PROGRAM-FOR-RESULTS INFORMATION DOCUMENT (PID)
APPRAISAL STAGE

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Implementing Agency	PT Perusahaan Listrik Negara (PLN)
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I. Country Context

1. Indonesia is the world's largest archipelagic state, its fourth most populous nation, and the 10th largest economy in terms of purchasing power parity. It is a member of the ASEAN group of countries that have a combined population of 608.4 million and is also a member of the G-20. With more than 17,500 islands, of which 6,000 are inhabited, Indonesia has a population of over 250 million, with 300 distinct ethnic groups and over 700 languages and dialects. It has a gross national income per capita of US$3,524 (2014) and it has more than halved extreme poverty to 11.3 percent in the past fifteen years.

2. Indonesia's economic planning follows a 20-year development cycle. The current plan spans from 2005 to 2025. The five-year medium-term development plan, i.e. the third phase of the long-term plan runs from 2015 to 2019, and focuses on key development priorities including energy and infrastructure development, and on improving social assistance programs in education and health-care. Recent energy subsidy reforms have enabled shifts in public spending towards programs that directly impact the poor. However more than 28 million Indonesians currently live below the poverty line set at US$24.4 per month and approximately half of all households remain clustered around this poverty line. Employment growth has been slower than population growth, and public services remain inadequate by middle income country standards. Indonesia is also doing poorly on a number of health and infrastructure related indicators.

3. In addition despite rising government spending in recent years, Indonesia's core infrastructure stock, such as electricity, road networks, ports, and telecommunication facilities, has not kept pace with economic growth. The resultant "infrastructure gap" in terms of both quantity and quality of investment is due to several factors among which the most important are: a complex and non-transparent regulatory framework for implementation of infrastructure

projects; an underdeveloped framework for Public-Private Partnerships resulting in insufficient mobilization of private funds for investment; and the inadequate participation of domestic capital markets in channeling funds to infrastructure sectors. The infrastructure gap contributes to undermine productivity, growth, competitiveness and poverty reduction efforts.

4. Going forward, reducing the infrastructure gap would support growth and prosperity through several channels. The spending effect would support short-term growth and the creation of jobs. As the investments translate into infrastructure stock, private investment will be crowded-in and productive capacity, and long-term growth will be supported. As infrastructure services are delivered firms' competitiveness would increase and so would the population's access to services.

II. Sectoral (or multi-sectoral) and Institutional Context

5. The power sector in Indonesia is dominated by the state owned power utility PT Perusahaan Listrik Negara (PLN) that owns and operates 39.3 GW of the 51.6 GW of installed generating capacity (2014). Independent Power Producers (IPPs) represent 7.9 GW of installed capacity, and the balance is from captive generation. Total electricity produced in 2014 was 228.5 TWh of which 198.6 TWh was sold during the year to industries (33.2 percent), households (42.3 percent), businesses (18.3 percent), and others (6.2 percent). PLN's annual peak load in 2014 was 33.3 GW, an increase of 8.06 percent over the prior year. PLN with its monopoly until 2009 on power transmission and distribution (39,910 km of transmission lines, and 925,312 km of distribution lines) is also the major purchaser of electricity produced by IPPs (53.2 TWh or 23.3 percent of total production). The sector is regulated by the Ministry of Energy and Mineral Resources, while decisions relating to the sector's financial footing including those on proposed tariff increases are taken at the Parliamentary level (Commission VII of the House of Representatives) in discussion with the Ministry of Finance, the State Planning Ministry, the Ministry of State Owned Enterprises, and PLN. The sector until recently was characterized by low electricity tariffs, and high subsidies to PLN. These subsidies projected at 0.6 percent of GDP in 2015 remain unsustainable at current levels, and the government has embarked upon a tariff rationalization effort aimed at limiting subsidies to low income consumers.

6. In addition, Indonesia, with an electrification ratio of 84.3 percent of the population, lags behind its neighbors such as Thailand, Vietnam and China which have achieved universal access. Access to electricity is an important driver for improvements in health and educational outcomes as well as for income growth opportunities for the population. With demand continuing to increase at an annual rate of about 8 percent the national power expansion plan (RUPTL) for the next ten years to 2024 projects a requirement for 70 GW of new generation capacity together with associated transmission and distribution capacity. Public sector resources through PLN are used to finance part of the additional generation capacity alongside the private sector which is expected to develop, finance and operate at least 50 percent (36 GW) of the new capacity during 2015-24.

7. In the face of tremendous pressure to keep pace with economic growth combined with investments that were well below the levels needed to ensure reliable supply, Indonesia's power system has been left with inadequate generating capacity to meet electricity demand (average

annual demand growth of 7.8 percent during 2009-13). The sector has faced significant challenges in mobilizing large investments from the public and private sectors due to the following reasons:

a. *Weak sector financial footing* of PLN due to low electricity tariffs combined with limited Government fiscal space to support major investments.
b. *A large and unsustainable government public service obligation (PSO) subsidy* averaging US$9.3 billion annually during 2011-14, and projected at 0.6 percent of GDP in 2015 covering 24 percent of PLN's operating revenues.
c. *PLN's limited borrowing capacity* due to subsidized electricity tariffs combined with delayed subsidy payments negatively impacting PLN's financial condition and therefore its access to financial markets.
d. *Weak contract management and implementation capacity* at PLN leading to long lead times in contracting and construction required to install new capacity.
e. *High political risk* due to an evolving policy framework, regulatory uncertainty, and delays in the issuance of licenses and approvals, undermining private investment.

8. Additional energy sector challenges include a rapid increase of coal in power generation imposing environmental costs on the economy and on society and energy efficiency programs that have yet to gain any significant traction. Coal accounted for about 52 percent of the generation fuel mix at the end of 2014 and its share is expected to increase to 60 percent by 2019. The lack of implementation of a significant energy efficiency program contributes to the persistent rapid growth in power demand which in turn imposes large capital investment requirements for the country.

9. The impacts of inadequate investment in power infrastructure are felt through power deficits and persistent low access to electricity (42 million Indonesians have no access to electricity).

10. To address these challenges, at a strategic level, the GoI has committed to a number of long term measures around the following targets:

a. reducing, and better targeting, energy subsidies to improve productive and resource allocative efficiency;
b. expanding electricity access by improving the electrification rate from 84.3 percent in 2014 to 99 percent by 2024;
c. scaling-up renewable energy deployment from 11 percent in 2014 to 23 percent of the energy mix by 2025;
d. placing investment to expand power generation capacity as one of the high priority pillars of its infrastructure revival program; and
e. mobilizing a partnership program on energy conservation to incentivize industrial enterprises to convert to energy efficient technologies.

11. At an operational level the GoI has undertaken or initiated the following several measures to address the above power sector challenges:

a. *Prepared an ambitious power sector investment program.* PLN has developed a power system expansion plan called the "Rencana Usaha Penyediaan Tenaga Listrik", (RUPTL) for 2015-2024 which is expected to add 70 GW to the system at a total cost of about US$97 billion. For the first five years (2015-2019) the program will add 42 GW, including 7 GW carried over from prior fast track programs. Out of this program PLN is expected to build, finance and operate 5 GW at an estimated cost of US$40 billion, including the cost of the associated transmission and distribution investments and the private sector is expected to implement the balance of 30 GW. Given the implementation difficulties in the past and with ongoing projects, delivery of such a massive program will be challenging for both PLN and the GoI. To succeed, it will be necessary for GoI and PLN to step up measures to address the constraints to the implementation of the investment program and to identify new ways of doing business. The proposed Program presents a new approach for implementation of the distribution investments.
b. *Implemented substantial increases in electricity tariffs* in the last two years to improve PLN's financial performance, to better manage power demand and to reduce the PSO subsidy.
c. *Issued a new geothermal law and pricing decree* to provide incentives for the development of Indonesia's substantial domestic energy resource.
d. *Completed a gas development master plan* to provide a strategy/road map for improving the management of gas resources, including their availability to the domestic market.
e. *Initiated a performance based regulation for PLN* so that power prices can be based on efficient costs.
f. *Introduced a feed-in tariff* to incentivize private finance for renewable energy development.
g. *Initiated a process to introduce a direct lending mechanism* for SoEs to borrow directly from bilateral and multilateral sources for infrastructure financing.
h. *Created a performance management unit* at the line ministry and a project management office under the National Project Director, to improve energy project delivery.

12. The Bank is also supporting Indonesia to address these sector development challenges through development policy and investment lending and through technical assistance advisory services. Three ongoing IPF operations for a total of about US$1.2 billion in IBRD Loans are supporting the sector's ability to meet demand by financing expansion of renewable energy generation capacity (Upper Cisokan Hydropower Project) and transmission lines and substations. The recently approved Development Policy Loan is leveraging policy reforms to improve the regulatory framework for private sector participation in both power and gas, to reduce energy subsidies, and to improve the framework for increased electrification nationwide.

III. Program Scope

13. PLN's current power expansion plan comprising generation, transmission and distribution investment requirements (the "Rencana Usaha Penyediaan Tenaga Listrik" or RUPTL) covers the period 2015-2024. The broader context for the RUPTL is the Rencana Umum Ketenagalistrikan Nasional (RUKN) which is a 20-year national policy document approved by

Parliament. The RUKN provides the GoI's policy guidance for preparation of the RUPTL. This guidance is related primarily to the projected energy demand and desired targets for electrification and the energy mix of production. The current RUKN was approved by Parliament in 2008 and covers the period up to 2027.

14. To close the power infrastructure gap which is constraining economic growth the current administration is focusing on implementation of the 5-year time slice of the RUPTL covering the period 2015-2019. Consistent with both the RUKN and the RUPTL the key objectives of the 5-year time slice are to increase access to electricity for household consumers and to meet the economy's power needs while improving efficiency and reliability of supply. Its specific key targets are to increase generation capacity by 35 GW and increase access to electricity from 85%, to 97% by 2019. Further, PLN's detailed implementation plan envisages improvements in efficiency (losses reduction) and reliability indicators (SAIDI and SAIFI).

15. The estimated total costs of the RUPTL for 2015-2019 are US$83.4 billion of which US$58.9 billion is for generation, US$17.1 billion for transmission and US$7.4 billion for distribution. The Government's program on which the proposed PforR is based is the distribution component of the 2015-2019 time slice of the RUPTL which entails activities to improve distribution system planning capabilities, connect new customers, improve existing distribution networks, and increase the quality of services.

Bank Financed Program-for-Results

16. The PforR Program to be supported by the Bank is a geographic slice of the distribution component of the RUPTL covering Indonesia's Sumatra region for the period 2015-2019. The estimated cost of the Sumatra distribution program is US$1.45 billion or about 20% of the total national distribution program over the first five years of the 2015-20124 RUPTL. PLN has selected the Sumatra region for coverage under the proposed program based on several specific criteria. First, Sumatra has the largest population center outside Java Bali with about 54 million people, of which 9 million have no access to electricity and is an important economic growth center for Indonesia. Second, there are substantial existing and planned generation and transmission investments in Sumatra that require complementary investment in distribution in order to enable the power produced when these investments are commissioned to be delivered to the regional economy. Third, a focus on Sumatra offers the best prospect for fast progress towards achieving the RUPTL's national ER target of 99.4 percent by 2024. Up to about 3.2 million customers could be added to the grid in the 5 year period to 2019 resulting in an increase in the regional electrification ratio from 85 percent to about 90 percent. Fourth, the region offers the best opportunity for "piloting" the use of the IFI's performance-based lending instruments, learning lessons, and improving effectiveness of its program expenditure management before attempting to use them in the more difficult terrain of Eastern Indonesia. Thus, PLN's strategy is to mobilize multilateral funding to complement its own and fill the financing gap for the Sumatra distribution program.

17. The Program will support implementation of activities designed to achieve PLN's program goals in five result areas as follows:

Result Area 1: Improved access to electricity. To achieve this objective the Program will support the expansion of the distribution network with approximately: (i) 19,487 circuit-km of MV and 23,594 circuit-km of LV distribution lines; and (ii) 28,327 transformer units with a total MVA capacity of 2,895. These network improvements will enable PLN to connect about 3.2 million additional customers over the 2015-2019 period.

Result Area 2: Improved quality of service. Activities to improve the quality of service will involve system reinforcement and upgrading and customer outage management. In addition the Program activities will include upgrading of Distribution Control Centers to SCADA functionality and completion of a GIS database in each Wilayah. These activities will improve the accuracy of measuring system reliability using the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) - internationally recognized standards for measuring system reliability. Reduced MV feeder technical interruptions, and decreases in the frequency and duration of outages and in voltage fluctuations will indicate an improvement in the quality of services.

Result Area 3: Improved distribution efficiency. To achieve this objective the Program will support rehabilitation and upgrading of existing distribution lines and substations, and installation of additional substations and of improved metering devices. Distribution losses, a key barometer of utility performance, deteriorated significantly in 2013 (ranged from 7.4%-14.7% among the Wilayahs) and again in 2015 after showing a modest recovery in 2014. The expected additions to the system of 80 grid substations (under PLN's transmission program and not part of the PforR) by 2017 will help to reduce system losses. The Program will complement loss reduction efforts by: (i) expanding, rehabilitating, and upgrading the distribution lines and substations; (ii) increasing the number of distribution transformers and thereby improving the LV/MV ratio in the network; and (iii) supporting improved network planning.

Result Area 4: Increased power consumption. The GoI's expectation is that increased household connections will translate into higher levels of electricity consumption which would contribute to improved productivity and income growth among the population although per capita consumption may initially decline as poorer consumers are connected. The Program will, therefore, also measure the increases in sales to residential customers that will result from implementation of the Program activities. All the activities that will be implemented under the Program to increase access, improve quality of services and to improve efficiency and institutional capacity will also contribute to increased power consumption by relieving constraints that have kept average annual growth rates at about 8 percent and below**.** However, achievement of this goal will also be influenced by activities outside the program related to generation and transmission components of the RUPTL and the risks related thereto and relevant management measures are explained in the integrated risk framework.

Result Area 5: Improved institutional capacity. The Program's institutional capacity building objectives are to improve distribution system planning and budgeting and to improve operational management.

18. To strengthen distribution planning the Program will include the following activities: (i) review, update and issuance of revised distribution planning guidelines; (ii) integration of

planning software (ETAP) with GIS databases; (iii) enabling the use of planning software by multiple users at each location through procurement of a corporate license.

19. Activities to integrate budgeting with ERP will initially be piloted in at least one region and then gradually extended to cover the remaining regions in Sumatra. Under the Program, PLN will review the potential to optimize the use of GIS data bases, not only for distribution planning but also for customer outage management, transformer load management and asset management functions.

Program Beneficiaries

20. The principal Program beneficiaries will include: (a) about 3.2 million new customers that will be connected to the grid and benefit from a more reliable energy source; (b) existing industrial and commercial customers who will benefit from increased quality of service and will thus be able to better plan their operations; (iii) domestic contractors who will have the opportunity to bid and participate in the implementation of the Program; (iv) local equipment and materials suppliers who will be able to bid and supply the Wilayahs with distribution materials; and (v) the local population that will benefit from increased employment opportunities during construction as the Program represents a significant scale up of PLN's distribution activities.

The Asian Development Bank's Program

21. The Asian Development Bank (ADB) has prepared and negotiated a Results Based Loan (RBL) of US$600 million to PLN. The ADB RBL instrument is very similar to the PforR. The RBL will support PLN's transmission and distribution expenditure program over the 2015-19 period in Sumatra region. Thus, both ADB and the Bank are proposing to provide parallel financing for the same distribution program in Sumatra over the same period. The only difference in program coverage is that of the US$600 million ADB Loan about US$180 million will be used to support prior results of the transmission component of the RUPTL; otherwise the Disbursement-Linked Indicators (DLIs), the implementation, monitoring and evaluation arrangements have been successfully harmonized through consultations and information sharing during the preparation process. PLN has agreed to retain an Independent Verification Agent (IVA) for verification of the achievement of the DLIs. ADB and the Bank will disburse their loans based on the report of the same IVA.

IV. Program Development Objective(s)

22. The program's development objective is to increase access to electricity services and to improve the efficiency and reliability of their delivery in selected areas of Indonesia.

V. Environmental and Social Effects

23. Communities who believe that they are adversely affected as a result of a Bank supported PforR operation, as defined by the applicable policy and procedures, may submit complaints to the existing program grievance redress mechanism within PLN or to the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in

order to address pertinent concerns. Affected communities may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

24. The Bank with support from PLN carried out an environmental and social system assessment (ESSA) to gauge the environmental and social management systems applicable to the Program which include among others, potential risks and impacts of the proposed program, compliance with environmental and social management regulations, harmonization with GOI's environmental and social risk management systems, and capacity for effective management in light of PLN's current performance. The Bank has consulted with relevant stakeholders regarding the draft ESSA and has disclosed it on PLN's website on October 16, 2015 prior to the first public consultation, and in the Infoshop.

25. PLN already has a set of procedures on environmental and social safeguards systems that are aligned with the Indonesian legal framework and with Bank policies. The Wilayahs have been carrying out similar distribution programs over the years and are experienced in and capable of managing distribution construction envisaged under the program. The environmental impact of the proposed distribution activities is small and temporary i.e. during construction. The operation of distribution activities does not trigger any requirements under GOI's environmental regulations due to their low potential impacts.

26. From a social perspective, Program activities normally occur within the right of way of existing roads. When Program activities occur on private land, PLN's practice is to minimize the siting of concrete poles on private lands, and to avoid disturbance of non-land assets to the maximum extent possible. Land acquisition would be needed for switching substations (around 6x8 m^2) and it is paid for prior to construction under the norm of willing buyer, willing seller. However, the number of switching substations to be built under the Program are expected to be limited. Since land acquisition is limited, and there is no physical or economic displacement of individuals, impacts on affected persons is expected to be minor.

27. PLN has a well-established management system for handling any grievance/complaint from the public throughout the country, namely through their Call Center 123 and through front-line customer services representatives. Through *Call Center 123* which can be accessed by anyone, anywhere in Indonesia through PLN's website, email, telephone, and social media (e.g. Facebook, Twitter); *Wilayahs* immediately act on community complaints including those related to construction impacts, environment, community health and safety, and social issues, by deploying PLN's technical service responders.

28. The Bank and PLN have conducted public consultation in three *Wilayahs* (Lampung, Aceh, Bangka-Belitung). Additional consultations shall be conducted during appraisal in Padang and Palembang.

VI. Financing

Table 1: Program Financing
(US$ Million)

Source	Amount	% of Total
Government		
PT PLN	530	37
IBRD	500	34
Other Development Partners		
Asian Development Bank	420	29
Total Program Financing	**1,450**	**100**

VII. Program Institutional and Implementation Arrangements

29. The program will be administered by a central Project Management Office (PMO) located at PLN's headquarters, but the physical implementation activities will be carried out by PLN's regional offices called "Wilayahs" through Project Management Units (PMUs). The Wilayahs have been carrying out similar programs over the years and are experienced and capable of managing the distribution construction work envisaged under the program. Most material requirements will be requisitioned from approved suppliers under PLN's Supply Chain Management (SCM) system and the balance of items will be procured locally by the Wilayahs. The construction works contracts will be procured by the Wilayahs. All implementation activities will be carried out by the respective contracts divisions within each Wilayah and overseen by the distribution systems manager under the Wilayah General Manager. The PMO supported by the Wilayahs will bear overall responsibility for the work program, quality and timeliness of the program works, and its satisfactory completion.

VIII. Contact point

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