



## Concept Paper

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# Proposed Results-Based Loan Perusahaan Listrik Negara Sustainable Energy Access in Eastern Indonesia— Electricity Grid Development Program Phase II

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**Asian Development Bank**

## CURRENCY EQUIVALENTS

(as of 22 November 2018)

Currency unit	=	rupiah (Rp)
Rp1.00	=	\$0.000069
\$1.00	=	Rp14,581

## ABBREVIATIONS

ADB	–	Asian Development Bank
DLI	–	disbursement-linked indicator
GDI	–	gender development indices
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)

## NOTES

- (i) The fiscal year (FY) of the Government of Indonesia and its agencies ends on 31 December. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g., FY2018 ends on 31 December 2018.
- (ii) In this report, “\$” refers to United States dollars.

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## I. THE PROGRAM

### A. Program Strategic Context and Rationale

1. **Progress and challenges.** Indonesia's economy, the world's eighth largest in terms of purchasing power parity, has doubled since 2000. The decline in the poverty rate (19% in 2000 to 10% in 2017) has been remarkable, with 12.2 million people lifted out of poverty in 17 years. However, economic growth has slowed since 2010<sup>1</sup>, largely due to lower commodity prices, and regional disparities remain stark. In Eastern Indonesia,<sup>2</sup> poor infrastructure for electricity services, transport, and communications constrains its enormous potential for growth.

2. **National priorities and ADB support.** Expanded electrification, with priority to regions outside Java, is a pillar of the government's infrastructure investment plan. The plan includes an increased electrification ratio from 89% in 2016 to 100% by 2024, 56 gigawatts of new power generation capacity by 2027, and an increased share of renewable energy in the national energy mix from 13% in 2016 to 23% in 2025.<sup>3</sup> ADB's sector assessment<sup>4</sup> and the government's sector strategy prioritizes energy security, nationwide electrification, and priority to Eastern Indonesia, which poses the biggest challenge to electrification due to its isolated and weak power grids. ADB's programmatic support to Eastern Indonesia is aligned with the strategic priorities under Strategy 2030<sup>5</sup> and includes (i) policy support through the Sustainable and Inclusive Energy Program policy-based loan, (ii) a results-based lending (RBL) program for electricity grid development in Sulawesi and Nusa Tenggara,<sup>6</sup> (iii) a sector loan for small- to mid-scale gas-fired power plants and (iv) other complementary sector loans and RBL programs (2019–2021).

3. **Program context.** The proposed program focuses on nine provinces<sup>7</sup> in Kalimantan, Maluku, and Papua. Papua is the poorest and least developed, with 23 to 28% of population living below the poverty line of \$35 per person per month.<sup>8</sup> In Kalimantan, the high provincial GDP per capita masks poverty in remote areas; up to a fifth of Kalimantan's population<sup>9</sup> have consumption levels below \$55 per person per month. Electrification lags behind: households not electrified or only poorly electrified<sup>10</sup> account for 56% and 15% in Papua and West Papua, 20% in both Maluku and North Maluku, and 28%, 18% and 21% in Central, North and West Kalimantan, respectively.<sup>11</sup> The nine provinces are characterized by poor development outcomes and poor gender indicators. Papua, West Papua, and West Kalimantan have among the lowest human development indices in Indonesia. All provinces, except Maluku, have low gender development indices (GDI), with Papua, West Papua, and East, North, and West Kalimantan having the lowest GDIs in Indonesia. Women's share of income is low in all provinces, with the lowest share in East and North Kalimantan (23% and 26% respectively) against a national average of 37%.

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<sup>1</sup> GDP growth has declined from 6.2% in 2010 to 5% in 2017.

<sup>2</sup> The term "Eastern Indonesia" covers provinces in Kalimantan, Maluku, Nusa Tenggara, Papua, and Sulawesi.

<sup>3</sup> Ministry of Energy and Mineral Resources, National Energy Master Plan (RUEN), 2017 and the Electric Power Supply Business Plan (RUPTL) 2018–2027 of the State Electricity Corporation (PLN).

<sup>4</sup> ADB. 2016. *Indonesia: Energy sector assessment, strategy, and road map*. Manila.

<sup>5</sup> ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila. The programs and projects for Eastern Indonesia aim to support, among others, addressing remaining poverty and reducing inequality, tackling climate change, and accelerating progress in gender equality.

<sup>6</sup> ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Results-Based Loan, Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program*. Manila.

<sup>7</sup> Central, East, North, South, and West Kalimantan; Maluku and North Maluku; and Papua and West Papua.

<sup>8</sup> All data are from BPS-Indonesia and refer to the year 2017, unless otherwise stated. <https://www.bps.go.id/>

<sup>9</sup> Statistics from the National Team for Acceleration of Poverty Reduction. <http://www.tnp2k.go.id/>

<sup>10</sup> Expensive and intermittent electricity from diesel gensets or poorly maintained solar photovoltaic plants.

<sup>11</sup> 2017 data from PLN, provided in October 2018.

4. **Electrification impacts.** Increased electrification has been shown to improve development outcomes: (i) increased income, higher school attendance, and improved time use by women for productive and educational activities in Viet Nam; and (ii) increased school completion, increased income, reduced respiratory illness, time savings and a greater role for women in household decisions in Bhutan.<sup>12</sup>

5. **Proposed program.** The proposed RBL program will enhance sustainable, equitable, and reliable access to electricity for the population in nine provinces. It is in the ADB's Country Operations Business Plan 2019–2021 and aligns with the Country Partnership Strategy 2016–2019.<sup>13</sup> The RBL will finance a slice of the broader program in the Electric Power Supply Business Plan (RUPTL) 2018–2027 of the State Electricity Corporation (*Perusahaan Listrik Negara* or PLN). PLN has a financing gap for power delivery, including community-level renewable energy development, for which it is seeking ADB support.

6. **The RBL modality** is suitable as it would (i) reduce high transaction costs associated with scattered small investments; (ii) increase accountability and incentives for delivering and sustaining results, for example ensuring that community-level solar installations are functioning; (iii) incentivize PLN to consolidate gains in institutional strengthening from earlier RBL programs, including on safeguards; (iv) fit with the government's fast-expanding electrification strategy; and (v) stimulate financing and harmonization with other development partners. The program will incorporate lessons learned from ongoing RBL program experience. For example, grant support should be provided to cover the incremental costs of connection for poor households and enhance consumer understanding on safe and productive electricity use. A social impact study (with sex-disaggregated data) will be conducted to collect lessons for future programs.

7. **ADB's value addition to the sector** comes from being the first partner to support extensive rural electrification efforts through the RBL modality. ADB's attention to institutional capacity, such as in asset and waste management, renewable energy, and social impact monitoring will help ensure the sustainability of operations beyond the program's implementation period. Ongoing RBL programs are cofinanced with the World Bank and KfW, and collaboration will be pursued for the proposed program with Agence Française de Développement, Japan International Cooperation Agency, and the governments of Australia and New Zealand.

## B. Indicative Program Scope

**Table 1: Program Scope**

Item	Broader PLN Program	Results-Based Lending Program
Outcome	Electricity access in Kalimantan, Maluku, and Papua enhanced	Sustainable, equitable and reliable access to electricity for the population in Kalimantan, Maluku, and Papua enhanced.
Key outputs	(i) Power generation capacity added; (ii) Power transmission and distribution systems strengthened and expanded; (iii) Increased share of renewable energy	(i) Power distribution network strengthened and expanded; (ii) Renewable energy use increased, (iii) Institutional capacity strengthened and social monitoring enhanced.
Expenditure size	\$4,690 million	Total: \$2,070 million From PLN: \$1,470 million (71%) including PMN and possible partners

<sup>12</sup> Khandker, S.R., Barnes, D.F., Samad, H., and Minh, N.H., 2008. *Welfare Impacts of Rural Electrification: Evidence from Vietnam*. World Bank, Washington DC; and Asian Development Bank, 2010. *Asian Development Bank's Assistance for Rural Electrification in Bhutan—Does Electrification Improve the Quality of Rural Life?* Manila.

<sup>13</sup> ADB. 2018. *Country Operations Business Plan: Indonesia, 2019-2021*. Manila and ADB. 2016. *Country Partnership Strategy: Indonesia, 2016–2019: Towards a Higher, More Inclusive and Sustainable Growth Path*. Manila.

Item	Broader PLN Program	Results-Based Lending Program
		From ADB: \$600 million (29%) + \$3-4 million CEFPF and JFPR grants (proposed)
Geographic coverage	All provinces of Kalimantan, Maluku and Papua	All provinces of Kalimantan, Maluku and Papua
Implementation period	Jan 2020–Dec 2025	Jan 2020–Dec 2025

ADB = Asian Development Bank, CEFPF = Clean Energy Financing Partnership Facility, JFPR = Japan Fund for Poverty Reduction, PLN = State Electricity Corporation, PMN = state capital injection.  
Source: PLN and ADB staff estimates.

### C. Indicative Program Results

8. **Results chain.** At the impact level, the RBL program is aligned with the RUPTL's goal of enhancing the quality of life in Indonesian society by the sustainable use of electricity. The outcome aims to enhance sustainable, equitable and reliable access to electricity for the population in Kalimantan, Maluku, and Papua. Three disbursement-linked indicators (DLIs) at the outcome level focus on (i) the number of customers (DLI 1); (ii) the number of poor households electrified (DLI 2), supported by a grant, with at least 10% female-headed households in the total,<sup>14</sup> and (iii) the reliability of electricity supply, as measured by the reduction in feeder line permanent interruptions (DLI 3). The longitudinal impact study will monitor social outcome indicators separately for women and men, especially on time use. The social outcome indicators are not DLIs, being outside of PLN's control. Three output level results contribute to the outcomes:

- (i) **Output 1. Power distribution network strengthened and expanded.** This will be tracked by the installed length of medium-voltage distribution lines (DLI 4).
- (ii) **Output 2. Renewable energy use increased.** Output 2 focuses on power generation from solar photovoltaic and micro-hydro plants (DLI 5).
- (iii) **Output 3. Institutional capacity and social monitoring enhanced.** Output 3 focuses on improving asset and waste management (DLI 6), which currently has weaknesses, and on enhancing social and gender aspects. Resource person(s) financed by a grant (paragraph 6) will support PLN training workshops on safe and productive energy use, with at least 30% female participation (DLI 7). All DLIs will be independently verified.

### D. Indicative Expenditure Framework and Financing Plan

9. PLN will be the borrower with a sovereign guarantee from the government. The RBL program expenditure is estimated to be \$2,070 million. The financing arrangements are indicated in Table 1. Advance financing (up to 25% of loan amount) and/or financing for prior results (up to 20%) may be provided, subject to the due diligence outcome.

### E. Capacity Development

10. A Program Action Plan will include key actions in technical areas, fiduciary management, monitoring and evaluation, environment, social safeguards, poverty and gender to ensure that achievement of key results strengthen PLN systems.

### F. Technical Assistance

11. Independent verification and PLN training workshops on safe and productive energy use will be conducted with technical support financed on a grant basis (paragraph 6).

<sup>14</sup> Local government officials apply the term only when the woman is widowed or divorced. The proportion of females among household heads is variable and may be as low as 3% in some villages.

## G. Indicative Implementation Arrangements

12. The executing agency will be PLN. The implementation of the program will be undertaken by PLN's regional (*Wilayah*) offices with oversight by PLN headquarters in Jakarta.

## II. ASSESSMENTS EXPECTED

13. The assessments include: (i) program technical soundness; (ii) financial and economic feasibility; (iii) environmental and social safeguards system assessments against applicable policy principles,<sup>15</sup> (iv) fiduciary aspects, including fund flow, program reporting, and DLI verification; (v) PLN's procurement systems; and (vi) social and gender assessments.

## III. PROCESSING PLAN

### A. Risk Categorization

14. The proposed program is categorized as complex as the loan amount is above \$200 million. The risk of having multiple small grids and other risks are mitigated by ADB's previous experience in Indonesia's energy sector, and PLN's capacity as executing agency.

### B. Resource Requirements

15. A total of 11.5 person-months (pm) of staff resources is required, comprising a team leader (4.0 pm), energy economist (0.5 pm), and specialists in energy (1.0 pm), finance (0.5 pm), environment (1.5 pm), social (1.5 pm), gender (0.5 pm), procurement (1.0 pm), and counsel (1.0 pm). Consultant inputs will be supported under the cluster technical assistance C-TA0013-INO: Sustainable Infrastructure Assistance Program financed by the government of Australia through the Department of Foreign Affairs and Trade and administered by ADB.<sup>16</sup>

### C. Processing Schedule

16. The processing schedule is as follows:

**Table 2: Proposed Processing Schedule**

Milestones	Expected Completion Date
Loan fact-finding	March 2019
Management review meeting	April 2019
Loan negotiations	August 2019
ADB Board consideration	3 <sup>rd</sup> quarter 2019
Loan signing	4 <sup>th</sup> quarter 2019

Source: ADB staff estimates

## IV. KEY ISSUES

16. The proposed program will build on the lessons learned from ongoing RBL programs and will use PLN's fiduciary, procurement, and anticorruption systems. The program will determine where further improvements are needed and the subsequent Program Action Plan will contain actions to strengthen PLN systems, as deemed necessary.

<sup>15</sup> ADB. 2009. *Safeguard Policy Statement*. Manila.

<sup>16</sup> ADB. 2018. *Sustainable Infrastructure Assistance Program-Supporting Sustainable and Universal Electricity Access in Indonesia (Subproject 13)*. Manila (TA 9559).



## DESIGN AND MONITORING FRAMEWORK

Impacts the Program is aligned with: The quality of life in Indonesian society is enhanced through the use of electricity (Electricity Power Supply Business Plan [RUPTL], 2018–2027.) <sup>a</sup>			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
<p><b>Outcome:</b> Sustainable, equitable, and reliable access to electricity enhanced.</p>	<p><b>a.</b> Number of PLN customers in Kalimantan, Maluku, and Papua increased to reach at least xx million customers by 2024. (2018 baseline: 5.279 million customers). <b>DLI 1.</b></p> <p><b>b.</b> Poor households provided with PLN electricity increased to xxx households by 2024, disaggregated by female/male-headed households (2018 baseline: xxxx poor households provided with PLN electricity). <b>DLI 2.</b> <i>Grant-supported targets: 21,000 additional HHs (tbc, depending on grant) (10% female-headed)</i> [1] [2]</p> <p><b>c.</b> Reliability of electricity supply improved: feeder line permanent interruptions reduced to xx per 100 ckm by 2024 (2018 baseline: 20.42 interruptions/100 ckm). <b>DLI 3.</b></p> <p><b>d.</b> Time use improved, especially for women:</p> <ul style="list-style-type: none"> <li>• xx hours/week on household work and care activities (women/men)</li> <li>• xx hours/week on productive activities (women/men)</li> <li>• xx hours/week on social/community activities; (women/men) (2019 baselines to be measured)</li> </ul>	<p>a, b. PLN annual statistics, PLN SILM, RBL program reports, and IVA reports</p> <p>c. PLN Wilayah records and IVA reports</p> <p>d. Grant-funded social impact study<sup>[3]</sup></p>	<p>Customer demand declines due to slowing economic growth.</p> <p>The study design is not fully able to screen out unforeseen external socio-economic factors over the program's implementation period.</p>
<p><b>Output 1:</b> Power distribution network strengthened and expanded.<sup>[4]</sup></p>	<p><b>1a.</b> Installed length of medium-voltage distribution lines increased to reach at least xxx ckm by 2024. (2018 baseline: 42,837 ckm) <b>DLI 4</b></p>	<p>1a. PLN annual statistics reports, PLN SILM, and IVA reports</p>	<p>Delivery and installation are unduly delayed by disruptions due to staff and work process changes at PLN offices.</p>
<p><b>Output 2:</b> Clean energy use increased.</p>	<p><b>2a.</b> Power generation from solar PVs (&lt;10 MW) and micro hydro (&lt;1 MW) increased by an additional xxx MWh by 2024. (2018 baseline <u>xxx</u> MWh) <b>DLI 5.</b> <i>Supported by a grant for solar PV rehabilitation, remote monitoring, and hybridization through Energy Management Systems.</i></p>	<p>2a. PLN Wilayah records and IVA reports</p>	<p>Logistics issues in remote regions delay installation and maintenance arrangements.</p>
<p><b>Output 3:</b> Institutional capacity strengthened and social monitoring</p>	<p><b>3a.</b> Asset and waste management improved, with 90% of used PLN-owned equipment in Kalimantan, Maluku and Papua included in the disposal inventory as of end-2019 safely disposed by 2025 (2018 baseline: 0%) <b>DLI 6</b></p>	<p>3a, 3b. PLN Wilayah records and IVA reports</p>	<p>Undue delays in government approval processes.</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
enhanced.	<p><b>3b.</b> At least one participatory workshop a year per each of PLN's Area offices, with a minimum of 30% female participation for each workshop, for consumer education on safe and productive energy use (baseline: 0 workshop). <b>DLI 7</b><sup>[5]</sup> To be assisted by resource person(s) from grant.</p> <p><b>3c.</b> Annual report on social impact of electrification with data disaggregated by sex published by end of 2022 (2018 baseline: no annual reporting)</p>	3c. PLN-DIVCOM and IVA reports	.
<p><b>Key Activities with Milestones</b></p> <p><b>Output 1. Power distribution network strengthened and expanded</b></p> <p>1.1. Identify/target unconnected poor female-headed and male-headed households (end-2019 on)</p> <p>1.2. Expand/strengthen the medium and low voltage distribution network (2020 on)</p> <p>1.3. Conduct substation upgrades/extension/ automation (land acquisition excluded) (2020 on)</p> <p>1.4. Install distribution transformers, service connections and feeders (2020 on)</p> <p>1.5. Install digital pre-paid meters and conduct training of PLN operational staff (2020 on)</p> <p>1.6. Conduct consultations with local communities, including women representatives (2020 on)</p> <p><b>Output 2. Clean energy use increased</b></p> <p>2.1 Map, identify and target communities for solar energy plants (&lt;10MW) and micro/pico hydro &lt;1 MW (late 2019-on)</p> <p>2.2 Conduct arrangements for PLN maintenance and installation of solar plants and/or required components (2020 on)</p> <p>2.3 Conduct arrangements with independent power producers for renewable energy supply (2020 on)</p> <p>2.4 Hold consultations with local communities, including women representatives (2020 on)</p> <p><b>Output 3. Institutional capacity strengthened and social monitoring enhanced</b></p> <p>3.1. Implement the package of actions for waste management improvement (inventory, approval, disposal) (2019 on)</p> <p>3.2. Conduct training of relevant PLN staff and households (including female-headed households) on pre-paid meters, safe and productive energy use, and social impact monitoring with support from resource persons (funded by grant) (2020 on)</p>			
<p><b>Inputs (Financing Plan): Total: \$2,070 million</b></p> <ul style="list-style-type: none"> <li>• From PLN: \$1,470 million (71%) including state capital injection and possible partners</li> <li>• From ADB \$600 million (29%) + \$3-4 million CEFPP and JFPR grants (proposed)</li> </ul>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not applicable</p>			

ADB = Asian Development Bank, CEFPP = Clean Energy Financing Partnership Facility, ckm = circuit kilometer; DIVCOM = Division of Communication and Corporate Social Responsibility, DLI = disbursement-linked indicator, IVA = independent verification agent, JFPR = Japan Fund for Poverty Reduction, MW = megawatt, MWh = megawatt-hours, PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), PV = photovoltaic (system), RUPTL = Electricity Power Supply Business Plan (*Rencana Usaha Penyediaan Tenaga Listrik*), SILM = PLN's Management Reporting Information System (*Sistem Informasi Laporan Manajemen*).

Notes:

<sup>[1]</sup> The proportion of female-headed households is highly variable at village and subdistrict level (from 3% to around 25%, as found by the ADB-PLN Reconnaissance Missions). The average is estimated by the government's database at 15% for the nine provinces; however, this includes poor, not so poor (i.e., those also above the poverty line), connected, non-connected, urban, and rural households. In poor rural areas, two factors make the share of female-headed households low: (i) traditions such as dowry repayment tend to keep couples from divorcing, unlike urban areas where divorce or separation is much more acceptable, and (ii) local governments—especially those in remote poor areas – are usually reluctant to acknowledge that a household is headed by a woman, as long as the husband is still living. While the Indonesian Central Statistical Office (BPS) defines a female-headed household as one where a woman is the family breadwinner or is considered the head of the family, in practice, local government officials classify a household as female-headed only when the woman is widowed or divorced. The RBL Program has to use this local government definition, as data based on this is regularly updated and available to PLN and local government. Thus, a conservative estimate and minimum target need to be taken regarding the share of female-headed households.

<sup>[2]</sup> To be partially funded by a grant. The actual number of poor households to be connected depends on the funds received. Poor households are identified by PLN and local governments by means of the yearly updated poverty

database (“Unified Database”) maintained by the National Team for Acceleration of Poverty Reduction (TNP2K - *Tim Nasional Percepatan Penanggulangan Kemiskinan*). The updates by local government are provided to PLN, as these poor households are entitled to receive subsidies for electricity tariffs.

<sup>[3]</sup> ADB is seeking grant funding for the social impact study.

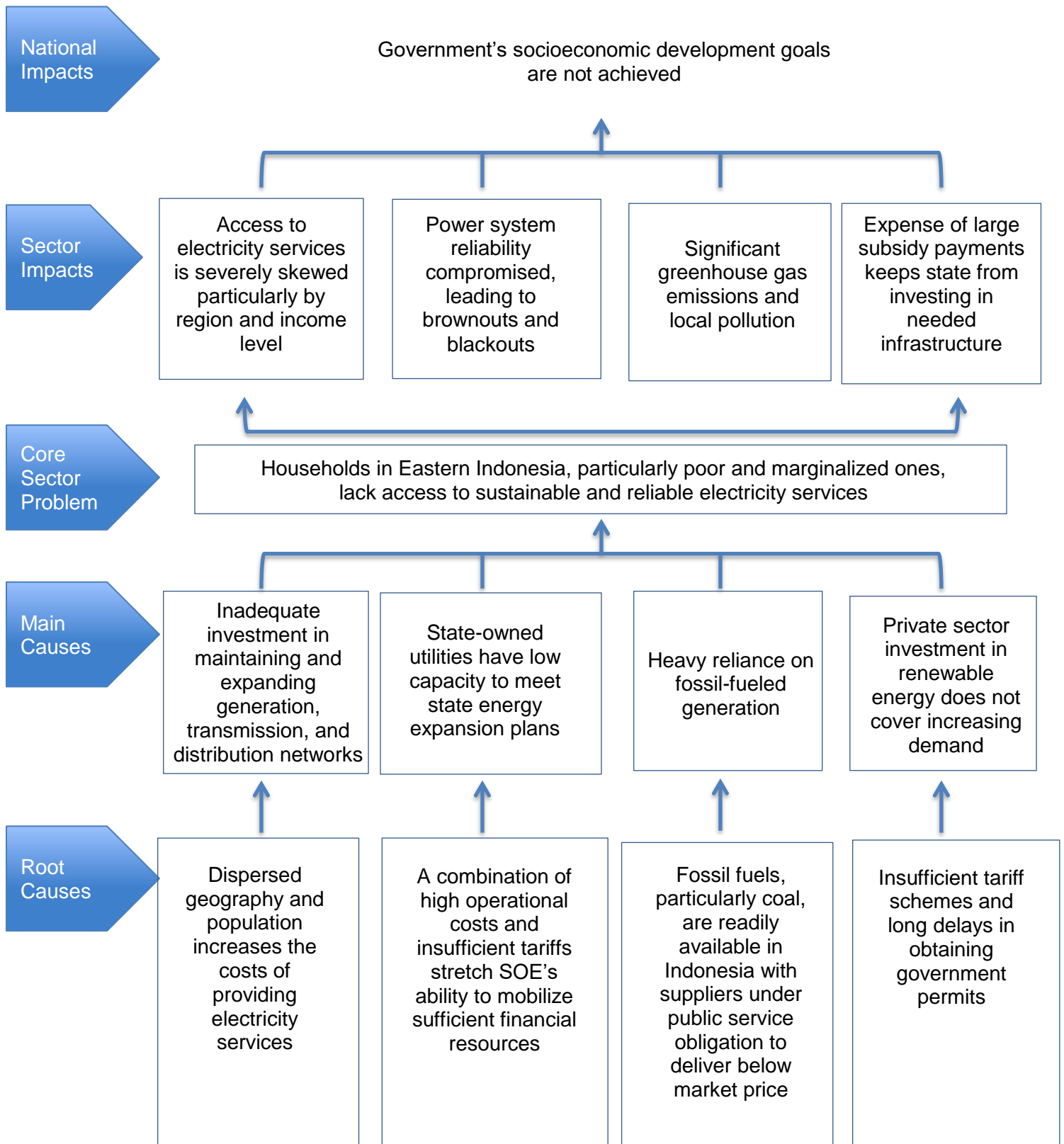
<sup>[4]</sup> To exclude land acquisition.

<sup>[5]</sup> Female participation is at a minimum of 30% because village/district officials who are mostly men must also be included in the workshops.

<sup>a</sup> Perusahaan Listrik Negara (PLN), 2018. Rencana Usaha Penyediaan Tenaga Listrik (RUPTL). (Electricity Power Supply Business Plan). Jakarta: PLN

Sources: ADB and PLN staff estimates.

## PROBLEM TREE



## INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Indonesia	Program Title:	Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program (EGDP II), Kalimantan
Lending/Financing Modality:	Results-based lending	Department/Division:	Southeast Asia Department Energy Division

### I. POVERTY IMPACT AND SOCIAL DIMENSIONS

#### A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

Indonesia's ability to harness and manage sustainable energy sources is a critical prerequisite for the country to continue its growth trajectory. The Government of Indonesia's National Medium-Term Development Plan (*RPJMN*) 2015–2019 aims to reduce poverty rates to 7%–8% by 2019, and enhance domestic energy security, by expanding energy infrastructure and investments, increasing energy efficiency and accessibility, and diversifying the energy mix with new and renewable sources. The program is aligned with ADB's country partnership strategy 2015–2019 for Indonesia, the Indonesia Energy Sector Assessment, Strategy and Road Map (ADB, 2016),<sup>1</sup> and the Energy Sector White Paper supporting the RPJMN.<sup>2</sup> The program is also aligned with ADB's *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*, which emphasizes inclusive economic growth and infrastructure development and *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*, on addressing remaining poverty and reducing inequalities, tackling climate change, and accelerating progress in gender equality.

#### B. Poverty Targeting

General Intervention  Individual or Household (TI-H)  Geographic (TI-G)  Non-Income MDGs (TI-M1, M2, etc.) The program focus includes geographic areas that are poor, remote, and left-behind. Poverty is also targeted at household level by supporting part of the connection and installation costs for poor households.

#### C. Poverty and Social Analysis

##### 1. Key issues and potential beneficiaries.

The nine target provinces in Kalimantan, Maluku, and Papua lag behind in key determinants of well-being, such as access to services, human development outcomes, and environmentally sustainable growth. The provinces also have inadequate access to electricity: with non-electrified or poorly electrified households accounting for 21% (North Kalimantan) to 56% (Papua). The primary beneficiaries of the program will be over 6 million new customers in Kalimantan, Maluku, and Papua who will benefit from electric lighting and appliances such as television, rice cookers, refrigerators, and hot water jugs. Children will be able to read and study in the evenings and their environment made healthier with the elimination of kerosene lamps and diesel generator fumes. Community centers, schools and health centers will benefit from electricity, which will provide extended evening hours, cold chain storage for essential drugs and vaccines, proper sterilization of medical instruments, small machines for home enterprises such as packaging and processing of food and non-timber forest products, and refrigeration facilities for food transport and sales.

##### 2. Impact channels and expected systemic changes.

The impact will be most marked on poor communities that lack access to affordable energy, are deprived of the means to improve their living conditions, and must use significant amounts of limited income on expensive and/or unhealthy forms of energy, such as diesel generators and kerosene lamps. Longitudinal studies elsewhere (e.g., Viet Nam) show that per capita income increases with electrification, while in the long term, children's school attendance improves. The Program will address the inability of poor communities to afford initial connection costs through a grant to cover incremental connection costs and employ off-grid and/or solar solutions to overcome the barriers of remoteness and distance from established grids. The RBL Program thus contributes towards Sustainable Development Goal 10 of reducing inequality by empowering and promoting the social, economic, and political inclusion of all (SDG Target 10.2).

##### 3. Focus of (and resources allocated in) the PPTA or due diligence.

Assessments to be undertaken include: (i) program technical soundness; (ii) financial and economic feasibility; (iii) environmental and social safeguards system assessments against applicable policy principles,<sup>3</sup> (iv) fiduciary aspects, including fund flow, program reporting, and DLI verification; (v) PLN's procurement systems; and (vi) social and gender assessments.

### II. GENDER AND DEVELOPMENT

#### 1. What are the key gender issues in the sector/subsector that are likely to be relevant to this project or program?

Low gender development indices (GDI) and gender empowerment measures (GEM) indicate that women in Kalimantan, Maluku, and Papua women are far behind men.<sup>4</sup> All provinces except Maluku are well below the national average in the gender development index (GDI). Papua, West Papua, East Kalimantan, North Kalimantan, and West Kalimantan have the lowest GDIs in Indonesia, while Papua, West Papua, East, and North Kalimantan

are among the six provinces with the lowest GEM in Indonesia. The 2014 Community-based Welfare Monitoring System Survey (SPKKBK)<sup>5</sup> across 17 provinces found that around one-quarter of households was headed by a woman. Since Marriage Law No. 1/1974 specifies men as household heads, women are often not recognized as household heads, leading to discrimination in their social and political life. The ADB Reconnaissance Missions found that only women who are widowed or divorced are recognized as heads of household. The SPKKBK showed that nearly half (49%) of families at the lowest welfare level are headed by women, usually poorly educated. Both men and women may be self-employed or employed as casual laborers or salaried workers. Proportionately more men engage in paid work than do women. The mission found electricity connection and installation costs to be two to three times the monthly budget of the poorest households.

2. Does the proposed program have the potential to make a contribution to the promotion of gender equity and/or empowerment of women by providing women's access to and use of opportunities, services, resources, assets, and participation in decision making?  Yes  No

Reliable, sustainable, and affordable electricity will significantly reduce the time and effort spent by women for domestic activities by reducing the labor required to collect water, and obtain and use other fuels, thereby increasing time for income-generating activities, family, and leisure. In the villages visited by ADB, women wanted electricity for productive activities. Energy provision is a critical input for women's empowerment and improved status. In Viet Nam and Bhutan,<sup>6</sup> electrification was shown to lead to time savings and improved time use by women for productive and educational activities, an enhanced women's role, and increased self-confidence, in part due to productive and educational activities (such as TV programs for women) made possible by electrification. Among households eligible for electrification, the program design prioritizes female-headed households.

3. Could the proposed program have an adverse impact on women and/or girls or widen gender inequality?  
 Yes  No

The program will impact positively on the whole population and will not widen gender inequality. On the contrary, it is expected to reduce the gaps between men and women in terms of time use, time poverty, and income.

4. Indicate the intended gender mainstreaming category:

GEN (gender equity)  EGM (effective gender mainstreaming)  
 SGE (some gender elements)  NGE (no gender elements)

The program has two DLIs linked to the empowerment of women. It is the first time gender mainstreaming has been introduced into ADB-PLN collaboration. The possibility of having the program categorized as 'Effective Gender Mainstreaming' with these 2 DLIs and proposed gender sensitive indicators in the DMF will be actively sought during due diligence.

### III. PARTICIPATION AND EMPOWERMENT

1. Who are the main stakeholders of the program, including beneficiaries and negatively affected people? Identify how they will participate in the program design.

Main stakeholders are the State Electricity Corporation (PLN), which is the executing and implementing agency of the program, the national government, local governments, independent power producers, as well as industrial and commercial establishments, and residential households. They are all potential beneficiaries resulting from a strengthened power grid in Kalimantan.

2. How can the program contribute (in a systemic way) to engaging and empowering stakeholders and beneficiaries, particularly, the poor, vulnerable and excluded groups? What issues in the program design require participation of the poor and excluded?

The stakeholders will be consulted through meetings and in interviews and surveys to increase awareness about the program and seek their inputs. Consultation with poor, vulnerable, and excluded groups (including female household heads) will focus on social issues that affect them, such as affordability of electricity connection and issues associated with environment and involuntary resettlement, if any.

3. What are the key, active, and relevant civil society organizations (CSOs) in the program area? What is the level of CSO participation in the program design?

Information gathering and sharing  Consultation  Collaboration  Partnership

Because the social benefits of the program are primarily indirect, CSOs relevant to social impact and development will have a limited role in the program; if any such CSOs express interest in being involved, the program will ensure that information flows are fully transparent and will seek their advice as appropriate.

4. Are there issues during program design for which participation of the poor and excluded is important? What are they and how will they be addressed?  Yes  No

During program design, poor households were consulted to assess the affordability of electricity connection and the pattern of household expenditures.

### IV. SOCIAL SAFEGUARDS

**A. Involuntary Resettlement Category**  A  B  C

1. Does the program have the potential to involve involuntary land acquisition resulting in physical and economic displacement?

Yes  No

The expansion of the distribution network usually involves (i) the installation of concrete poles using no more than 0.2 m<sup>2</sup> of land and (ii) the stringing of conductors possibly requiring the cutting/trimming of trees. Impacts of involuntary resettlement will be identified during program implementation.

2. What actions are required to address involuntary resettlement as part of the PPTA or assessment process?

Program safeguard system assessment and actions  None

**B. Indigenous Peoples Category**  A  B  C

1. Does the proposed program have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples?  Yes  No

While the general areas are known, the program's subprojects' sites for the expansion of the distribution network have not been selected and will be determined during program implementation. The program will not specifically target activities in areas (land or territory) occupied, owned, or used by indigenous peoples, and/or claimed as ancestral domain.

2. Does it affect the territories or natural and cultural resources indigenous peoples own, use, occupy, or claim, as their ancestral domain?  Yes  No

3. Will the program require broad community support of affected indigenous communities?  Yes  No

4. What actions are required to address risks to indigenous peoples as part of the PPTA or the program assessment process?

Program safeguard system assessment and actions  None

**V. OTHER SOCIAL ISSUES AND RISKS**

1. What other social issues and risks should be considered in the program design?

Creating decent jobs and employment  Adhering to core labor standards  Labor retrenchment

Spread of communicable diseases, including HIV/AIDS  Increase in human trafficking  Affordability

Increase in unplanned migration  Increase in vulnerability to natural disasters  Creating political instability

Creating internal social conflicts  Others, please specify \_\_\_\_\_

2. How are these additional social issues and risks going to be addressed in the program design?

The program will support the government's plan to expand access to electricity, including to poor households.

**VI. PPTA OR ASSESSMENT RESOURCE REQUIREMENT**

1. Do the terms of reference for the PPTA (or program assessments) contain key information needed to be gathered during PPTA or the program assessment process to better analyze (i) poverty and social impact; (ii) gender impact, (iii) participation dimensions; (iv) social safeguards; and (v) other social risks. Are the relevant specialists identified?

Yes  No

2. What resources (e.g., consultants, survey budget, and budget for workshop(s)) are allocated for conducting poverty, social and/or gender analyses, and participation plan during the PPTA or the program assessments?

Staff resources comprise an environmental specialist, social specialist, and gender specialist. Additionally, consultant inputs will be utilized. These experts will conduct environmental, poverty, social and gender analyses, prepare a program safeguard system assessment report as required, and complete initial and summary poverty and social assessments.

<sup>1</sup> <https://www.adb.org/sites/default/files/institutional-document/189713/ino-energy-asr.pdf>

<sup>2</sup> ADB and Bappenas, 2015. <https://www.adb.org/sites/default/files/project-document/176267/ino-energy-white-paper.pdf>

<sup>3</sup> ADB, 2009. *Safeguard Policy Statement*. Manila.

<sup>4</sup> GDI measures life expectancies, expected and mean years of schooling and income per capita. GEM measures women in parliamentary representation, female share of managerial, professional, administrative, technical positions, and women's share of earned income. Ministry of Women's Empowerment & Child Protection and BPS, 2016. *Pembangunan Manusia Berbasis Gender 2016*. Jakarta. Data updates from BPS-Indonesia. <https://www.bps.go.id/>

<sup>5</sup> SMERU Research Institute & PEKKA National Secretariat, 2014: *Menguak Keberadaan Dan Kehidupan Perempuan Kepala Keluarga: Laporan Hasil Sistem Pemantauan Kesejahteraan Berbasis Komunitas (SPKBK-PEKKA)*. Jakarta. Women head of households as used by SPKBK-PEKKA are those who carry out roles and responsibilities as the family's breadwinners, household managers, guardians of family survival and decision makers (<https://www.pekka.or.id/>). However, in practice, local government officials apply the term only when the woman is widowed or divorced. This local definition has to be used, as data on it is regularly updated and available to PLN. The proportion of females among household heads is variable and may be as low as 3% in some villages.

<sup>6</sup> Khandker, S.R., Barnes, D.F., Samad, H., and Minh, N.H., 2008. *Welfare Impacts of Rural Electrification: Evidence from Vietnam*. World Bank, Washington DC; and Asian Development Bank, 2010. *Asian Development Bank's Assistance for Rural Electrification in Bhutan—Does Electrification Improve the Quality of Rural Life?* Manila.