Report and Recommendation of the President to the Board of Directors

Project Number: 49080-001
November 2015

Proposed Results-Based Loan
Perusahaan Listrik Negara
Electricity Grid Strengthening—Sumatra Program
(Guaranteed by the Republic of Indonesia)

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 10 November 2015)

Currency unit	–	rupiah (Rp)
Rp1.00	=	$0.000074
$1.00	=	Rp13,597.43

ABBREVIATIONS

ADB	–	Asian Development Bank
ckm	–	circuit-kilometer
DLI	–	disbursement-linked indicator
GW	–	gigawatt
GWh	–	gigawatt-hour
kV	–	kilovolt
M&E	–	monitoring and evaluation
PAP	–	program action plan
PLN	–	Perusahaan Listrik Negara (State Electricity Corporation)
RBL	–	results-based lending
RPJMN	–	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
RUPTL	–	Rencana Usaha Penyediaan Tenaga Listrik (Electricity Power Supply Business Plan)

NOTE

In this report, "$" refers to US dollars.

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RESULTS BASED PROGRAM AT A GLANCE

1. Basic Data — **Project Number:** 49080-001

Project Name	Electricity Grid Strengthening—Sumatra Program (formerly Sumatra Power Grid Strengthening Program)	**Department /Division**	SERD/SEEN
Country	Indonesia	**Executing Agency**	P.T. Perusahaan Listrik Negara
Borrower	P.T. Perusahaan Listrik Negara		

2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓ **Energy**	Electricity transmission and distribution	575.00
	Total	**575.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 1: Economic opportunities, including jobs, created and expanded	Climate Change impact on the Project	Low

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Client relations, network, and partnership development to partnership driver of change	No gender elements (NGE)	✓
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas		
Partnerships (PAR)	Official cofinancing Regional organizations		
Private sector development (PSD)	Public sector goods and services essential for private sector development		

5. Poverty Targeting		**Location Impact**	
Project directly targets poverty	No	Regional	High

6. Risk Categorization: Complex

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** B **Indigenous Peoples:** C

8. Financing

Modality and Sources	**Amount ($ million)**
ADB	**575.00**
Sovereign Results Based Lending: Ordinary capital resources	575.00
Cofinancing	**25.00**
ASEAN Infrastructure Fund	25.00
Counterpart	**0.00**
None	0.00
Total	**600.00**

9. Effective Development Cooperation

Use of country procurement systems	Yes
Use of country public financial management systems	Yes

Source: Asian Development Bank

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan from the ordinary capital resources of the Asian Development Bank (ADB) (A loan); and (ii) a proposed loan funded through the ASEAN Infrastructure Fund (B loan), both to *Perusahaan Listrik Negara* (PLN), the State Electricity Corporation, to be guaranteed by the Republic of Indonesia, for the Electricity Grid Strengthening—Sumatra Program.[1]

2. As the first of a series of investment programs, the program adopts a programmatic approach, which may be replicated across other regions in the country. In total, the programs aim to improve the reliability and stability of the country's electricity transmission and distribution systems, and enable the expansion of power generation capacity as envisioned in PLN's Electricity Power Supply Business Plan (RUPTL), 2015–2024. The program also addresses a key priority of the government's National Medium-Term Development Plan (RPJMN), 2015–2019 to expand nationwide access to affordable and reliable supplies of electricity. It builds on ADB's extensive experience in Indonesia's power subsector.

II. THE PROGRAM

A. Strategic Context

3. Indonesia's gross domestic product growth averaged 5.8% during 2010–2014; per capita income was $3,492 in 2014. During 2015–2019, the government seeks to significantly accelerate economic growth to reduce income inequality and reduce poverty.[2] It has prioritized infrastructure development, especially for the power subsector, as a key measure that will help foster improved connectivity and promote inclusive growth to increase incomes and reduce poverty.

4. Expansion in the power subsector has not kept up with increased power demand and since 2010, demand has averaged about 8%. Generation capacity additions have been delayed, and underinvestment and infrastructure deficits extend to the transmission and distribution systems. Power system stability and reliability indexes indicate deteriorating trends, and Sumatra and Java recently experienced blackouts. All of this severely constrains the country's ability to provide for growth in industrial and commercial power demand. Indonesia continues to lag its regional peers in terms of access to electricity for its citizens. Increasing the electrification rate from the current 84% to nearly universal coverage will require substantial investment in transmission and distribution systems, along with associated generation capacity.

5. The government recognizes that business-as-usual will not lead to increased access to reliable and cost-effective supplies of electricity. PLN, a vertically integrated utility, dominates the country's power subsector. It owns and manages almost 75% of the total power generation; the remainder is owned and managed by independent power producers and captive generation. PLN owns and operates about 39,900 circuit-kilometers (ckm) of transmission lines, and 925,300 ckm of distribution lines. PLN, under the guidance of the government, has outlined an aggressive expansion program for power. Its latest power development plan (RUPTL, 2015–2024) estimates that an additional 70 gigawatts (GW) of new generation capacity is required. PLN and the government are to finance at least 21 GW of the new generation, and the

[1] The design and monitoring framework is in Appendix 1.
[2] In 2014, about 11.3% of the population was considered to be living below the poverty line.

associated transmission and distribution infrastructure; the private sector is expected to develop about 36 GW.[3] The expansion includes 60,000 ckm of new transmission lines and 304,000 ckm of distribution lines, along with grid rehabilitation and strengthening. The overall 2015–2024 expansion program is expected to cost $132 billion.

6. In the medium-term, during the first 5 years of the RUPTL, 2015–2024 and during the term of the RPJMN, 2015–2019, PLN plans to install 42 GW of the 70 GW to achieve an electrification ratio of 97.4%.[4] This medium-term program requires $83.1 billion, of which $43.0 billion is to be financed by independent power producers. PLN is to finance the balance of $40.1 billion, including $15.6 billion for generation and $24.5 billion for electricity grid rehabilitation and strengthening, and the development of new transmission and distribution infrastructure. PLN's current estimates put the financing gap at $30 billion for the 5-year program.

7. The government has taken several measures to strengthen PLN's ability to undertake this planned expansion, and to improve the investment climate for the private sector. In 2014, the government increased electricity tariffs, and in 2015 instituted tariffs based on cost recovery and automatic price adjustment for all but the poorest households. Further, in 2015 it is providing nearly $500 million in equity injections to PLN, and budgeted $1 billion for 2016. It is also seeking to move away from regulating PLN on a cost-plus-margin-based approach to one based on performance. This is intended to improve PLN's financial status and its ability to raise debt. The government recently passed regulations that will allow PLN to borrow directly from bilateral and multilateral agencies against a sovereign-backed guarantee.

B. Program Rationale

8. During 2015–2024, the nationwide electricity transmission and distribution systems will require an estimated $35 billion in public funding channeled through PLN. A significant portion of this investment will focus on reconductoring existing transmission lines to improve capacity and efficiency, expansion and reinforcement of medium-voltage and low-voltage networks, and expansion of customer connections. This expansion is best implemented using a programmatic approach involving standardized equipment and bulk procurement, wherein implementation plans and approaches used in one context can be replicated across regions. Along with investments in new high-voltage transmission lines, these investments will help transmit and distribute power from existing and new power plants. It thus complements the generation and long-distance transmission system investments carried out by PLN and other development partners.

9. PLN has selected the Sumatra region for the proposed investment program. This is well aligned with the government's vision for the region to make an increasingly larger contribution to the country's gross domestic product and become the next industrial center after Java. Sumatra has an electrification ratio of 84.5% and a population of 54 million, of which 9 million do not have access to electricity. PLN estimates that Sumatra requires at least $21 billion in investments during 2015–2019 for generation, transmission, and distribution. By 2019, PLN is targeting an additional 9 GW of generation, total installed generation capacity of 15 GW, and 2.85 million new customers connected. A focus on Sumatra sets the stage for achieving the objectives of the RUPTL, 2015–2024 and the RPJMN, 2015–2019.

[3] About 13.5 GW of the new generation is classified as "unallocated."
[4] This includes about 7 GW of capacity that is currently under construction.

10. ADB's results-based lending (RBL) is the most appropriate modality for supporting PLN's electricity grid strengthening program, starting with Sumatra. Strengthening the electricity grid involves many relatively small-scale, discrete activities and expenditures. This is best supported using the RBL approach, where the focus is not on inputs but on delivery of specific and measurable results through effective strategic planning, systems strengthening, optimal resource allocation, systematic implementation, and monitoring and evaluation (M&E). It also helps lower transaction costs for PLN, and helps ADB to rely on and strengthen PLN practices, systems, and institutional capacity. Moreover, the RBL approach encourages other development partners to join the program. The World Bank will provide financing of $500 million for Sumatra using its program-for-results modality, which is similar to the RBL. ADB and the World Bank have coordinated their due diligence assessments and have harmonized key disbursement-linked indicators (DLIs) to support a common results framework for the program.

11. The program is part of a larger medium-term package of ADB support for strengthening Indonesia's electricity grid. RBLs are planned for Java–Bali and the Eastern Indonesia regions in 2016–2019. Further, the program complements the broader policy reform support being provided by the policy-based loan series—Sustainable and Inclusive Energy Program—comprising three subprograms during 2015–2019, and strategic project investments in gas-fired power generation and renewable energy power plants being planned during the same period. The program is included in ADB's country operations business plan, 2015–2017 for Indonesia and aligned with the priorities outlined in the interim country partnership strategy, 2015.[5] Overall, ADB is seeking to provide nearly $4 billion in financing to Indonesia's energy sector during 2015–2019.

12. The program design incorporates lessons from ADB's 4 decades of experience in Indonesia's energy sector. It allows for larger, flexible, and programmatic financing for the sector with an emphasis on results. This approach provides ADB with the opportunity to collaborate with a large utility in a middle-income country, and use its financing leverage to improve the effectiveness and efficiency of PLN's entire electricity grid strengthening program, which will be rolled out during 2015–2024. The RBL approach will enhance the predictability and amount of sector financing, helping to attract additional financing from other development partners.

C. Program Scope

13. The program will support PLN's broader program for Sumatra and cover activities during 2015–2019. The scope of both programs is in Table 1.[6]

[5] ADB. 2015. *Country Operations Business Plan: Indonesia, 2015–2017.* Manila.

[6] The program will not cover high-value contracts, activities that would be classified as category A under ADB's Safeguard Policy Statement (2009), and subprojects requiring land acquisition.

Table 1: Program Scope

Item	PLN's Broader Program	Results-Based Lending Program
Outcome	Energy security enhanced	Adequacy and reliability of power supply achieved for Sumatra
Key outputs	Sumatra's transmission backbone system developed and the Sumatra and Java–Bali grids interconnected	1. Existing transmission system strengthened and expanded 2. Existing distribution system strengthened and expanded 3. Performance management and implementation improved
Expenditure size	$10,834.5 million[a]	$600 million
Geographic coverage	Sumatra	Sumatra
Executing agency	PLN	PLN
Implementation period	2015–2019	2015–2019

PLN = Perusahaan Listrik Negara (State Electricity Corporation).
[a] The program expenditure includes all costs related to capital expenditure, land acquisition, taxes and duties, and interest during construction, excluding generation.
Sources: Asian Development Bank and PLN.

D. Program Results

14. The RBL program's impact will be enhanced quality of life in Indonesian society, with the sustainable use of electricity acting as a key driver of increased economic activity. The outcome will be the achievement of an adequate and reliable power supply for Sumatra. The outputs are selected from PLN's key performance indicators. A total of three outcome and three output targets have been developed into annual DLIs; their achievement will set the progressive steps to meeting the overall program outcome target. Two financing of prior results process indicators focusing on PLN's procurement system and contract implementation strengthening are also included and linked to disbursement in the preparatory phases of the program. The results chain includes some targets articulating the RBL program's outcome, which are difficult to link to disbursements and therefore are included in the program action plan (PAP).[7] The program has three results areas.

(i) **Results area 1: Existing transmission system strengthened and expanded**. Output 1 will contribute to PLN's efforts to strengthen and expand the existing transmission system (DLI 4 and PAPs 1, 2, 5, and 7) including reconductoring of existing 150 kilovolt (kV) transmission lines, extension of 150 kV and 275 kV substations, installation of 150 kV and 275 kV reactors and capacitors, and expansion of outgoing 20 kV switchgears at existing 150 kV substations. This results area addresses PLN's efforts to improve system resiliency and regional reliability across Sumatra with a stronger transmission system.

(ii) **Results area 2: Existing distribution system strengthened and expanded.** Output 2 will contribute to PLN programs to expand and reinforce the medium-voltage (20 kV) and low-voltage distribution networks, install distribution transformers, install service connections and feeders, and install customer meter boxes and circuit breakers (DLIs 5 and 6, and PAPs 4, 6, and 7). This results area

[7] Program Action Plan (accessible from the list of linked documents in Appendix 2).

addresses the financing needs for distribution system expansion to achieve a 90% electrification ratio in Sumatra by 2019.

(iii) **Results area 3: Performance management and implementation improved**. Output 3 will focus on accelerating PLN staff training and certification programs (PAPs 2 and 3) and on strengthening contract implementation processes (PAP 4). This will contribute to PLN's overall efforts to increase staff productivity, improve human capital readiness, and strengthen institutional capacity (PAPs 10, 13, 17, and 25). This results area also addresses contract implementation issues.

15. All indicators are in the design and monitoring framework (Appendix 1) and the program results framework.[8] Disbursement allocation is summarized in Table 2. The largest DLI allocations are for DLIs 1, 4, and 5, based on their importance to achieving the program outcome and impact, and resource requirements in achieving these results.

Table 2: Disbursement-Linked Indicators

Indicator		Disbursement Allocated ($ million)	Share of Total ADB Financing (%)
Outcome			
DLI 1	Number of PLN customers in Sumatra increases by at least 3% each year	120.0	20.0
DLI 2	Residential energy sales grow by at least 3% each year	72.0	12.0
DLI 3	Number of medium-voltage feeder permanent interruptions per 100 kilometer maintained at 2014 baseline level or improved[a]	48.0	8.0
Outputs			
DLI 4	Cumulative length of 150 kV transmission lines reconductored	180.0	30.0
DLI 5	Additional number of distribution transformer units installed annually	120.0	20.0
DLI 6	Additional length of medium-voltage distribution lines installed annually[a]	60.0	10.0
	Total	**600.0**	**100.0**

DLI = disbursement-linked indicator, kV = kilovolt, PLN = Perusahaan Listrik Negara (State Electricity Corporation).
[a] PLN generally defines medium-voltage as 20 kV.
Sources: Asian Development Bank estimates, PLN's management information systems, and Electricity Power Supply Business Plan (RUPTL), 2015–2024.

16. The DLIs can be applied to allow PLN to proceed at an appropriate pace to achieve its 5-year program target. PLN is already monitoring and measuring the identified program indicators. The primary program beneficiaries will be the 1.8 million new customers.

E. Expenditure Framework and Financing Plan

17. **Program expenditures**. The broader program's projected expenditure for transmission and distribution investments in Sumatra during 2015–2019 is $10,834.5 million (Table 3).

[8] Program Results Framework (accessible from the list of linked documents in Appendix 2).

18. **Program financing.** PLN will finance at least $5,136.3 million (47.4%) of the total cost of the broader $10,834.5 million program. ADB will initially lend up to $600 million (5.5%). Other development partners and other financing sources will finance the balance including World Bank's $500 million for the same program.[9] PLN and the government may request ADB and other development partners to provide additional financing during the satisfactory implementation of subsequent program phases to bridge any financing gap through 2019. PLN has requested loans, to be guaranteed by the Republic of Indonesia, for $575 million from ADB's ordinary capital resources (A loan) and $25 million from the ASEAN Infrastructure Fund (B loan) for the program. The loan terms and conditions are in para. 33. The financing plan is in Table 4.

Table 3: Broader Program Expenditure Framework 2015–2019

Item	Amount ($ million)	Share of Total (%)
Civil works	1,840.6	17.0
Equipment	5,521.7	51.0
Taxes and duties	883.5	8.2
Land acquisition	43.2	0.4
Project management	73.6	0.7
Monitoring and supervision	368.1	3.4
Environmental management	36.8	0.3
Interest	595.1	5.5
Physical contingencies[a]	876.8	8.1
Price contingencies[b]	595.1	5.4
Total	**10,834.5**	**100.0**

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.
Source: State Electricity Corporation (PLN) Electricity Power Supply Business Plan (RUPTL), 2015–2024.

Table 4: Broader Program Financing Plan

Source	Amount ($ million)	Share of Total (%)
PLN	5,136.3	47.4
Asian Development Bank		
Ordinary capital resources	575.0	5.3
ASEAN Infrastructure Fund[a]	25.0	0.2
Others[b]	4,071.4	37.6
Unallocated	1,026.8	9.5
Total	**10,834.5**	**100.0**

ASEAN = Association of Southeast Asian Nations, PLN = Perusahaan Listrik Negara (State Electricity Corporation).
[a] Administered by the Asian Development Bank.
[b] The category includes $500 million from the World Bank, also for the Sumatra program, and may include additional loans from the Asian Development Bank and also the World Bank; a two-step loan with the Japan International Cooperation Agency; and funding from an export credit agency, bilateral partners, and the Government of Indonesia's national budget.
Sources: Asian Development Bank and PLN estimates.

[9] Development Coordination (accessible from the list of linked documents in Appendix 2).

19. **Disbursement arrangements.** Financing under the A loan and the B loan will be disbursed, subject to the achievement and verification of the agreed DLIs (Tables A3.1, A3.2, and A3.3, Appendix 3), on a pro rata basis of 95.8% for the A loan and 4.2% for the B loan. Up to 20% of each loan (total $120 million) will be made available for prior results. Financing of these prior results, which are to be achieved not more than 12 months before loan signing, will support PLN's initiation of actions required to achieve year 1 DLIs. From 2016 onward, PLN will submit a withdrawal application that reports on the achievement of the DLIs. Any amount not disbursed for an unmet DLI will be disbursed once it has been achieved.

20. 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 1, 2, 3, 4, 5, and 6, and financing of prior results 1; and for early or late achievement of DLIs. Verification mechanisms and protocols have been established depending on the nature of the DLIs (Appendix 3). Loan proceeds will be disbursed to PLN's general account with a commercial bank. Advance financing will also be allowed to address financing requirements. PLN will refund any advance financing amount outstanding if the DLIs are not achieved.[10]

F. Capacity Development and Program Action Plan

21. A PAP was developed to complement the DLI matrix (footnote 7). It includes key actions in specific technical areas, fiduciary management, M&E, and safeguards, to ensure that achievement of key program results strengthens PLN systems, thus making the program results more sustainable. Since PLN systems have been assessed as robust, the PAP will focus on implementation capacity, which will complement physical investments under the program and contribute to its overall efforts to increase staff productivity, improve human capital readiness, and strengthen institutional capacity.

G. Implementation Arrangements

22. The program will be implemented from December 2015 to December 2019. PLN will implement this program through its operating units responsible for the Sumatra electricity grid.

III. SUMMARY OF ASSESSMENTS

A. Program Technical Assessments

23. Several technical assessments have concluded that the power system in Indonesia needs to (i) improve overall system performance; (ii) increase private sector engagement; (iii) strengthen PLN's operating and financial performance; (iv) build institutional capacity; and (v) access funding directly from international financial institutions, commercial banks, and capital markets.

24. PLN's program to strengthen the Sumatra power system is well justified and operationally viable. The program will contribute to (i) improving quality and reliability by reducing average customer downtime; (ii) addressing annual peak load increase of 9%; (iii) rehabilitating and building at least 19,300 ckm of transmission and 37,500 ckm of new distribution lines; (iv) increasing energy sales to 47,000 gigawatt-hours (GWh); and (v) reducing

[10] 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%.

distribution losses from 11.94% in 2014 to less than 10.00% by 2019. These targets underpin the program results areas, key actions to be taken, and performance indicators for the sector overall and the proposed program in particular.

25. The program will also generate incremental benefits accrued from the additional electricity supply due to the strengthened and expanded transmission and distribution capacity. During 2015–2019, a 9 GW increase in grid capacity will deliver incremental energy sales of at least 4,300 GWh within 4 years of start-up of operations. The economic analysis yields an economic internal rate of return of 15.7%, confirming the program's economic viability.[11]

B. Program System Assessments

26. **Monitoring and evaluation system.** PLN's corporate M&E system is handled and managed by its Corporate Performance Control Unit using its Management Reporting Information System, which will also verify the DLIs.[12] The Management Reporting Information System contains data on critical dimensions such as performance, electricity generation, energy sales, transmission and distribution, and projects and construction. It provides accurate real-time online data. To implement the M&E requirements, each department operates information technology applications that are developed together with PLN's Information Technology Division. These applications generate data and provide information on current activities and for the M&E process for PLN management and board of directors.[13] A monthly summary report provides comprehensive data in real time on customer service quality, project performance, corporate performance, and electricity conditions. If needed, independent monitoring by ADB can supplement this information.

27. **Fiduciary systems.** The program will use PLN's fiduciary systems for financial management, procurement, and anticorruption. These systems were assessed to determine their ability to manage fiduciary risks and provide assurance that RBL program funds will be used for the intended purposes, with due consideration for economy and efficiency.[14] The assessments found that improvements are needed in planning and budgeting, and that further computerization is required for accounting and financial reporting. This will be covered by activities under the PAP.

28. The procurement assessment covered the procurement profile, procurement regulations, rules, procedures and arrangements, agency organizational capacity and arrangements, and procurement system performance.[15] The program will rely on PLN procurement systems in accordance with ADB's RBL policy.[16] The assessment notes that the overall procurement framework, as expressed in PLN guidelines for procurement, is robust as it follows many best practices used by utility companies around the world. PLN will use a variety of procurement methods, which include open competitive bidding, framework contracts, and direct contracting through open book.[17] The procurement of large transformers is excluded from the RBL as contracts average more than $30 million, the limit for goods contracts in ADB's RBL policy. The

[11] Program Soundness Assessment (accessible from the list of linked documents in Appendix 2).
[12] Program Monitoring and Evaluation System Assessment (accessible from the list of linked documents in Appendix 2).
[13] State Electricity Corporation (PLN). 2013. *Annual Report*. Jakarta.
[14] Program Fiduciary Systems Assessment (accessible from the list of linked documents in Appendix 2).
[15] The in-depth procurement assessment of PLN was guided by the Procurement Assessment of the State Electricity Corporation (PLN) (accessible from the list of linked documents in Appendix 2).
[16] ADB. 2013. *Piloting Results-Based Lending for Programs.* Manila.
[17] PLN Board of Directors' Decree Number: 0620.K/DIR/2013 on General Guidelines for Procurement. Jakarta.

assessment identifies two key issues for ADB to consider when implementing an RBL using PLN's procurement system: local content requirements and direct contracting through open book. Both are integral parts of PLN's efforts to deliver value-for-money in the procurement process. A procurement monitoring framework to strengthen PLN's procurement system has been developed for this program.

29. The Guidelines to Prevent or Mitigate Fraud, Corruption, and Other Prohibited Activities in Results-Based Lending for Programs were explained to and discussed with PLN (footnote 16).

30. **Safeguard systems.** A program safeguard system assessment confirms safeguard categorizations of B for environment, B for involuntary resettlement, and C for indigenous peoples.[18] Potential construction-related impacts include disturbance of vegetation, soil erosion, sedimentation, noise, dust, vibration, and generation of waste. Potential impacts during operation include trimming of trees within the right-of-way of transmission and distribution lines. The program impacts are site-specific, and can be mitigated and/or managed by PLN's current practices. The program's activities that relate to extension of substations, installation of reactors and capacitors, and expansion of switchgears will take place in the existing substations' premises owned and managed by PLN. They will not require any involuntary resettlement. Expansion of the distribution network (including installation of distribution transformers) will require (i) use of no more than 0.2 square meters of land for installation of concrete poles, and (ii) possible removal of nonland assets (primarily trees) for stringing of conductors. Although Sumatra is inhabited by a variety of ethnic groups, the program will not be in areas where indigenous peoples are present. Gaps identified by the assessment include weak management of industrial waste and the procedure for negotiated settlements or voluntary donation, which are addressed in the PAP.

C. Integrated Risk Assessment and Mitigating Measures

31. Major risks and mitigating measures are summarized in Table 5.[19] The overall benefits and impacts are expected to outweigh the risks and costs.

Table 5: Summary of Integrated Risk Assessment and Mitigating Measures

Risks	Ratings	Key Mitigating Measures
Results. Inadequate institutional capacity could be a barrier to the program's progress since few PLN projects are completed on time.	Substantial	The program will monitor this risk with an indicator on the timely completion of implementation of distribution system contracts. Development partners will jointly monitor progress for corrective actions and consider technical assistance if required.
Expenditure and financing. PLN may not be able to meet its own funding targets.	Substantial	PLN's Finance and Budgeting Division and Treasury Division track data for funding targets and investments. SPKK can generate special condition reports, if needed, to report to the PLN Board of Directors and request development partner support to provide additional program financing.
Fiduciary. Market capacity and supply risk issues may cause price fluctuations.	Substantial	ADB and PLN will develop a procurement monitoring and spending profile for the program, to identify lack of competition or above normal contract prices due to market failure.

[18] Program Safeguard Systems Assessment (accessible from the list of linked documents in Appendix 2).
[19] Integrated Risk Assessment and Mitigating Measures (accessible from the list of linked documents in Appendix 2).

Risks	Ratings	Key Mitigating Measures
Safeguards. Poor control of oil spills from operating transformers at substations and leaking transformers at temporary storage sites may cause land pollution.	Moderate	PLN will ensure consistent compliance with the government's environmental requirements and improve the current system of waste management and oil spill control measures.
Fraud and corruption. Despite PLN initiatives to curb corruption and strengthen internal controls, risks persist.	Substantial	Upgrade the capacity of the internal auditor and use the procurement monitoring framework to detect red flags and suspicious patterns in contract awards.
Operating environment. Sumatra is part of a disaster-prone area. Earthquakes and/or disasters could have a negative impact on the program progress and the energy infrastructure.	Moderate	Earthquake safety standards and disaster management procedures will be discussed with PLN and improved if necessary before the infrastructure work begins for the program.
Overall program risk	**Substantial**	

ADB = Asian Development Bank; EPC = engineering, procurement, and construction; PLN = Perusahaan Listrik Negara (State Electricity Corporation); SPKK = Satuan Pengendalian Kinerja Korporat (Corporate Performance Control Unit).
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: Asian Development Bank.

IV. ASSURANCES

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

V. RECOMMENDATION

33. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

(i) the A loan of $575,000,000 to Perusahaan Listrik Negara to be guaranteed by the Republic of Indonesia for the Electricity Grid Strengthening—Sumatra Program from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 20 years, including a grace period of 5 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and guarantee agreements presented to the Board; and

(ii) the B loan of $25,000,000 to Perusahaan Listrik Negara to be guaranteed by the Republic of Indonesia for the Electricity Grid Strengthening—Sumatra Program to be funded through the participation of the ASEAN Infrastructure Fund, on terms and conditions as are substantially in accordance with those set forth in the draft loan and guarantee agreements presented to the Board.

Takehiko Nakao
President

10 November 2015

DESIGN AND MONITORING FRAMEWORK

Impact the Results-Based Program is Aligned with The quality of life in Indonesian society will be enhanced by the sustainable use of electricity as a key driver of increased economic activity. Electricity Power Supply Business Plan (RUPTL), 2015–2024.			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting Mechanisms**	**Risks**
Outcome Adequacy and reliability of power supply achieved for Sumatra	a. Number of PLN customers in Sumatra increases by at least 3% each year to reach at least 12.96 million or more customers by 2019 (2014 baseline: 11.18 million customers)[a] (DLI)	a. SPKK reports	Inadequate institutional capacity could be a barrier to the program's progress since few PLN projects are completed on time PLN may not be able to meet its own funding targets Market capacity and supply risk issues may cause price fluctuations
	b. Residential energy sales grow by at least 3% each year to reach 18,734 GWh by 2019 (2014 baseline: 15,850 GWh) (DLI)	b. SPKK reports	
	c. Number of medium-voltage feeder permanent interruptions/100 km maintained at 2014 baseline level or improved (2014 baseline: 21.22 interruptions/100 km)[b] (DLI)	c. SPKK reports	
	d. Technical complaints from PLN customers to Sumatra call center reduced to less than 52 complaints/1,000 customers/month by 2019 (2014 baseline: 61 complaints/1,000 customers/month)	d. Sumatra call center records from PLN database	
Outputs			
1. Existing transmission system strengthened and expanded	1a. Cumulative length of 150 kV transmission lines reconductored is at least 1,743 km by 2019 (2014 baseline: 1,142 ckm) (DLI)	1a. SPKK reports	
2. Existing distribution system strengthened and expanded	2a. Additional number of distribution transformer units installed is at least 12,350 by 2019 (2014 baseline: 80,130 units) (DLI)	2a. SPKK reports	
	2b. Additional length of medium-voltage distribution lines installed is at least 8.035 ckm by 2019 (2014 baseline: 92,716 km)[b] (DLI)	2b. SPKK reports	
3. Performance management and implementation improved	3a. Percentage of PLN staff who are competency certified by PLN increased to at least 95% or more by 2019 (2014 baseline: 87.5%)	3a. PLN training reports	
	3b. Timely completion of implementation of distribution system contracts increased to more than 24% by 2019 (2014 baseline: <10%)	3b. PLN reports	
4. Other results (financing for prior results)	4a. At least 25% of the contracts for strengthening and expanding the transmission system of the Sumatra grid are made effective in 2015	4a. PLN reports	
	4b. Procurement monitoring system for the program implemented[c]	4b. PLN reports	

Key Program Actions

1. Existing transmission system strengthened and expanded
1.1 Reconductoring of existing 150 kV transmission lines
1.2 Extension of 150 kV and 275 kV substations
1.3 Installation of 150 kV and 275 kV reactors and capacitors
1.4 Expansion of outgoing 20 kV switchgears at existing 150 kV substations
2. Existing distribution system strengthened and expanded
2.1 Expansion and reinforcement of the medium-voltage and low-voltage distribution network[b]
2.2 Installation of distribution transformers
2.3 Installation of service connections and feeders
2.4 Installation of customer meter boxes and circuit breakers
3. Performance management and implementation improved
3.1 Acceleration of PLN staff training and certification programs
3.2 Analysis and resolution of obstacles in contract implementation processes
3.3 Procurement monitoring framework developed and implemented

Financing Plan

Total program financing: $600 million
ADB: $575.0 million OCR (A loan) and $25.0 million ASEAN Infrastructure Fund (B loan)

Assumptions for partner financing

Outputs necessary to reach outcomes not administered by ADB include those largely financed by PLN and those financed by the World Bank, initially a loan of $500 million to PLN. The assumption is that PLN has sufficient resources as planned for these outputs to achieve its goals for Sumatra and that financing is available as and when required during implementation.

ADB = Asian Development Bank, ASEAN = Association of Southeast Asian Nations, ckm = circuit-kilometer, GWh = gigawatt hour, km = kilometer, kV = kilovolt, OCR = ordinary capital resources, PLN = Perusahaan Listrik Negara (State Electricity Corporation), SPKK = Satuan Pengendalian Kinerja Korporat (Corporate Performance Control Unit).

[a] Of the total 11.18 million PLN customers in Sumatra in 2014, the number of households is 10.36 million and the remainder are commercial and industrial customers. Projecting at the growth rate of 3% a year, the 2019 target for total number of PLN customers is 12.96 million, of which at least 12.01 million will be households.

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

[c] To achieve the financing of prior results, the following have to be achieved: (i) PLN's procurement performance indicators agreed with ADB are in line with PLN guidelines; (ii) procurement baseline data for the first half of 2015 are collected and made available to ADB; and (iii) procurement performance measurement targets for 2016–2019 are agreed with ADB.

Sources: Asian Development Bank estimates, PLN's management information systems, and Electricity Power Supply Business Plan (RUPTL), 2015–2024.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=49080-001-3

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

Supplementary Documents

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

DISBURSEMENT-LINKED INDICATORS, VERIFICATION PROTOCOLS, AND DISBURSEMENT SCHEDULE

Table A3.1: Disbursement-Linked Indicators

DLI	Baseline and Year	Prior Results (2015)	2016	2017	2018	2019
Outcome: Adequacy and reliability of power supply achieved for Sumatra						
DLI 1: Number of PLN customers in Sumatra increase by at least 3% each year	11.18 million customers in Sumatra (2014)		At least 11.86 million customers connected by end of 2016	At least 12.21 million customers connected by end of 2017	At least 12.58 million customers connected by end of 2018	At least 12.96 million customers connected by end of 2019
DLI 2: Residential energy sales grow by at least 3% each year from the preceding year	15,850 GWh sold to residential customers (2014)		At least 16,848 GWh or more of energy sales to residential customers in 2016	At least 17,421 GWh or more of energy sales to residential customers in 2017	At least 18,048 GWh or more of energy sales to residential customers in 2018	At least 18,734 GWh or more of energy sales to residential customers in 2019
DLI 3: Number of medium-voltage feeder permanent interruptions per 100 km maintained at 2014 baseline level or improved[a]	21.22 interruptions/100 km (2014)		Medium-voltage feeder permanent interruptions reduced to less than 21.12 interruptions/100 km by end of 2016	Medium-voltage feeder permanent interruptions reduced to less than 21.08 interruptions/ 100 km by end of 2017	Medium-voltage feeder permanent interruptions reduced to less than 21.04 interruptions/100 km by end of 2018	Medium-voltage feeder permanent interruptions reduced to less than 21.02 interruptions/ 100 km by end of 2019
Outputs: (i) Existing transmission system strengthened and expanded; (ii) existing distribution system strengthened and expanded; and (iii) performance management and implementation improved						
DLI 4: Cumulative length of 150 kV transmission lines reconductored	Cumulative length of 1,142 ckm reconductored (2014)	At least 25% of the contracts for strengthening and expansion of the transmission system of the Sumatra grid are made effective in 2015	Cumulative length of 1,242 ckm or more of 150 kV transmission lines reconductored by end of 2016	Cumulative length of 1,367 ckm or more of 150 kV transmission lines reconductored by end of 2017	Cumulative length of 1,543 ckm or more of 150 kV transmission lines reconductored by end of 2018	Cumulative length of 1,743 ckm or more of 150 kV transmission lines reconductored by end of 2019
DLI 5: Additional number of distribution transformer units installed annually	A total of 80,130 distribution transformer units installed (2014)	Procurement monitoring system for the program implemented, whereby: (i) PLN's procurement performance indicators agreed with ADB in line with PLN guidelines, (ii) procurement baseline data for the first half of 2015 collected and made available to ADB, and (iii) procurement performance measurement targets for 2016-2019 agreed with ADB	At least an additional 2,582 or more of distribution transformer units installed in 2016	At least an additional 2,642 or more of distribution transformer units installed in 2017	At least an additional 3,501 or more of distribution transformer units installed in 2018	At least an additional 3,625 or more of distribution transformer units installed in 2019

DLI	Baseline and Year	Prior Results (2015)	2016	2017	2018	2019
DLI 6: Additional length of medium-voltage distribution lines installed annually[a]	A total of 92,716 ckm installed (2014)		At least an additional 1,860 ckm or more of medium-voltage distribution lines installed in 2016	At least an additional 2,010 ckm or more of medium-voltage distribution lines installed in 2017	At least an additional 2,044 ckm or more of medium-voltage distribution lines installed in 2018	At least an additional 2,121 ckm or more of medium-voltage distribution lines installed in 2019

ADB = Asian Development Bank, ckm = circuit-kilometer, DLI = disbursement-linked indicator, GWh = gigawatt-hour, km = kilometer, kV = kilovolt, PLN = Perusahaan Listrik Negara (State Electricity Corporation).

[a] PLN generally defines medium voltage as 20 kV.

Sources: Asian Development Bank estimates, PLN management information systems, and Electricity Power Supply Business Plan (RUPTL), 2015–2024.

Table A3.2: Verification Protocols

Disbursement–Linked Indicators	Definition and Description of Achievement	Information Source and Frequency	Verification Agency and Procedure
Outcome			
DLI 1: Number of PLN customers in Sumatra increase by at least 3% each year (2014 baseline: 11.18 million customers)	**Definition** of DLI 1 is the number of households served by PLN in Sumatra (not including customers of independent power producers or private utilities), as recorded in PLN distribution systems for a given year. **Conditions for disbursement** are met if the number of PLN customers each year is at least 3% or more than the preceding year. Each year, the target values for the subsequent year should be adjusted to equal at least a 3% increase, since estimated targets in the program results framework are simply projections.[a] **Partial disbursement.** The DLI is scalable and partial disbursement is allowed: if the minimum threshold is not met, then disbursement can be proportional to the increase made (e.g., 2% increase in customers means 67% disbursement for that year). 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 a year late, as long as the achievement is during the program's duration.	PLN databases and annual statistics. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.
DLI 2: Residential energy sales grow by at least 3% each year from the preceding year (2014 baseline: 15,850 GWh)	**Definition** of DLI 2 is energy sales by PLN in GWh for the whole of Sumatra which is the electricity sold to residential customers by PLN. **Conditions for disbursement** are met if, starting from the actual residential energy sales in 2014 (15,850 GWh), the sales each year is at least 3% more than the preceding year. Each year, the target values for the subsequent year should be adjusted to equal a 3% increase, since estimated targets in the program results framework (footnote a) are simply projections. **Partial disbursement.** The DLI is scalable and partial disbursement is allowed if the minimum threshold of 3% is not met, then disbursement can be proportional to the increase made. 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 a year late as long as the achievement is during the program's duration.	PLN databases and annual statistics. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.

Disbursement–Linked Indicators	Definition and Description of Achievement	Information Source and Frequency	Verification Agency and Procedure
DLI 3: Number of medium-voltage feeder permanent interruptions/100 km maintained at 2014 baseline level or improved (2014 baseline: 21.22 interruptions/100 km)[b]	**Definition.** This is defined as the number of 20 kV feeder permanent interruptions/100 km of lines (permanent are defined by PLN as those longer than 5 minutes and excluding those related to generation and transmission faults). **Conditions for disbursement** are met, if starting from a 2014 baseline of 21.22 interruptions/100 km, the yearly permanent interruptions is maintained at 2014 baseline level or improved each year to a value below that specified in the program results framework (footnote a). **Partial disbursement.** The DLI is scalable and partial disbursement is allowed: if the required reduction target is not met for that year, then disbursement can be proportional to the reduction achieved. 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 a year late, as long as the achievement is during the program's duration.	The number of permanent interruptions on each feeder is available from the trip counter and is recorded at the substations. These figures can be retrieved and computed along with feeder lengths by SPKK.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.
Outputs			
DLI 4: Cumulative length of 150 kV transmission lines reconductored (2014 baseline: Cumulative length reconductored 1,142 km)	**Definition.** Transmission lines are the 150 kV lines and above transferring electricity to electrical power substations located near demand centers. RBL supports 150 kV reconductoring, which means replacing the existing conventional conductors (aluminum conductor steel reinforced) with high-temperature low sag conductors in order to have a greater range of capacity and reduced line losses. Circuit-kilometer means the kilometers of revenue-producing circuits in service, determined by measuring the length in terms of kilometers, of the actual path followed by the transmission medium and multiplied by the number of circuits on each path. **Conditions for disbursement** are met if, starting from a baseline of 1,142 km reconductored by 2014, the reconductoring of PLN transmission lines meet or exceed the given target in cumulative kilometers specified in the program results framework (footnote a). **Partial disbursement.** The DLI is scalable and partial disbursement is allowed. If the target is not met for that year, then disbursement can be proportional to the increase achieved in reconductored	PLN databases and annual statistics. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.

Disbursement–Linked Indicators	Definition and Description of Achievement	Information Source and Frequency	Verification Agency and Procedure
	transmission lines. 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 a year late, as long as the achievement is during the program's duration.		
DLI 5: Additional number of distribution transformer units installed annually (2014 baseline: 80,130 distribution transformer units)	**Definition.** Distribution transformer means transformers in PLN's medium-voltage (20 kV) and low-voltage distribution network in Sumatra. The increase in the number of additional transformers units installed from a 2014 baseline of 80,130 units. **Conditions for disbursement** are met, if starting from a 2014 baseline of 80,130 units, the number of distribution transformer installed increases annually to equal or surpass the additional number of units specified in the program results framework (footnote a) for each year. **Partial disbursement.** The DLI is scalable and partial disbursement is allowed. If the required number of additional units is not met for that year, then disbursement can be proportional to the number of units achieved against the set target. 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 a year late, as long as the achievement is during the program's duration.	PLN databases and annual statistics. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.
DLI 6: Additional length of medium-voltage distribution lines installed[b] (2014 baseline: 92,716 ckm)	**Definition.** Medium-voltage lines are the 20 kV lines transferring electricity from electrical substations to distribution transformers. **Conditions for disbursement** are met if, starting from a baseline of 92,716 ckm in 2014, the additional length of PLN's medium-voltage distribution lines meets or exceeds the given target in ckm specified in the program results framework (footnote a). **Partial disbursement.** The DLI is scalable and partial disbursement is allowed: if the target is not met for that year, then disbursement can be proportional to the increase achieved in the length of ckm of medium-voltage distribution lines added to the grid. Disbursements are allowed for early or late achievement of the DLI. This means that the planned disbursement amount for a given	PLN databases and annual statistics. Frequency for reporting will be annual. However, monitoring may be as frequent as PLN wishes.	Focal unit in PLN prepares an attestation that the DLI is met and attaches the relevant report.

Disbursement–Linked Indicators	Definition and Description of Achievement	Information Source and Frequency	Verification Agency and Procedure
	year can be released when the set target is fully achieved even if the achievement is a year late, as long as the achievement is during the program's duration.		
Financing for Prior Results			
FPR 1: At least 25% of the contracts for the strengthening and expansion of the transmission system of the Sumatra grid are made effective in 2015	**Definition.** This involves contracts related to transmission system strengthening, which may involve reconductoring, new lines, and substation extensions and/or upgrades. **Conditions for disbursement.** Disbursement can take place as soon as PLN can show ADB that the agreed percentage of contracts became effective in 2015. **Partial disbursement.** The FPR is scalable and partial disbursement is allowed. If the agreed percentage of contracts has not yet become effective in 2015, then disbursement can be proportional to the progress achieved toward the agreed percentage. The rest of the FPR can be disbursed as soon as the agreed percentage is reached (this might be, for example, in the first part of 2016).	PLN focal unit	Focal unit in PLN prepares an attestation that the DLI is met.
FPR 2: Procurement monitoring system for the program implemented, whereby: (i) PLN procurement performance indicators are agreed with ADB in line with PLN guidelines, (ii) procurement baseline data for the first half of 2015 collected and made available to ADB, and (iii) procurement performance measurement targets for 2016–2019 are agreed on with ADB.	**Definition.** The implementation of the procurement monitoring system means that three conditions are met: (i) PLN's procurement performance indicators are agreed with ADB in line with PLN guidelines, (ii) procurement baseline data for the first half of 2015 collected and made available to ADB, and (iii) procurement performance measurement targets for 2016–2019 are agreed with ADB. **Conditions for disbursement.** Disbursement can take place as soon as the above three conditions are met. **Partial disbursement.** It is not allowed and the indicator is not scalable.	PLN focal unit	Focal unit in PLN prepares an attestation that the DLI is met.

ADB = Asian Development Bank, ckm = circuit-kilometer, DLI = disbursement–linked indicator, FPR = financing for prior results, km = kilometer, kV = kilovolt, PLN = Perusahaan Listrik Negara (State Electricity Corporation), SPKK = Satuan Pengendalian Kinerja Korporat (Corporate Performance Control Unit).

[a] Program Results Framework (accessible from the list of linked documents in Appendix 2).

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

Sources: Asian Development Bank and PLN estimates, PLN management information systems, and Electricity Power Supply Business Plan (RUPTL), 2015–2014.

Table A3.3: Disbursement Schedule

($ million)

Disbursement-Linked Indicator	Total ADB Financing Allocation	Share of ADB Financing (%)	Financing for Prior Results	2015	2016	2017	2018	2019
Outcome								
DLI 1: Number of PLN customers in Sumatra increase by at least 3% each year	120.0	20.0	0	0	30.0	30.0	30.0	30.0
DLI 2: Residential energy sales grow by at least 3% each year from the preceding year	72.0	12.0	0	0	18.0	18.0	18.0	18.0
DLI 3: Number of medium-voltage feeder permanent interruptions/100 km maintained at 2014 baseline level or improved[a]	48.0	8.0	0	0	12.0	12.0	12.0	12.0
Outputs								
DLI 4: Cumulative length of 150 kV transmission lines reconductored	180.0	30.0	60.0	60.0	30.0	30.0	30.0	30.0
DLI 5: Additional number of distribution transformer units installed annually	120.0	20.0	60.0	60.0	15.0	15.0	15.0	15.0
DLI 6: Additional length of medium-voltage distribution lines installed annually[a]	60.0	10.0	0	0	15.0	15.0	15.0	15.0
Total	**600.0**	**100.0**	**120.0**	**120.0**	**120.0**	**120.0**	**120.0**	**120.0**

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

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

Source: Asian Development Bank estimates.