PROGRAM SOUNDNESS ASSESSMENT

A. Program Description

1. The proposed results-based Electricity Grid Strengthening—Sumatra Program with funding from the ordinary capital resources ($575 million) of the Asian Development Bank (ADB) and the ASEAN Infrastructure Fund ($25 million) will support the State Electricity Corporation (PLN) in implementing its Sumatra power development program. The program is an important component of PLN's 10-year Electricity Power Supply Business Plan (RUPTL), 2015–2024 covering the entire country.

2. The program will also support the Government of Indonesia's National Medium-Term Development Plan (RPJMN), 2015–2019 to bolster domestic energy security. A critical prerequisite for Indonesia to continue on its growth trajectory will be its ability to develop and manage sustainable energy sources. Domestic demand for energy is expected to increase by around 8%–10% per year. Electricity consumption is expected to grow from 189 terawatt-hours (TWh) in 2013 to 385 TWh in 2022, representing a growth rate of 8.4%.[1] Following the Electricity Power Supply Business Plan (RUPTL), 2015–2024, the government is aiming to expand power generation capacity by an additional 42 gigawatts (GW) from 2015 to 2019 to bolster economic growth and alleviate existing grid constraints.

3. The overall program expenditure during 2015–2019 is estimated at $10.834 billion, of which $7.362 billion is the capital expenditure investment cost. ADB will provide $600 million to support selected outcomes within the PLN program (Table).

Program Scope

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

PLN = Perusahaan Listrik Negara (State Electricity Corporation), RBL = results-based lending.
[a] Financed by the Asian Development Bank (ADB) and the ASEAN Infrastructure Fund (AIF).
[b] The program expenditure includes capital expenditure costs, costs related to land acquisition, taxes and duties, and interest during construction.
[c] The ADB financed program does not involve land acquisition.
Sources: Asian Development Bank and PLN staff estimates.

4. The program covers activities during 2015–2019 related to (i) reconductoring existing 150 kilovolt (kV) transmission lines; (ii) extending 150 kV and 275 kV substations; (iii) installing 150 kV and 275 kV reactors and capacitors; (iv) expanding outgoing 20 kV switchgear at

[1] State Electricity Corporation (PLN). 2013. Electricity Power Supply Business Plan (RUPTL), 2013–2022. Jakarta.

existing 150 kV substations; and (v) expanding and reinforcing the medium-voltage (20 kV) and low-voltage distribution network.

5. All work is located within the eight regions of Sumatra.[2] The scope of work for the transmission, substation, and distribution components is shown in the Program Scope of Work.[3]

B. Program Soundness

1. Relevance and Justification

6. **Justification.** Most indications are that the performance of Indonesia's energy sector can be improved. Energy security concerns have been increasing. The national electrification ratio of 84%, as of end 2014, is lower than of its Southeast Asia neighbours.[4] The electricity supply in Indonesia's regions is also unevenly distributed. While Sumatra accounts for about 25% of the country's gross domestic product (GDP), it recently experienced power shortages as PLN struggles to meet the demand for increased electricity. Power shortages in North Sumatra have averaged a deficit of 250 megawatts (MW).

7. The government is keen to boost Sumatra's productivity by strengthening its power grid and connecting it to the Java–Bali grid by 2020. A proposed 500 kV backbone transmission line in the eastern corridor of Sumatra will interconnect large-scale power plants with the load centers. It will join the proposed high-voltage direct current undersea cable between Sumatra and Java. The 2014 electrification rate in Sumatra was 84.5%; the government would like to achieve 90% by 2019.

8. Government efforts to boost economic growth in Sumatra, based on industrial development, provide an opportunity for a program-based and results-oriented approach to provide quality and reliable electricity supply. Thus, the proposed program aims to support PLN and the government's overall broader national blueprint to undertake the necessary strengthening and improvement of Sumatra's power grid, by adding an additional 9 GW of capacity by 2019, connecting it to Java and Peninsular Malaysia by 2020, and expanding access to electricity for the Sumatran population. The program will strengthen the power grid of Sumatra with a focus on results.

9. **Technical design.** PLN's technical experts prepared the technical design for the proposed program transmission and substation high-voltage works, generally in accordance with internationally accepted good practice.

10. The 150 kV transmission line upgrades utilize high-temperature low-sag (HTLS) conductors, which provide increased capacity and reduced line losses compared with conventional conductors. The proposed replacement HTLS conductor has the same diameter and weight as the existing conventional aluminium conductor steel reinforced (ACSR) conductor and utilizes the existing insulators, line hardware, and steel towers—without the need for new rights-of-way or land acquisition. According to independent tests reported by the Electric Power Research Institute, most varieties of HTLS conductors cost two to six times as much as

[2] The regions are Aceh, Bangka Belitung, Bengkulu, Jambi, Lampung, North Sumatra, P3B Sumatra, Riau and Riau Islands, South Sumatra, and West Sumatra.

[3] Program Scope of Work (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).

[4] About 42 million people still lack access to electricity in Indonesia. Electrification ratios are 97% in Malaysia, 100% in Singapore, 96% in Thailand, and 98% in Viet Nam.

conventional conductors, but in contrast can carry two to three times more electricity than conventional conductors of the same diameter and weight—thereby increasing the load capacity of the transmission line.[5]

11. The scope of work in the 275/150 kV and 150/20 kV substations provides for an increase in transformer capacity (275/150 kV interbus and 150/20 kV power transformers) and additional 20 kV feeders to supply the surrounding areas. Although PLN will purchase the power transformers directly using its own procurement procedures, the associated major equipment will be purchased through international competitive bidding procedures in accordance with ADB guidelines. This includes high-voltage circuit breakers, voltage and current transformers, isolators, and related supervisory control and data acquisition equipment for local and remote operation of the substation. Generally all extension work is contained within the existing boundaries of the substation, without the need for additional land acquisition. The additional transformer capacity will provide for the predicted growth in peak load and energy sales. Energy sales in Sumatra are expected to exceed 41.5 TWh in 2019 compared with 27.6 TWh in 2014. The 275 kV and 150 kV switchyard designs incorporate a breaker-and-a-half scheme to allow flexible operation and ensure optimum reliability (major equipment can be maintained without load interruption) plus include n-1 level of redundancy. Additional 275 kV and 150 kV capacitors are required to control the system power factor to acceptable limits.[6] This equipment will be installed outdoors in existing switchyards. The 20 kV switchgear extensions are all within existing substations and require adding new indoor 20 kV metal-clad switchgear to existing switchboards. The outgoing 20 kV cables from this switchgear exiting the substation will be connected to the medium-voltage distribution system.

12. The 20 kV and low-voltage component of the work will extend the existing distribution system to connect additional customers currently without access to electricity. These extensions are designed in accordance with PLN's distribution construction standards under the direction of the regional office (*wilayah)*. Generally the overhead distribution lines follow the route of public roads with the poles installed along the road reserves and not on private land. The main plant includes concrete poles, 20 kV insulators and three-phase conductors, overhead mounted 20 kV/low-voltage distribution transformers of various ratings, and low-voltage aerial-bundled conductors with special insulated connectors for joining service conductors. The aerial-bundled conductor has an efficient design, is easy to erect, and minimizes any illegal connections and associated nontechnical losses. The overall distribution design is simple and straightforward, and generally follows international practice. Overall distribution losses can be expected to decrease from 11.94% in 2014 to less than 10.00% by 2019. Connections to individual customers include an insulated single-phase, low-voltage service from the nearest pole, plus a tariff meter (either pre-pay or billed) and a miniature circuit breaker for protection and isolation.

13. The proposed works will improve the capacity of the transmission system and substations in Sumatra and extend the distribution system using modern reliable materials. Overall, this is expected to reduce the number of faults attributed to poor quality construction, old equipment, and substandard voltage. PLN already monitors the system average interruption duration index (SAIDI) and system average interruption frequency index (SAIFI), international indicators used to measure the duration and frequency of faults. In Sumatra, the SAIDI and SAIFI are expected to decrease by 2019 as the transmission and distribution grids become

[5] B. Clairmont. 2008. High-Temperature Low-Sag Conductors. Transmission Research Programme Colloquium, Electric Power Research Institute. Sacramento, California. 11 September.

[6] n-1 criterion is defined when one of the transmission lines goes out of service, the remaining lines must be able to carry both the load they were carrying before the event, plus the load carried by the line that is out of service.

stronger. Currently PLN is working to update its information systems and the respective SAIDI and SAIFI computational algorithms to obtain more reliable measurements of these indexes going forward. Hence they are not included as disbursement-linked indicators in this phase of the program.

14. PLN provides an efficient contact center service (available on a 24-hour basis, 7 days/week) for its customers throughout Indonesia. Customers can dial #123 to connect to the nearest interconnected contact center and discuss billing, commercial, or technical issues. All calls are logged to record the duration and type of query, with automated statistics sent every 6 hours to PLN's data collection center in Jakarta. The Medan contact center, with 91 staff working in four shifts, receives an average of 90,000 calls per month. It has an interface with the distribution control center in order to be kept aware of any ongoing or scheduled outages. The program will improve the quality of supply to customers in Sumatra. As a result, technical complaints from PLN customers to the Sumatra call center are expected to decrease to less than 52 complaints/1,000 customers/month by 2019.

15. In summary, PLN's plan to develop the Sumatra power system is strongly justified and operationally viable, and can be expected to (i) improve quality and reliability, (ii) address peak load requirements, (iii) effectively invest in new transmission and distribution networks to meet growing demand, (iv) increase energy sales, and (v) improve customer service delivery. These conclusions underpin the results areas, key actions to be taken, and performance indicators for the sector overall and this program in particular.

16. **Poverty reduction.** Economic growth has played a role in poverty reduction by creating employment opportunities and increasing public expenditure on health, education, and infrastructure. Using the official government definition of the national poverty line as Rp275,779 ($21.20) per month, the government estimates that 11.47% of Indonesians are living in poverty.[7] This is down from 23.40% in 1999, yet still represents 27.6 million people. The many millions of households at or near the poverty line are particularly vulnerable to economic or natural shock, with estimates that more than a quarter of all Indonesians moved in or out of poverty at least once during 2008–2010.[8]

17. Indonesia, under a new president and executive team, has set out to achieve a target growth rate of 8% by 2019. Achieving this target will depend to a large extent on the government's ability to improve energy sector performance. Having transitioned from a net energy exporter to a significant energy importer, the country has been unable to put in place an appropriate policy framework to adapt to this reality until recently. Earlier in 2015, the government removed subsidies on gasoline and enacted a nearly 30% increase in the price of diesel. It has also removed power tariff subsidies and put in place automatic price adjustment for all but a few categories of consumers. During 2015–2019, the government plans to enact a series of subsector reforms aiming to (i) expand energy production through greater private sector investment and more effective public sector investment; (ii) bolster the sustainability of the sector through increased reliance on domestic gas, renewable energy, and energy efficiency; and (iii) expand energy access to all Indonesians.

18. The national poverty reduction strategy is incorporated in the National Medium-Term Development Plan (RPJMN), 2015–2019 and identifies insufficient investment in infrastructure, including the energy sector, as a critical constraint to economic growth. Infrastructure has been

[7] Badan Pusat Statistik (Central Bureau of Statistics). September 2013.
[8] World Bank. 2012. *Sustainable Energy for All.* Washington, DC.

the primary driving factor in poverty reduction. The plan also highlights expanding electricity access to all Indonesians and increasing annual per capita consumption from 800 kilowatt-hours (kWh) to 1,200 kWh as key goals, along with bolstering domestic energy security through increased investment in the subsector, expanded production of gas, increased utilization of renewable energy, and scaling up energy efficiency.

19. **Beneficiaries.** The primary program beneficiaries will be the approximately 1 million new customers connected to the distribution grid, who will benefit from having electric lighting and the ability to connect small appliances such as televisions, rice cookers, and hot water jugs. Children will be able to read and study in the evenings, and their health environment will be improved with the elimination of kerosene lamps and open fires. Village schools and health centers can also benefit from connection to electricity, especially with the ability to use refrigeration for storage of vaccines and other health supplies, and to use lighting for dark schoolrooms and patient examination rooms. All existing customers in Sumatra (11.18 million in 2014) are expected to also benefit from the improved power reliability and quality of supply.

20. The overall program beneficiaries include PLN, local governments, industries, commercial establishments, and households. The program is expected to improve the investment climate in the energy sector and expand electricity access. As a result, the program will provide economic opportunities for large industries and small and medium-sized enterprises, as well as increase the efficiency of public services (e.g., hospitals, schools, government offices) in Sumatra. Urban and rural consumers, including industrial, agricultural, commercial, and domestic customers, are all potential beneficiaries from a sustainable energy sector.

21. **Stakeholder support.** PLN undertakes frequent and extensive consultations with government and regional authorities for all of its activities. During the April 2015 reconnaissance mission, tripartite discussions involved ADB, the Ministry of Finance, and the National Development Planning Agency (BAPPENAS) on direct lending and provision of a government guarantee for a direct loan to PLN.

22. PLN's business units responsible for transmission and substations (*Unit Bisnis PLN Wilayah*, *Unit Bisnis PLN Pelayuran*, and *Unit Bisnis PLN Distribusi*) liaise closely with the relevant local authorities in each of their provinces on issues including regional development, planned new load centers, and housing development. They also coordinate with planned construction work projects that are likely to temporarily impact the public, such as road closures.

23. **Gender impacts.** Women have an important role for domestic activities, such as cooking, and arranging wood or other alternative fuels for cooking and lighting. Women also work to meet their families' basic needs through subsistence and income-earning activities. A reliable, sustainable, and affordable supply of electricity will significantly reduce time and effort spent by women for domestic activities, by reducing the labor required to obtain and use other fuels; enabling income-generating activities in the home, and family or leisure time; allowing easier study for school or other training; and generally improving the health and quality of life. Women running home industries, businesses, and other enterprises may experience lower production costs and increased revenue.

24. While energy provision is identified as a critical input for women's activities, the program aims to improve the transmission and distribution infrastructure for electricity to be supplied to the entire population of Sumatra, irrespective of gender and benefits, allowing very little opportunity for gender design features. Therefore, the program will not specifically promote gender equality or empowerment of women.

2. Adequacy

25. **Effectiveness.** The sector assessment indicates that the key challenges facing the power subsector are insufficient finance, uncoordinated planning, and chronic problems of implementation such as procurement delays. The program makes use of the results-based lending (RBL) modality, which links financing to achievement of key results. The program design incorporates three distinct results chains that together link up at the outcome level, with an expected impact that aligns with national priorities. The results areas chosen and performance targets set in the design are adequate to achieve the overall sector goals, and the RBL modality fits well with the government's shift to establishing performance-based regulation for PLN and subsidy allocation, including an interministerial committee to supervise its effective application.

26. The major risk to achievement of the program objectives is that PLN's funding targets to meet required investments in power generation, transmission, and distribution are not met. Very large investments are needed, but currently the state and the private sector are unlikely to provide these. Capital expenditure by state-owned enterprises is generally modest because they are subject to price controls and often operate inefficient business models, frequently as a consequence of past pricing decisions that have distorted investment. Indonesia has had little success in establishing or maintaining an attractive investment climate for its energy sector because of the lack of regulatory independence.

27. The bulk of PLN's long-term financial needs in the recent past have been met either by the government or through sovereign-backed loans provided by ADB, the World Bank, and bilateral donors such as Japan and German development cooperation through KFW, wherein the Ministry of Finance as the borrower onlends to PLN (two-step loans). Currently, PLN's liabilities for these loans total $3.3 billion. However, an increased procedural requirement within the government to approve loan negotiations and subsequent annual disbursements from bilateral and multilateral loans has been a factor in the slow processing of sovereign-backed loans to PLN. On the other hand, PLN has been able to access the capital markets directly and issue dollar- and euro-denominated bonds. In 2014, PLN received long-term financing from a European export credit agency and from the French and German development agencies.

28. Going forward, the government and PLN are keen to access funding directly from international financial institutions, commercial banks, and the capital markets without having to go through the government processes. The Ministry of Finance recently issued Ministerial Regulation No. 189/PMK.08/2015 on procedures for the issuance of a sovereign guarantee to cover a direct loan to a state-owned enterprise, such as PLN. This breakthrough allows the government to provide a guarantee for loans being provided to PLN by international financial institutions as an alternative to the traditional two-step loans. PLN's financial needs are very large and international financial institutions will be limited in the number and size of non-sovereign-backed loans they can make to PLN so as to not violate their single obligor credit limits. Therefore, in the future, lenders will likely have to provide a combination of direct and sovereign-backed loans to PLN.

29. **Efficiency and economy.** The grid-strengthening program, which will be supported under the program, is designed to incentivize private sector participation in power generation, which needs stronger transmission and distribution networks to evacuate the electricity produced. PLN's commitment to improve the performance of the Sumatra grid will signal to the private sector the opportunity to boost the regions' economic growth and increase Sumatra's share of the Indonesian GDP from the current 25%. A stronger power grid will lead to a reduction in power outages and enhanced quality of supply received by the consumer.

30. The program's disbursement-linked indicators (DLIs) and other key performance indicators center on the increased number of customers, higher energy sales to households in Sumatra, customer satisfaction, and reliability indexes, such as the number of medium-voltage feeder interruptions per 100 kilometers of line. These indicators, including the DLIs, were carefully selected and sequenced to align with areas crucial for the successful implementation of the program; greater efficiency will also be achieved through lower transaction costs that will result from the use of government systems under the RBL modality.

31. **Sustainability.** The long-term sustainability of the program is strengthened by the government's commitment to develop the 42 GW program, which calls for additional generating capacity by 2019 if Indonesia is to achieve 8% economic growth. The government is likely to keep exerting its pressure on PLN to strengthen the Sumatra grid to allow it to absorb another 9 GW of new capacity coming online by 2019. The government has sought several measures to boost investor confidence, including its plan to finance $400 billion of infrastructure projects also by 2019. With a budget of $22 billion dedicated to infrastructure and billions more expected to come from the private sector, the government revised its budget for 2015 to increase the allocation for infrastructure spending by 53%. The target for developing 42 GW of coal-fired, gas-fired, hydropower, and geothermal power stations is critical for implementation; otherwise supply will be outstripped by demand. PLN and the government both recognize that demand is especially directed toward Java and locations in Sumatra. The design and construction has to proceed as fast as possible and tendering accelerated. Several coal mine-mouth power projects based in Sumatra have already been identified. If domestic or external shocks negatively affect PLN's financial situation, the program's medium-term sustainability will be enhanced by the RBL modality, since the linking of disbursements to results will incentivize the achievement of DLI targets. Furthermore, the government's reforms in fiduciary and safeguard matters will help sustain progress in financial management, procurement, anticorruption efforts, and environmental and social safeguards in the medium term.

3. Financial and Economic Analysis

32. Ensuring access to electricity is a core responsibility of the state. In addition to its intrinsic value as a basic right of every citizen, access to electricity or energy has an instrumental value by increasing the productivity of a country's human capital. The company has a strategically important position as it is the sole vertically integrated electric utility, including its dominant position in generation, transmission, and distribution. Government subsidies support its financial viability and soundness of operations.

33. ADB loan funds will merge in PLN's account with other resources, including $500 million from the World Bank for strengthening Sumatra's distribution, and that of others, if applicable. The program will be funded largely from PLN's internal cash flows, which include government subsidies to PLN. Since ADB's support for the program is through the RBL modality, transactions or payments related to any specific funding source will not need to be identified. Likewise, the management of funds will be based on the financial management system of PLN and its ordinary procedures for budget preparation, funds release, execution, and accountability. Program accounting and reporting procedures and responsibilities will follow PLN's ordinary approach for program implementation. A private firm will audit PLN's annual consolidated financial statements using international standards; audit opinions will be issued in accordance with the International Standards on Auditing.[9] The external auditor will prepare a separate

[9] ADB and PLN will agree on the detailed financial reporting and external audit requirements for the program at loan negotiations, they will be documented in the program implementation document.

program disclosure to certify the actual program expenditure,[10] and the procurement eligibility computation.[11] PLN will submit the annual audited financial statements and the program disclosure to ADB within 1 month from approval by the relevant authority. PLN publishes its consolidated financial statements and the independent auditor's report in its annual report.

34. The economic viability of the program is evaluated using a system approach, which evaluates the entire Sumatra program ($7.362 billion) as the ADB-supported program is interlinked and serves to improve the network as a whole. Following ADB's *Guidelines for the Economic Analysis of Projects*, economic costs and benefits accrued from the project are compared with a without-project scenario over the lifetime of the project: 20 years of operations starting from 2020 upon the completion of construction.[12] Energy sales are assumed to increase by at least 7% each year from the baseline of 27,610.77 GWh in 2014, until such sales reach the full capacity of the program-supported transmission and distribution network. Afterward the incremental sales will remain constant.

35. The increased capacity will then enable PNL to supply power to meet rapidly increasing demands of existing customers and to add new customers, which will increase the electrification rate in Sumatra from the current 84%. With the program, the capacity of the transmission and distribution networks will be 9,000 MW. The reliability of the power system will be significantly improved with strengthened and upgraded network capacity with more efficient technologies, such as HTLS conductors. In this context, PLN aims to improve SAIDI: reduced to less than or equal to 191 minutes/customer/year by 2019 from the baseline of 493 minutes/customer/year in 2014; and SAIFI: reduced to less than or equal to 8.11 incidents/customer/year by 2019 from the 2014 baseline of 8.63 incidents/customer/year.

36. The incremental sales are valued at the economic value of electricity, which is estimated as the cost of electricity supply, as current tariffs are not cost recovery and are heavily regulated. This economic value is calculated as the weighted average cost of electricity supply in Sumatra, which is Rp1,876/kWh, based on the cost of electricity supply presented in ADB's 2015 study on achieving universal electricity access in Indonesia.[13] Nonincremental benefits result from resource cost saving from back-up diesel generation offset by increased grid-power supply, but they are not quantified due to data limitation.

37. The economic costs of the program comprise (i) all costs directly incurred during implementation and subsequent operation of the program, i.e., investment costs and operation and maintenance costs of transmission and distribution networks; and (ii) generation cost. The operation and maintenance cost is assumed to be 2.0% of the capital cost. The total base capital cost of the program has been converted into economic cost. In this process, transfer payments (taxes and duties) and price contingencies are excluded. In addition, the domestic price numeraire is chosen, and a shadow exchange rate factor of 1.15 is used to convert all traded goods and services to domestic prices. Equipment and material procurement will be done through international and national competitive bidding. These costs are considered to represent traded goods and are therefore multiplied by the shadow exchange rate factor. The generation cost is estimated as Rp1,265/kWh, as the weighted average cost of all generation facilities during 2015–2019 based on PLN's power expansion plan.

[10] The amount of program expenditures for the previous year(s), current year, and cumulative.
[11] Net procurement from ADB member countries is at least equal to the value of ADB disbursements.
[12] ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila.
[13] Government of Indonesia and ADB. 2015. *Achieving Universal Electricity Access in Indonesia.* Jakarta.

38. Following this approach, the economic analysis of the program yields an economic internal rate of return of 15.7%, exceeding the hurdle rate of 12.0%. This confirms the economic viability of the program.

4. Implementation Arrangements

39. **Fiduciary and safeguard functions.** The program will be implemented using PLN's financial management systems as a basis for central and regional budgeting, accounting, internal control, financial reporting, and auditing. The program will use PLN's standard procurement systems for international and national competitive bidding methods for the supply of goods and installation of works. PLN and ADB will agree on any special risk mitigation measures associated with fiduciary and safeguard functions. Any special modification of these systems agreed between PLN and the ADB will be reflected in the agreed program action plan.

40. **Monitoring and evaluation.** Monitoring the achievement of results and compliance with fiduciary and safeguard requirements is a critical component of the program. The program will rely on PLN's existing financial and statistics systems, supplemented by special reports as specified in the DLI protocols. Actions essential to the program monitoring and evaluation (M&E) functions will be included in the DLIs and program action plan. PLN is planning to enhance and strengthen its M&E system, by, for example, (i) tracking the needs-based power subsector development plan and (ii) reviewing the verification protocols used for indicators. Currently, PLN's Corporate Performance Control Unit (SPKK) manages M&E functions through its gathering and processing of statistics received from all of PLN's various divisions throughout the country. It is also responsible for coordinating the preparation of PLN's annual statistics. SPKK is proposed to be one of the focal counterparts for monitoring progress toward achieving the DLIs, as well as any other special reporting requirements associated with the program.

41. **Reviews**. ADB will monitor program implementation through regular technical and financial review missions and a midterm review, as agreed with PLN. Annual reviews will assess and verify the achievement of DLIs; this will be the basis for fund disbursements. A midterm review mission will be conducted after year 2 of the program, coinciding with the annual review mission. It will review and if necessary revise DLIs based on implementation experience and performance up to that time.

C. Managing Risks and Improving Capacity

42. The soundness assessment shows that the program is well justified in terms of its contribution to PLN's Electricity Power Supply Business Plan (RUPTL), 2015–2024 and achieving the goals of the National Medium-Term Development Plan (RPJMN), 2015–2019, as well as its expected impact in Sumatra on improving the power subsector and meeting overall economic development, as measured by the DLIs. Successful program implementation will require that PLN remains committed to implementation. PLN must improve its implementation processes to ensure that the works are completed in a timely manner and on budget.

43. Overall procurement risk is moderate. One risk involves procurement and market capacity. The significant increase in investment in distribution and transmission during implementation may strain the capacity of PLN and the supply markets. Another risk is that large-scale procurements will have to include suitable safeguards against fraud and corruption. PLN has taken several important initiatives to curb corruption within the organization and has significantly strengthened internal controls. To further strengthen PLN's oversight and detection

mechanism, the program action plan includes a procurement monitoring framework and spending profile for the program.

44. The key to managing 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 it introduce a procurement monitoring system, including a spending analysis of its procurement. If this is implemented for the program, both PLN and ADB can adequately manage procurement risks and take corrective action if and when necessary. ADB and PLN have agreed on a procurement monitoring framework.[14]

[14] Procurement Monitoring Framework (accessible from the list of linked documents in Appendix 2 of the report and recommendation of the President).