private sector capacity to deliver needs to be carefully monitored. The increase in investment in distribution may result in (1) lack of qualified contractors to carry out installation and works contracts and (2) supply risk for equipment categories especially where only limited suppliers exist. A procurement monitoring and spending pattern system should be actively used by PLN to identify capacity issues (whether internally or externally) and to develop mitigating measures and action plans should capacity issues arise.
b. **Anti-corruption measures**. All large scale procurements must include suitable safeguards against fraud and corruption. PLN has, over the last three to four years, has taken a number of important initiatives to curb corruption within the organization and has significantly strengthened internal controls. To further strengthen the PLN's oversight and detection mechanism the program action plan includes a procurement monitoring framework and spending pattern of the program. PLN will report every quarter to their board/Value for Money Committee and to ADB on the indicators in the procurement monitoring framework and provide the updated spend profile. Furthermore, PLN will carry out procurement audits covering 10 % of all contracts.

42. The key to manage procurement risk in this and subsequent RBLs with PLN is to have all procurement monitored at a corporate level. PLN's procurement guidelines require that PLN introduce a procurement monitoring system, including an expenditure analysis of their procurement. A procurement monitoring framework is at Appendix 2 of the RRP. If this is

implemented for the program both PLN and ADB can adequately manage procurement risks and take corrective action if and when necessary.

43. The procuring entities for the Program are the following: the **PLN Division of Strategic Procurement (DIV DAS)**, the **PLN Regional Planning Division for Sulawesi and Nusa Tenggara (DIV PRSNT)**, the **PLN Division of Supply Chain Management (SCM)**, and the **PLN Wilayah** (regional offices along with their respective area offices) in the following regions: **Sulutenggo** (North Sulawesi, Central Sulawesi, and Gorontalo), **Sulselrabar** (South, South East, and West Sulawesi), **NTT** (East Nusa Tenggara), and **NTB** (West Nusa Tenggara). Below is the description of indicative procurement profile of the program:

a. Goods (total aggregate estimated total volume of USD 820 million for the broader PLN program), which will involve the following:
   (i) The procurement of the SCADA system by selected PLN Wilayah (as required). Some of the PLN Wilayah offices (such as Wilayah Sulselrabar and NTB) already have the SCADA system, however, with the expansion of the distribution lines, the existing SCADA system may not be adequate that a new system is to be purchased and installed, as needed basis. The value of contracts is expected to be around USD 3 million per contract.
   (ii) The procurement of main distribution materials (referred to as "MDU") by SCM, whose value is in the range of USD 3-10 million per contract, which can be grouped as follows:
      - **Materials for Medium Voltage Overhead Network** (for up to 20 kV, with an aggregate estimated total volume of USD 45 million for the broader PLN program), such as: conductors, isolators, transformers, lightning arresters, polls, etc.
      - **Materials for Medium Voltage Cable Network** (for up to 20 kV, with an aggregate estimated total volume of USD 63 million for the broader PLN program), such as the purchase of cables for both on and underground.
      - **Distribution Switchgear**, which could include the LBS and recloser, with an aggregate estimated total volume of USD 600 million for the broader PLN program.
      - **Materials for Low Voltage Network**, such as: polls, cables, energy meters, MCB, etc, with an aggregate estimated total volume of USD 75 million for the broader PLN program.
      - **House Connection, Meter and Limiter Device**, with an aggregate estimated total volume of USD 58 million for the broader PLN program.

b. Civil Works (total aggregate estimated total volume of USD 273 million for the broader PLN program), which includes the erection and installation of MDU, as well as the services for other small refurbishment. The procurement will be done by the PLN Wilayah, with individual contract amount of less than USD 5 million per contract. The work location is scattered and it is simple in nature, and no foreign bidders are anticipated to be interested in the contracts.

c. EPC for Pilot Smart Grid System Development (total aggregate estimated total volume still to be determined, currently estimated around USD 48 million for the broader PLN program), which may include the design, development and installation of the smart grid IT system as well as the procurement of specific equipment and device, such as: electrical smart device, smart meters or other

components that provide live data for managing the load on the grid. The first pilot under this RBL Program will develop the smart grid system in four PLN area locations in SNT Region. Considering that this will be the first time for PLN to perform such technology, the procurement will be done following PLN's open competitive bidding allowing international bidders to participate. The procurement planning and the development of bidding documents will be performed by Division of Engineering and Procurement Planning (DIV EPP), after getting the inputs from DIV PRSNT, and the Smart Grid Task Force (including DIV SIS, DIV RKO, SPKK and others). After the procurement plan and bidding documents are available, the procurement of EPC for pilot smart grid system will be conducted by either the DIV DAS or DIV PRSNT, depending on further development and studies of the Smart Grid Task Force and the decision of the PLN Board of Directors. As a general rule, if the pilot smart grid will involve smaller and specific areas and for contracts below USD 12 million equivalent, it is very likely that the procurement will be performed by DIV PRSNT with the supervision by DIV DAS. However, if this is considered as a strategic development, then it is very likely that DIV DAS will carry out the procurement

44. The procurement risks and mitigation measures are in **Table 10** below and program actions are included in Section VI.

Table 10: Procurement Risk Profile and Mitigation Measures

Risks	Ratings	Key Mitigating Measures
Large investments in the sector stretch existing institutional capacity to undertake innovation particularly at the regional level.	Moderate	PLN will strengthen the mandate of its regional directorates to undertake pilot projects and develop staff capacity through its training programs.
Procurement may be delayed.	Low	The existing procurement monitoring framework, which has been developed and operational under the predecessor RBL program for the Electricity Grid Strengthening—Sumatra Program, will be rolled out to be applicable in this program.
Market capacity and supply risk issues cause price fluctuations.	Moderate	ADB and PLN will develop a procurement monitoring and spending profile to identify a lack of competition or above-normal contract prices due to market failure.
PLN struggles with initiatives to strengthen internal controls.	Substantial	The procurement monitoring system will be used to detect red flags and suspicious patterns in contract awards. PLN will submit quarterly reports to its board of directors, its value for money committee, and to ADB on the indicators in the procurement monitoring framework; and will provide the updated spending profile. In addition, procurement audits will be carried out covering 10% of the contracts under the program. Any issues identified will be discussed with PLN's management team, and relevant government authorities as appropriate.

ADB = Asian Development Bank, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.
Note: Risk factors are assessed against two dimensions: (i) the likelihood that the risk will occur, and (ii) the impact of the risk on the outcome. Rating scale: low = low likelihood and low impact; moderate = substantial to high likelihood, but low to moderate impact; substantial = low to moderate likelihood, but substantial to high impact; high = high likelihood and high impact.
Source: ADB.

45. Lessons learnt from the predecessor ADB financed RBL Program for the Electricity Grid Strengthening Sumatra Program (Loan 3339-INO and Loan 8297-INO) are also factored in the procurement system assessment, including in the formulation of the Program Action Plan.

3. Anticorruption System

46. Since the program is part of PLN's overall overarching generation expansion program, it will be implemented in accordance with the legal framework and through institutions designed to protect PLN from corruption risks whilst aiming to become a continuously growing and competitive state-owned enterprise. PLN has developed a structure and system of good corporate governance (GCG) by adhering to its principles in accordance with the rules and the regulations, as well as the best practices. The background to GCG implementation is a follow-up to Decree of the Minister of State-Owned Enterprise BUMN No. KEP- 117/M-MBU/2002 dated 31 July 2002 which was subsequently amended by Regulation of the Minister of State-Owned Enterprise No. PER-01/MBU/2011 dated 1 August 2011 concerning the Implementation of Good Corporate Governance in State-Owned Enterprises, which states, "SOE shall carry out its operations by adhering to GCG principles of transparency, accountability, responsibility, independence, and fairness".

47. The inclusion of GCG in its daily operations is PLN's determination to become a company that continues to grow and improve with quality services and working processes and a strong code of conduct. The objectives of GCG include:

a. Controlling and directing the relationship between the structures of the company, employees, customers, business partners, as well as the community and environment properly in which the interest of all parties are fulfilled.
b. Encouraging and supporting the development of PLN.
c. Managing the resources with strong fiduciary oversight.
d. Managing the risks better.
e. Enhancing accountability to the stakeholders.
f. Preventing any deviations in the management of PLN.
g. Improving the working culture of PLN.
h. Improving PLN's image to become better.

48. PLN is fully committed to realizing these objectives. It is, therefore consistent in enforcing GCG implementation and the following regulations are the basis of GCG implementation in PLN:

a. Law 31/1999 on the Eradication of the Criminal Act of Corruption and Law 20/2001 on the Amendment to Law 31/1999.
b. Law 19/2003 concerning SOEs.
c. Regulation of Nº PER-01/MBU/2011 concerning the Implementation of Good Corporate Governance in SOEs as amended by Decree of MSPE Nº PER-09/MBU/2012 dated 6 July 2012 which states:
    (i) Transparency is openness in decision making process and disclosing material and relevant information about the company.
    (ii) Accountability is clarity of function, implementation, and responsibility of the company so that corporate governance shall be implemented effectively.
    (iii) Responsibility is the suitability of corporate governance against laws and regulations as well as principles of a healthy corporation.
    (iv) Independence is condition in which the company is professionally managed without any conflict of interests and influence/pressure from any parties that is not in accordance with the laws and principles of a healthy corporation.
    (v) Fairness is justice and equality in fulfilling the rights of stakeholders that are based on agreements and laws.

d. Decree of the Secretary of MSOE Nº SK-16/S.MBU/2012 dated 6 June 2012 concerning Indicator/Parameter for Assessment and Evaluation of Good Corporate Governance Implementation in State-owned Enterprises.
e. Laws Nº 1/1995 concerning Limited Liability Company as amended by Law No. 40/2007 dated August 16, 2007.
f. PLN Board Manual of December 2010 outlining the relationship and working framework between the Board of Commissioners and the Board of Directors signed by all members.

49. ADB has a fiduciary responsibility to ensure that its loans and other forms of financing are used only for the purposes for which they were granted, in accordance with the Agreement Establishing the Asian Development Bank. To uphold that obligation, ADB developed guidelines to prevent or mitigate fraud, corruption, and other prohibited activities in RBL operations financed in whole or in part by ADB (Appendix 3). These guidelines have been discussed with PLN.

a. Anticorruption System Related Program Actions Status

50. No program actions specifically related to anticorruption have been identified.

C. Satisfying Procurement Member Country Eligibility Restrictions

51. It is confirmed that, given the program's expenditure and procurement profiles, it is unlikely that the ADB's member country procurement eligibility restrictions (as referred to in paras. 130-132 of the RBL policy) will be breached, and the regular procurement monitoring report will assure this.

D. Safeguard Systems

52. A program safeguard system assessment assessed the safeguards system of the government and PLN, and confirms safeguard categorizations of B for environment, involuntary resettlement, and indigenous peoples.[26] All environment policy principles, 7 out of 12 involuntary resettlement principles, and 6 pout of 9 indigenous peoples principles of ADB safeguard policy statement (2009) are triggered. Potential construction-related impacts include soil erosion, noise, dust, and generation of waste. Potential impacts during operation include trimming of trees within the right-of-way of distribution lines. The program impacts are site-specific, and in most cases mitigation measures can be readily designed. Expansion of the distribution network usually require (i) use of no more than 0.2 square-meter (m^2) of land for each concrete pole; (ii) possible removal of non-land assets (primarily trees) for conductors stringing; and (iii) about 4.5 m^2 (1.5 m x 3 m) of land for each pole-mounted transformers installed on two utility poles. Nusa Tenggara and Sulawesi are inhabited by a variety of ethnic groups with diverse languages. Some of the land used for the program may be owned by ethnic groups.

53. Identified weakness include: (i) safeguards screening (of projects in legally protected areas and key biodiversity areas); (ii) institutional capacity; (iii) safeguards monitoring/reporting for distribution line activities; (iv) guidance on environmental mitigation measures; (v) asset and waste management and disposal of used equipment, including hazardous substances; (vi) consultation with affected people; and (vii) written agreement for use of land (for distribution transformer). They will be addressed by program actions which include a screening mechanism

[26] Program Safeguard Systems Assessment (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

to ensure the RBL program excludes activities that would be classified as category A. PLN's head office as well as PLN Wilayah (regional offices along with their respective Area offices) in NTB, NTT, and Sulawesi will be responsible for the implementation of the safeguards program actions. ADB will monitor the status of the program actions during program implementation. DLI 8 addresses asset and waste management. The draft program safeguard system assessment has been disclosed on the ADB website.

E. Gender and Social Dimensions

54. Although expanding and strengthening the electricity grid has no gender-specific actions, women will substantially benefit from the program. Having reliable and affordable household electricity supply will reduce the time and energy spent by women to obtain other fuels. It will also enable women to engage in income generating activities such as sewing and food processing from their own homes. Replacing polluting wood and kerosene stoves with electric stoves will reduce respiratory disease and other health risks for women. Having well-lit communities will deter crime and reduce incidences of violence against girls and women. Electricity supply in health centers and at the village midwife's home will especially benefit pregnant women and women giving birth. Electricity services will make it easier for communities to pump and store water, thus alleviating the women's traditional burden of carrying water.

F. Communication and Information Disclosure Arrangements

55. ADB's Public Communication Policy has been shared and ADB disclosure requirements have been discussed with PLN.[27] PLN has consulted with stakeholders, including government officials, during program design and preparation stage. As one of the PAP, meaningful consultation with affected peoples and indigenous peoples will be strengthened. Local communities will be consulted by PLN as part of the social and environmental study to gather their views on the proposed projects under the program. Open communication at all levels will continue during program implementation. The communication and disclosure actions under the program will include consultation meetings with stakeholder communities, media, and websites.

G. Development Coordination

56. Cooperation and harmonization of development partner's activities in the energy sector have been generally fluid, with regular invitations from each of the key development partners including the AFD, JICA, KfW, and World Bank to participate in meetings or missions and exchanges of information and documents. ADB also joined the above key development partners in holding policy dialogue with the government on several occasions, which was well received by the government. The portfolio and sector work of the ADB is well coordinated in Indonesia through the active involvement of the Indonesia Resident Mission. Since 2005, ADB, the Japan International Cooperation Agency (JICA), and the World Bank have been the government's principal development partners in the energy sector. Given the importance of power subsector reforms for the medium- and long-term plans of the government, the three development partners joined forces to work on the Infrastructure Reform Sector Development Program, which was initiated in 2005 and completed in 2010. The program focused on key policy action items harmonized into a common agenda covering a review of tariffs, targeted subsidies, the possibility of a proper regulator, and transparency in public-private partnerships for independent power producer contracts.

[27] ADB. 2011. Public Communication Policy. Manila.

V. INTEGRATED RISKS AND MITIGATING MEASURES

A. Key Risks and Mitigating Measures

57. The program is the second energy sector RBL program in Indonesia. While counterparts are now more familiar with the approach, the focus of the Program on eastern Indonesia introduces some new elements and some additional risks. **Table 11** summarizes the main risks. A fuller risk assessment is provided in the Integrated Risk Assessment and Mitigating Measures.[28]

Table 11. Summary of Integrated Risk Assessment and Mitigating Measures

Risks	Ratings	Key Mitigating Measures
Results. Customer demand declines due to slower economic growth.	Substantial	The program will monitor the impact of macroeconomic factors on energy sales and consider adjustment of disbursement allocations if necessary and justified.
Results. Large investments in the sector stretch existing institutional capacity to undertake innovation particularly at the regional level.	Moderate	PLN will strengthen the mandate of its regional directorates to undertake pilot projects and develop staff capacity through its training programs.
Expenditures and financing. PLN's funding targets for required investments in power generation, transmission, and distribution are not met.	Moderate	The government is providing guarantee of tariff subsidies and equity injections to enable PLN to finance its capital expansion program while meeting financial covenants. ADB and other development partners are supporting tariff reform through a coordinated policy-based loan.
Monitoring and evaluation. Institutional pressure to achieve established targets lead to inconsistent reporting.	Substantial	ADB will mobilize an independent verification agent to crosscheck the reported results, such as by comparing them with tariff collection data.
Procurement. Market capacity and supply risk issues cause price fluctuations.	Moderate	ADB and PLN will develop a procurement monitoring and spending profile to identify a lack of competition or above-normal contract prices due to market failure.
Safeguards. The issuance of government approval for the disposal of assets and waste is delayed.	Substantial	PLN and ADB will have close coordination with the Ministry of State-Owned Enterprises during program implementation.
Fraud and corruption. PLN struggles with initiatives to strengthen internal controls.	Substantial	The procurement monitoring 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.
Overall RBL program risk	**Moderate**	

ADB = Asian Development Bank, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.
Note: Risk factors are assessed against two dimensions: (i) the likelihood that the risk will occur, and (ii) the impact of the risk on the outcome. Rating scale: low = low likelihood and low impact; moderate = substantial to high likelihood, but low to moderate impact; substantial = low to moderate likelihood, but substantial to high impact; high = high likelihood and high impact.
Source: ADB.

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

VI. Program Action Plan

A. Status of Program Action Plan

58. The PAP is set out in **Table 12**. The actions included in the PAP will be reflected in PLN's progress reports.

Table 12: Program Action Plan

Actions	Responsible Teams	Timeframe
Program scope		
1. Plan and finalize the selection of locations and components for the strengthening and expansion of the distribution system, and criteria for sequencing related interventions under the program.	*Wilayahs*; DIV PR SNT	from 2017
2. Support the national program to develop tourism to stimulate job creation and economic growth. Establish annual targets for the number of new customers in PLN *Areas* with government-designated tourism development sites, and include progress in quarterly reports, with semi-annual consultation with the MOF.	*Wilayahs*; DIV PR SNT; DIV SIS; DIV RKO	from 2017
Technical		
3. Analyze work process flows relating to the timely completion of distribution implementation contracts. Use the solutions coming from this process to accelerate the implementation and completion of distribution contracts.	DIV SCM; *Wilayahs* (for works contracts); DIR REG SNT	by the end of 2017
Program results		
4. Build the capacities of and conduct orientation sessions for relevant field personnel on the RBL program and DLI reporting.	DIV TLN; DIV HCMS	from 2017
5. Conduct capacity building programs in targeted *areas* to enhance the understanding and acceptance of new technologies and innovations (e.g., smart grids and digital prepaid meters) among stakeholders.	*Wilayahs*; DIR REG SNT; DIV SIS; Smart Grid Task Force	from 2018
Monitoring and evaluation		
6. Establish tracking, reporting, and verification systems for DLIs: (i) incorporate DLIs into the SILM in a separate module, and set up mechanisms to produce regular DLI reports so that corrective action is possible; and (ii) based on these internal DLI reports, set up mechanisms to produce the Annual DLI Achievement Report, to be shared with the MOF and ADB.	SPKK; DIR REG SNT	from 2017
7. Implement or update the measurement and recording of indicator baselines, with a view to (i) conduct effective performance monitoring; and (ii) report on DLIs.	SPKK; DIR REG SNT	from 2017
8. Strengthen PLN's regular monitoring and evaluation system for reporting DLIs and other key performance indicators in real time, including the generation of monthly summary progress reports on all RBL program indicators, which will become the basis for annual reporting on DLIs and other indicators.	SPKK; DIR REG SNT	from 2017
9. Assess the achievement and verification of the DLIs by PLN and the independent verification agent and authorize the DLI Achievement Report to be shared with the MOF and ADB. Submit the withdrawal application directly to ADB and a copy to the MOF, accompanied by the review mission's verification of DLI achievement and other supporting documents.	DCP; SPKK; DIV RKO; DIR REG SNT; DIV TRE	from 2017
Financing and partnerships		
10. Monitor funding allocations from the Government of Indonesia and all financing partners against agreed funding and investment targets, using existing systems run by PLN's Finance and Budgeting Division and Treasury Division.	DIV TRE; DIV AKT; DIV ANG; DIV KEU	from 2017
Financial management		
11. Complete the full integration of IBM Cognos' Budget Planning and Control System with the ERP system to allow (i) system-generated comparisons of the budget with actual expenditures, and (ii) system-generated consolidated financial statements.	DIV AKT ; DIV KEU ; DIV ANG	by January 2018

Actions	Responsible Teams	Timeframe
Procurement		
12. PLN's new procurement monitoring system "AMK" implemented in program areas, and a procurement monitoring report prepared and submitted quarterly.	DIV SCM; DIR REG SNT; *Wilayahs*	by the end of 2017
13. A SCM and dispatching system implemented in program areas.	DIV SCM	by the end of 2017
14. Procurement audits each year of 10% of all contracts at *Wilayah* and *Area* offices (information sheet shared with ADB).	DIV SCM; DIR REG SNT; *Wilayahs*; SPI	starting from 2017 audit
15. Prepare and conduct open competitive bidding (allowing international bidders to participate) following PLN's procurement procedures for all pilot smart grid projects under the program.	DIV PR SNT; Smart Grid Task Force (including DIV SIS, DIV RKO, SPKK, and others); DIV DAS; DIV EPP	from 2018
Safeguards		
16. Issue a technical guidance on the implementation of safeguard program actions (including the guidance on safeguards screening[a]) to General Managers of PLN *Wilayahs*.	DIV K3L	prior to the first annual disbursement
17. Strengthen meaningful consultation[b] with affected peoples and IPs by: (i) issuing guidance on meaningful consultation in collaboration with DIV PRSNT and SKOM (the guidance will ensure the participation of IPs in tailoring project benefits for affected IPs communities in a culturally appropriate manner) with reference to MOEF Regulation No.17/2012; and (ii) document the process and result of the consultations.	(i) DIV K3L (ii) *Wilayahs*	(i) prior to the first annual disbursement (ii) from 2017 onward
18. Ensure the application of environmental mitigation measures to the construction of distribution lines by: (i) preparing environmental documents (UKL/UPL or SPPL) for the construction of distribution lines that is approved by the BLHD; (ii) specifying environmental mitigation measures in the contract document; (iii) monitoring the implementation of the mitigation measures; and (iv) proposing and implementing corrective actions if noncompliance with the proposed mitigation measures is identified.	*Wilayah*s	from 2017 onward
19. Improve the management of waste and assets at warehouses by: (i) preparing an inventory of used equipment for disposal as of the end of 2016; (ii) preparing an inventory of used equipment for disposal at the end of each year from 2017 onward; (iii) securing approval of the disposal inventory (as of the end of 2016) from the PLN Board of Commissioners (for equipment less than 5 years old) and the MSOE (for equipment more than 5 years old); (iv) revising the PLN Guidance for Asset Management (1998) to accelerate the disposal of hazardous waste, including a requirement to prepare and submit annual disposal inventories from the end of 2017 onward; (v) preparing a waste and asset management improvement plan (including a timeframe, budget, and human resources) in consultation with DIV AKT and DIV 3KL, to be approved by DIR REG SNT; (vi) cleaning up existing oil spills in accordance with relevant regulations (including MOEF Regulation No. 33/2009 and Government Regulation No. 101/2014), and disposing of excavated hazardous waste material at appropriately licensed hazardous waste disposal facilities, while retaining records of all transfer notes; (vii) equipping warehouse sites (with hazardous wastes) with oil containment and protection measures; and (viii) implementing the waste and asset management improvement plan.	(i) *Wilayahs*; DIV AKT (ii) *Wilayahs*; DIV AKT (iii) DIV AKT (iv) DIV AKT; DIV K3L (v) *Wilayahs*; *Areas;* DIR REG SNT (vi) *Wilayahs*; *Areas* (vii) *Wilayahs*; *Areas* (viii) *Wilayahs*; *Areas*	(i) by Dec 2017 (ii) every first quarter starting from 2018 onward (iii) by Dec 2018 (iv) by Dec 2017 (v) by Dec 2017 (vi) by Dec 2018 (vii) by Dec 2020 (viii) by Dec 2021
20. Enhance community safety along distribution lines (including transformers) under operation by (i) building community awareness to prevent the growth of tall vegetation along the distribution lines and public contact with potentially dangerous electrical equipment; (ii) monitoring tree trimming by the distribution line maintenance contractors; (iii) reducing outages due to tree disturbances (baseline data collected in 2017); and (iv) posting safety notices on newly installed distribution transformers.	(i) *Wilayahs* (Public Relation Division) (ii) *Wilayahs* (iii) *Wilayahs* (iv) *Wilayahs* (through contractors)	(i) from 2017 onward (ii) from 2017 onward (iii) from 2017 onward (iv) from 2017 onward
21. Obtain and document the written agreement of landowners for the use of land for distribution transformers, following Buku 4.	*Wilayahs*	from 2017 onward
22. Monitor resettlement outcomes and their impacts on the living standards of displaced persons by reviewing complaints received, and take necessary	(i) *Wilayahs* (ii) *Wilayahs*	(i) from 2017 onward

Actions	Responsible Teams	Timeframe
actions if the impacts are found to affect the income and livelihood status of the affected persons. The monitoring result should be documented, and corresponding measures formulated and implemented if income and livelihood status are affected.		(ii) from 2017 onward
23. Appoint safeguards focal persons who have attended PLN's internal safeguards training at each *Wilayah* and *Area* to implement environmental and social safeguard activities.	*Wilayahs;* *Areas*	prior to the first annual disbursement
24. Build capacity on environmental and social safeguards with a focus on the safeguard program actions by holding regular meetings (including refresher training sessions) convening relevant PLN staff at headquarters, *Wilayahs*, and *Areas*, as well as all focal persons, contractors and key local government counterparts) to ensure the smooth and timely implementation of the safeguard program actions.	DIV K3L	from 2017 onward (at least once a year)
25. Monitor and ensure the implementation of the program actions by (i) monitoring and documenting the implementation of program action 19 and reporting to the PLN *Wilayahs* regularly (at least semi-annually), with records (transfer notes) of the disposal of hazardous waste at appropriately licensed facilities; (ii) monitoring and documenting the implementation of program actions 17, 18, 19, 21, 21 and 22, and reporting to DIV PR SNT, DIV PPT, and DIV K3L regularly (at least semi-annually), with records (transfer notes) of the disposal of hazardous waste at appropriately licensed facilities; and (iii) documenting the list of distribution line projects (including village names and the length of distribution lines) with the result of safeguards screening, and submitting this to DIV PR SNT and DIV K3L annually.	(i) *Areas* (focal persons) (ii) *Wilayahs* (focal persons) (iii) *Wilayahs*	(i)–(ii) from 2017 onward (iii) from 2017 onward

ADB = Asian Development Bank, *Area* = PLN area office under *Wilayah*, BLHD = provincial or district environment agency (*badan lingkungan hidup daerah*), DCP = Director of Corporate Planning, DIR REG SNT = Directorate of Sulawesi and Nusa Tenggara Regional Business, DIV AKT = Accounting Division, DIV ANG = Budget Division, DIV DAS = Strategic Procurement Division, DIV EPP = Engineering and Procurement Planning Division, DIV HCMS = Human Capital Management System, DIV KEU = Finance Division, DIV K3L = Health, Safety and Environment Division, DIV PPT = Permit and Land Division, DIV PR SNT = Sulawesi and Nusa Tenggara Development Division, DIV RKO = Corporate Planning Division, DIV SCM = Supply Chain Management Division, DIV STI = Information Technology Division, DIV SIS = System Planning Division, DIV TLN = Talent Division, DIV TRE = Treasury Division, DLI = disbursement-linked indicator, ERP = enterprise resource planning, IBM = International Business Machines, MOEF = Ministry of Environmental and Forestry, MOF = Ministry of Finance, MSOE = Ministry of State Owned Enterprises, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending, SCM = Supply Chain Management, SILM = Management Reporting Information System (Sistem Informasi Laporan Manajemen), SKOM = Satuan Komunikasi Korporat, SPI = Satuan Pengawasan Intern (Internal Control Unit), SPKK = Satuan Pengendalian Kinerja Korporat (Corporate Performance Control Unit), SPPL = statement of environmental management and monitoring undertaking (*surat pernyataan kesanggupan pengelolaan dan pemantauan lingkungan hidup*), SPS = Safeguard Policy Statement, UKL/UPL = environmental management efforts and environment monitoring efforts (*upaya pengelolaan lingkungan hidup/upaya pemantauan lingkungan hidup*), *Wilayah* = PLN regional office.

[a] RBL for programs will exclude activities classifiable as category A under the SPS (para. 4 of the program safeguard systems assessment). Considering the anticipated scope and magnitude of impacts associated with the construction of distribution lines, any such activities located in or directly adjacent to protected areas listed in the Ministry of Environment Regulation No. 05/2012, Appendix 3 or unprotected key biodiversity areas are classified as category A. PLN *Wilayahs* will identify (i) projects in protected areas (as designated by the government) and key biodiversity areas in consultation with the spatial planning office of the city or district development planning agency (*Badan Perencanaan Pembangunan Daerah*) and forestry agencies, with reference to the protected areas or key biodiversity areas village list provided by ADB, and (ii) projects in indigenous communities using the indigenous peoples communities village list provided by ADB. Before commencing any construction or rehabilitation works under the program, PLN *Wilayahs* will conduct the screening, and ADB will check the result of this screening to confirm that the RBL funding is not used for activities that would be classified as category A under the SPS.

[b] Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out throughout the project cycle; (ii) discloses in a timely fashion relevant and adequate information that is understandable and readily accessed by affected people; (iii) is undertaken in an atmosphere free from intimidation or coercion; (iv) is gender-inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) incorporates all relevant views of affected people and other stakeholders into decision-making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

Sources: ADB; PLN.

VII. Technical Assistance

59. No technical assistance loans or grants are associated at start-up of the program. An IVA will be engaged through technical assistance prior to the first annual verification.

VIII. Monitoring of Key Program Covenants

60. The loan agreement will include covenants related to Procurement and Safeguard restrictions.[29] It will also include covenants on the requirements to submit quarterly reports on the program action plan and accomplishments of DLIs and other items agreed during the loan negotiations. Monitoring of key program covenants will take place through missions and meetings.

IX. Summary of Key Outstanding Issues

61. The key outstanding issues and actions during program implementation and corrective actions taken will be summarized in Appendix 9.

X. Accountability Mechanism

62. People who are or may in the future be adversely affected by the program may submit complaints through ADB's accountability mechanism. The accountability mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted operations can voice their problems and seek a resolution of these problems, as well as report alleged violations of ADB's operational policies and procedures.

63. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems and/or issues by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they make use of the accountability mechanism.[30]

64. RBL operations will be subject to the Accountability Mechanism Policy.[31] The RBL will not alter ADB's role in problem solving. Because no operations manual on RBL will be produced during the piloting stage, the compliance review will be carried out in accordance with the Accountability Mechanism Policy and the RBL policy.

XI. CHANGES IN PROGRAM SCOPE AND IMPLEMENTATION MECHANISMS

65. Changes of scope and implementation arrangement during the course of implementation (including both major and minor changes) are to be recorded in Appendix 10 to provide a chronological history of changes in scope and implementation arrangement for the program.

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[29] In compliance with RBL policy restrictions in ADB (2013) *Piloting Results-Based Lending for Programs*.

[30] For further information, see: ADB's Accountability Mechanism. http://www.adb.org/site/accountability-mechanism/main

[31] ADB. 2012. *Review of the Accountability Mechanism Policy*. Manila.

XII. PROGRAM ORGANIZATIONAL STRUCTURE AND FOCAL STAFF

A. Organizational Structure

66. Overall responsibility for the development and mainstreaming of the program rests with PLN and therefore PLN's head office, operating units, subsidiaries, and field level personnel responsible for implementing the program will also be responsible for achieving results associated with it. The program will be implemented from December 2016 to December 2020. PLN will be both the executing and implementing agency, which will implement this program through its head office as well as its regional offices and divisional offices. PLN will assign staff to oversee implementation of the program. It will set policy guidelines and strategic directions for the program, be headed by the PLN Director for Corporate Planning, and members from the divisions under the directorate. The SPKK unit of PLN will monitor and report on progress in achieving the DLIs.

67. Actions to advance government-wide reforms to mitigate fiduciary risks in an incremental and sustainable manner are included in the PAP. This PAP is a living document that can be refined, improved, and updated during implementation, as needed.

Table 13: Program Officers and Focal Persons
(as of August 2017)

No.	Key PLN Staff and Positions	Key ADB Staff and Positions
1.	Nicke Widyawati Director Corporate Planning	Andrew Jeffries Director, Southeast Asia Energy Division
2.	Doddy B. Pangaribuan Head, Corporate Planning Division	Toru Kubo Principal Energy and Climate Change Specialist, Southeast Asia Energy Division
3.	Anggraini Ika Dewi Senior Manager of Foreign Loan and Grant, Corporate Planning Division	Said Zaidansyah Principal Counsel Office of the General Counsel
4.	Noor Rahmania Deputy Manager for Foreign Loan and Grant, Corporate Planning Division	Aloha Samoza Senior Project Officer, Southeast Asia Energy Division

B. Changes during Implementation

Table 14: Changes in Key Executing Agency Staff and ADB Mission Leader
(as of August 2017)

Number	Changes	Date	Reasons for the Change
1.			
2.			

Sources: Asian Development Bank and PLN.

Appendix 1: OCR Loan Agreement

ALLOCATION AND WITHDRAWAL OF LOAN PROCEEDS (Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program)							
DLIs	**Total Amount Allocated for OCR Financing ($ '000)**						
	Advance Financing	**2017**	**2018**	**2019**	**2020**	**2021**	**TOTAL**
DLI1							
DLI2							
DLI3							
DLI4							
DLI5							
DLI6							
DLI7							
DLI8							
TOTAL							

DLI = disbursement-linked indicator, OCR = ordinary capital resources
Source: Asian Development Bank

Appendix 2: List of Linked Documents

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

Supplementary Documents

18. Program Scope of Work
19. Monitoring and Evaluation Framework
20. Procurement Monitoring Framework
21. Additional Information to Program Safeguard Systems Assessment
22. Procurement Assessment of Indonesia’s State Electricity Corporation (PLN)

Appendix 3: Proposed Guidelines to Prevent or Mitigate Fraud, Corruption and Other Prohibited Activities in Results-Based Lending for Program

A. Purpose and General Principles

1. The developing member country (DMC) is responsible for the implementation of programs supported by results-based lending (RBL). The Asian Development Bank (ADB) has a fiduciary responsibility to ensure that its loans and other forms of financing are used only for the purposes for which they were granted, in accordance with the Agreement Establishing the Asian Development Bank (the Charter).[1] To uphold that obligation, ADB presents these guidelines to prevent or mitigate fraud, corruption, and other prohibited activities in RBL operations financed in whole or in part by ADB. These guidelines build upon the legal obligations presented in the loan agreement and apply to operations funded by the RBL (the programs).[2]

2. These guidelines do not limit any other rights, remedies, or obligations of ADB or the DMC under the loan agreement or any other agreement to which the ADB and the DMC are both parties.

3. All persons and entities participating in the programs must observe the highest ethical standards; take all appropriate measures to prevent or mitigate fraud, corruption, and other prohibited activities; and refrain from engaging in actions described in these guidelines in connection with such programs.

B. Definitions

4. These guidelines address the following practices as defined by ADB:
   (i) A "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party.
   (ii) A "fraudulent practice" is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit, or to avoid an obligation.[3]
   (iii) A "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to improperly influencing the actions of another party.
   (iv) A "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party.

5. In addition, ADB may investigate conflicts of interest, obstruction, and retaliation:
   (i) A "conflict of interest" is a situation in which a party has interests that could improperly influence a party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations. To

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[1] ADB. 1966. *Agreement Establishing the Asian Development Bank.* Manila.

[2] ADB may support a part (or a slice) of a government program or the entire government program through RBL. The program or the part that is supported by the RBL is the RBL operation. The term "program" in these guidelines refers to the RBL operation as defined unless otherwise specified.

[3] To act "knowingly or recklessly," the fraudulent actor must either know that the information or impression being conveyed is false, or be recklessly indifferent as to whether it is true or false. The inaccuracy of such information or impression, committed through negligence, is not enough to constitute a fraudulent practice.

the extent that conflicts of interest may provide an unfair competitive advantage or compromise the integrity of financial and governance systems, conflicted persons and entities must be excluded from participating in relevant program activities.

(ii) An "obstructive practice" includes deliberately destroying, falsifying, altering, or concealing evidence material to an investigation; making false statements to investigators in order to materially impede an investigation; threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or materially impeding ADB's contractual rights of audit or access to information.

(iii) Retaliation against whistleblowers or witnesses is any detrimental act, direct or indirect, recommended, threatened or taken against a whistleblower or witness or person associated with a whistleblower or witness in a manner material to a complaint because of the report or cooperation with an investigation by the whistleblower or witness.

C. Developing Member Country's Actions to Prevent Fraud, Corruption, and Other Prohibited Activities in Results-Based Lending for Programs

6. Unless otherwise agreed in writing by the DMC and ADB, the DMC will take timely and appropriate measures to

(i) ensure that the program is carried out in accordance with these guidelines;

(ii) avoid conflicts of interest in the program;

(iii) prevent fraud, corruption, and other prohibited activities from occurring in the program, including adopting, implementing, and enforcing appropriate fiduciary and administrative practices and institutional arrangements to ensure that the proceeds of the loan are used only for the purposes for which the loan was granted;

(iv) promptly inform ADB of allegations of fraud, corruption, and other prohibited activities found or alleged related to a program;

(v) investigate allegations of fraud, corruption, and other prohibited activities and report preliminary and final findings of investigations to ADB;

(vi) respond to, mitigate, and remedy fraud, corruption, or other prohibited activities that are found to have occurred in a program and prevent its occurrence;

(vii) cooperate fully with ADB in any ADB investigation into allegations of fraud, corruption, and other prohibited activities related to the program, and take all appropriate measures to ensure the full cooperation of relevant persons and entities subject to the DMC's jurisdiction in such investigation, including, in each case, allowing ADB to meet with relevant persons and to inspect all of their relevant accounts, records and other documents and have them audited by or on behalf of ADB; and

(viii) ensure that persons or entities sanctioned by ADB do not participate in RBL supported activities in violation of their sanction.

D. ADB's Actions to Prevent Fraud, Corruption, and Other Prohibited Activities in Results-Based Lending for Programs

7. Unless otherwise agreed in writing by the DMC and ADB, ADB will

(i) inform the DMC of credible and material allegations or other indications of fraud, corruption, and other prohibited activities related to a program, consistent with ADB's policies and procedures;

(ii) have the right to investigate allegations independently or in collaboration with the DMC;
(iii) inform the DMC of the outcome of any investigation, consistent with ADB policies and procedures;
(iv) have the right to sanction any individual or entity for engaging in practices defined above in accordance with ADB's prevailing sanctions policies and procedures; sanctions may result in that party's exclusion from participating in an RBL-financed activity indefinitely or for a stated period of time;[4] and
(v) recognize sanctions determined by other multilateral development banks (MDB) in accordance with the agreement for the mutual enforcement of debarment.

[4] Participation does not include the performance under contracts entered into or other engagements begun before the date of the loan agreement.

Appendix 4: Status of the Results Framework

(as of xxxx)

Results Indicators	DLI (Yes/ No)	Baseline value/unit of measurement	Baseline Year	Target value (Year)	Actual achievement (Year)
1. **Expanded access to electricity services**: number of total customers increased by an average annual rate of at least 5.6% to reach at least 6.99 million customers by 2020	Yes/ DLI 1	5.62 million customers	2016		
2. **Growth in delivered electricity services:** total annual electricity sales increased by an average annual rate of at least 8.5% to reach at least 15,710 GWh by 2020, with an equal or higher growth rate for commercial customers to reach at least 3,234 GWh annual sales by 2020	Yes/ DLI 2	Energy sales 11,336 GWh (2,334 GWh to commercial customers)	2016		
3. **Improved reliability of services:** Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5% to reach less than 15.82/100 ckm by 2020	Yes/ DLI 3	MV feeder permanent interruptions 19.43/100 ckm	2016		
4. Number of distribution transformer units installed increased by an average annual rate of at least 5.6% to reach at least 50,721 by 2020	Yes/ DLI 4	40,788 units installed	2016		
5. Length of medium-voltage distribution lines installed increased by an average annual rate of at least 5.6% to reach at least 58,764 ckm by 2020, with an equal or higher growth rate in Lombok and Flores combined to reach at least 7,388 ckm by 2020	Yes/ DLI 5	47,256 ckm of medium voltage distribution lines installed (5,941 ckm in Lombok and Flores combined)	2016		
6. Pilot-scale smart grid projects implemented in at least 4 areas by 2021	Yes/ DLI 6	0 SG projects in Sulawesi and Nusa Tenggara	2016		
7. Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021	Yes/ DLI 7	48% of total customers use digital pre-paid meters	2016		
8. Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021	Yes/ DLI 8	0%; no updated inventory	2016		
9. Timely completion of implementation of distribution system contracts increased to more than 75% by 2021	No	45% of distribution system contracts on time	2016		

Appendix 5: Progress in Disbursement-Linked Indicator Verification

(as of XXXX)

Disbursement-Linked Indicators	Progress in Verification	Issues and Changes[a]
Outcome		
1. **Expanded access to electricity services**: number of total customers increased by an average annual rate of at least 5.6%		
2. **Growth in delivered electricity services:** total annual electricity sales increased by an average annual rate of at least 8.5% with an equal or higher growth rate for commercial customers		
3. **Improved reliability of services:** Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5%		
Outputs		
4. Number of distribution transformer units installed increased by an average annual rate of at least 5.6%		
5. Length of medium-voltage distribution lines installed increased by an average annual rate of at least 5.6% with an equal or higher growth rate in Lombok and Flores combined		
6. Pilot-scale smart grid projects implemented in at least 4 areas by 2021.		
7. Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021		
8. Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021		

[a] Delete this column if it is irrelevant.

[b] The PLN defines "*Permanent interruptions*" as any interruption to the system longer than 5 minutes. The interruptions related to generation and transmission faults are excluded for this indicator.

Appendix 6: Disbursement Status Monitoring

Disbursement-Linked Indicator	Total ADB Financing Allocation	Share of ADB Financing (%)	Expected Disbursement by {month and year} ($ million)	Actual Disbursement by {month and year} ($ million)	Share of Total ADB Financing Disbursed (%)
Outcome					
DLI 1: Expanded access to electricity services: number of total customers increased by an average annual rate of at least 5.6%	120	20			
DLI 2: Growth in delivered electricity services: total annual electricity sales increased by an average annual rate of at least 8.5% with an equal or higher growth rate for commercial customers	96	16			
DLI 3: Improved reliability of services: Feeder line permanent interruptions in the distribution system reduced by an average annual rate of at least 5%	48	8			
Outputs					
DLI 4: Number of distribution transformer units installed increased by an average annual rate of at least 5.6%	96	16			
DLI 5: Length of medium-voltage distribution lines installed increased by an average annual rate of at least 5.6% with an equal or higher growth rate in Lombok and Flores combined	96	16			
DLI 6: Pilot-scale smart grid projects implemented in at least 4 areas by 2021	48	8			
DLI 7: Operational efficiency and resource optimization enhanced with digital pre-paid meter or smart meter use increased to at least 75% of total customers by 2021	48	8			
DLI 8: Asset and waste management improved with at least 90% of used PLN equipment from the 2016 disposal inventory safely disposed by 2021	48	8			
Total	**600**	**100**			

Appendix 7: Estimated Program Expenditure

(as of XXXX)

Items	Estimated Expenditures Over the Past Year (xxxx–xxxx) ($ million)	Share of Total Expenditures of the Past year (%)	Cumulative Expenditures to Date (xxxx–xxxx) ($ million)	Share of Total Cumulative Expenditures to Date (%)
1. Item A	0.0		0.0	
2. Item B	0.0		0.0	
3. Item C	0.0		0.0	
Total	0.0		0.0	100.0

Source: Government's Planning Documents

Appendix 8: Status of Program Financing Plan

(as of XXXX)

Source	Financing over the Past Year (xxxx–xxxx) ($ million)	Share of Total Financing of the Past year (%)	Cumulative Amount of Financing to Date (xxxx–xxxx) ($ million)	Share of Total Cumulative Financing to Date (%)
PLN				
(Including PMN)				
ADB				
Others				
Total		100.0		

Source: Government's Planning Documents

Appendix 9: Key Outstanding Issues and Actions

(as of XXXX)

No.	Key Issues	Status in Addressing the Issues	Next Steps	Responsible Agencies and People	Timeframe for Implementation

Appendix 10: Changes in Scope and Implementation Arrangements

(as of XXX)

Number	**Changes** {Summarize the changes and reasons}	**Date**	**Names of Documents** {List names of the document authorizing the changes, e.g., Memo approved by Director xxx dated xxxx}.
1			
2			
3			
4			
5			