

PROGRAM EXPENDITURE AND FINANCING ASSESSMENT

1. The program expenditure and financing assessment reviews the extent to which the proposed Sustainable Energy Access in Eastern Indonesia—Electricity Grid Development Program has a clearly defined expenditure framework for the Asian Development Bank (ADB) to support with results-based lending (RBL).

A. Expenditure Framework

2. Each year, the State Electricity Corporation (*Perusahaan Listrik Negara* [PLN]) prepares a 10-year Electricity Power Supply Business Plan (*Rencana Usaha Penyediaan Tenaga Listrik* [RUPTL]), which guides the development of power infrastructure to meet the demand for electricity. The RUPTL covers electricity demand load forecasts per province; generation capacity expansion plans; and development plans related to transmission, substations, and distribution. The forecasts project the electricity needed to support the Government of Indonesia's economic growth targets, considering population growth. Generation capacity is planned to meet both electricity demand and the reserve margin at the lowest possible cost. The planned development of the transmission system will strike a balance between generation capacity and power requirements to meet specific reliability and quality criteria.

3. PLN's RUPTL, 2017–2026 includes an overview of Eastern Indonesia's projected transmission, distribution, and generation investment needs, which total \$21,747.6 million. The proposed RBL will cover the distribution investment needs in Sulawesi and Nusa Tenggara (SNT) during 2017–2021, the engineering, procurement, and construction (EPC) costs of which the RUPTL estimates at \$1,214.5 million. ADB has also estimated other expenditure items necessary to make the program operational (e.g., costs of land acquisition, permits, consultants, project management, and overhead) based on similar, recent ADB-funded projects. The total cost of the RBL program is estimated at \$1,830.3 million.

4. The expenditure framework of an RBL program makes the program operational by ensuring that the priorities and costs are realistic, and may be supported by a medium-term expenditure framework, which in turn may be part of a sector expenditure framework. The RBL program supports PLN's power grid development program in SNT, the cost of which is included in the expenditure plan, 2017–2021. The total cost of the power grid development program covering transmission and distribution in SNT is expected to amount to \$5,057.3 million in 2017–2021, of which EPC costs account for \$3,385.1 million.

Table 1: Summary of Program Expenditure Framework, 2017–2021

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

PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.

Note: Numbers may not sum precisely because of rounding.

^a Based on 10% estimated physical contingencies (typical for this type of project).

^b Based on Asian Development Bank forecast domestic and international cost escalation factors.

Sources: Asian Development Bank and PLN estimates.

Table 2: Annual Breakdown of Engineering, Procurement, and Construction Costs, 2017–2021
(\$ million)

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

Source: Calculated based on State Electricity Corporation (*Perusahaan Listrik Negara* [PLN]), 2016. *Electricity Power Supply Business Plan (RUPTL), 2017–2026*. Jakarta.

5. **Effectiveness.** In line with the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional* [RPJMN]), 2015–2019, the government aims to expand energy infrastructure by increasing investment in the energy sector. The program will support this objective by strengthening the power grid in Eastern Indonesia, focusing on the distribution system, and improving PLN's implementation capacity. The resources will thus directly address energy security to achieve the program's development outcome of improving the regional power transmission and distribution network. The RUPTL, 2017–2026, which is the foundation for the program, is based on detailed calculations of electricity demand and the subsequent transmission and distribution requirements. The calculations were carried out in line with internationally accepted good practice. Thus the identified expenditures correspond with the planned results, and hence are likely to achieve the expected program results.

6. **Efficiency and economy.** The component-specific investment needs projected for the program are based on a conventional technical design of medium- and low-voltage works that PLN deems as making the best use of available funds and being most cost-effective in terms of achieving expected results. The distribution design, involving mostly overhead construction (with some underground in specific urban areas), generally follows standard international practice; it is expected to reduce overall distribution losses (efficiency gains) and provide customers with a more reliable and high quality power supply. While the private sector plays an important role in energy generation in Indonesia, PLN holds an actual monopoly over the medium- and low-voltage distribution system and is therefore the primary agency responsible for network expansion. Such tasks are thus best placed with PLN, as outsourcing them is not an option.

7. **Adequacy.** PLN projected the EPC costs based on detailed calculations of electricity demand and the resulting distribution requirements, as expressed in the technical design. PLN technical experts developed the technical program design generally in accordance with internationally accepted good practice. ADB calculated the additional cost items required to make the program fully operational (i.e., land acquisition, permits, consultants, project management, and overhead), based on best estimates and taking into account experience from previous operations in Indonesia.¹ Based on a review of the methodology used to estimate the expenditures and benchmarking exercise against market prices, ADB considers the program expenditures realistic in terms of prioritization and coverage. The allocation of resources for the

¹ The RUPTL only includes capital expenditure projections (physical assets). Based on ADB's experience with the Power Transmission Improvement Sector Project in Indonesia, which was implemented during 2002–2014, capital expenditure was broken down into civil works (25%) and equipment (75%). Furthermore, additional cost items were necessary for both transmission and distribution.

RBL program as a whole and its components was calculated to match the funding required to generate the expected results. As PLN has adequate implementation capacity, absorption of funds is unlikely to become a challenge.

B. Financing Plan

8. PLN has asked ADB to provide a direct loan guaranteed by the government, in the amount of \$600 million from ADB's ordinary capital resources to help finance PLN's broader program expenditure for strengthening and developing power transmission and distribution systems in SNT during 2017–2021. The ADB loan represents 11.9% of the broader transmission and distribution needs, and 32.8% of the overall distribution needs of SNT. ADB financing is not linked to certain transactions, but is an integral part of the program's overall financing plan. ADB is also prepared to consider scaling up its support for PLN's Eastern Indonesia program with a subsequent RBL program to cover other *wilayahs* (regional offices), as defined by PLN. The latest financing plan is in Table 3.

Table 3: Program Financing Plan

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

PLN = State Electricity Corporation (*Perusahaan Listrik Negara*), RBL = results-based lending.

^a From PLN's internal cash flows and equity injections from the Government of Indonesia.

^b Includes possible funding from the World Bank, the Islamic Development Bank, and other multilateral and bilateral financial institutions. KfW is considering up to \$250 million in cofinancing, subject to further review and approvals. If partner funding is insufficient, PLN is expected to secure the necessary funding from its internal cash flows or additional equity injections from the government.

Sources: Asian Development Bank and PLN estimates.

9. **The financial performance of the State Electricity Corporation (*Perusahaan Listrik Negara*), 2011–2015.**² The quantity of electricity sold by PLN grew from 158.0 terawatt hours (TWh) in 2011 to 202.8 TWh in 2015 at a compound annual growth rate (CAGR) of 6.4%. During this period the average tariff increased from 706 IDR/kWh to 1,035 IDR/kWh (10.0% CAGR). PLN's revenues from sale of electricity grew from IDR 112.8 trillion in 2011 to IDR 209.8 trillion in 2015 (16.8% CAGR). However, revenues were insufficient to cover operating costs and the Gol continued to heavily subsidize electricity tariffs. In 2015, the tariff subsidy was IDR 56.6 trillion or 20.6% of total revenues of IDR 273.9 trillion.³ However, this is significantly lower than the subsidy in 2011 of 44.8%. Operating profit increased from IDR 22.4 trillion in 2011 to IDR 27.6 trillion in 2015 (5.4% CAGR). Net operating profit (after interest and taxes) rose from IDR 5.4 trillion to IDR 15.6 trillion mainly due to tax benefits of IDR 18.6 trillion in 2015. Net profit margin increased during this period from 2.6% in 2011 to 5.7% in 2015. PLN's total long term assets rose by 203% from IDR 409.5 trillion in 2011 to IDR 1,240.0 trillion in 2015 mainly due to revaluation of assets in 2015. PLN's total installed generation capacity, including leased assets, increased by 35% from 39,099 MW to 52,889 MW over the same 5-year period. The asset growth was financed from a mix of lease liabilities, bonds and loans. Total financing increased from IDR 222.7 trillion in 2011 to IDR 375.3 trillion in 2015. The foreign currency denominated financing formed a significant proportion of the liabilities in 2015, accounting for 80% of the total IDR 375.3 trillion debt and lease liabilities. Table 4 summarizes the key financial indicators for the past five years.

² Based on PLN's audited financial statements.

³ Includes connection fees and other revenues.

10. **The financial projections of the State Electricity Corporation (*Perusahaan Listrik Negara*), 2016–2021.**⁴ PLN made its financial projections based on several assumptions as to future developments (macroeconomics, sales, fuel consumption, fuel mix, average fuel prices, tariff increases and margins, and government equity injections). Several scenarios were quantified in a Scenario Planning Model, whose principal input is the RUPTL for the 2015–2024 capacity expansion plan (and its companion plans for transmission and distribution investment). The RUPTL reflects the government directive for PLN to build 35 gigawatts (GW) of power plant capacity during 2015–2019 to meet the domestic electricity demand. Table 5 summarizes the key financial indicators based on the baseline scenario projections for 2016–2021.

11. From the baseline scenario, PLN will have difficulty meeting the DSCR during most of the forecast period due the high debt servicing and lease liabilities. It marginally complies with the SFR and will fall below the minimum ratio in 2017. However, the debt/equity ratio complies with the covenant ratio due to the asset revaluation in 2015. This clearly demonstrates that PLN lacks the financial capacity to undertake the government’s planned 35 GW investment program. PLN’s capacity to raise additional financing for its planned investment program will be severely limited by its inability to meet key financial covenant ratios, particularly the DSCR, going forward. To address this, the government is providing guarantees, tariff subsidies and/or equity injections to enable PLN to finance its capital expansion program while meeting its financial covenants. The government has taken several measures to strengthen PLN’s financial ability to undertake this planned expansion, and to improve the investment climate for the private sector. The government increased electricity tariffs in 2014, and instituted automatic price adjustments on tariffs for all but the poorest households in 2015. Further, the government infused nearly \$500 million in equity to PLN in 2015 and \$1.8 billion in 2016. It is also piloting a new subsidy setting approach that will rely on performance to incentivize PLN to operate more efficiently to capture additional savings. In 2015, the government passed regulations allowing PLN to borrow directly from bilateral and multilateral agencies against a sovereign-backed guarantee. It is estimated that more than IDR 200 trillion of additional subsidy will be required to ensure PLN meets all financial covenants (particularly the DSCR) during the next 5 years (2016–2020) and to maintain PLN’s financial capacity to undertake the planned capital investment program. The substantial amount of tariff subsidy required over the 5-year period 2016–20 will test Gol’s resolve to provide funding support to PLN.

12. In February 2016, Moody’s Investors Service affirmed PLN’s credit ratings of Baa3, with a stable outlook.⁵ The rating is closely linked to the Indonesian government’s credit quality, which owns the company 100% and is expected to provide very high support. Given the government’s full ownership, it closely directs the activities of PLN. It also provides a strong track record of support, as shown by its previous actions that include: (i) guaranteeing about 22% of PLN’s reported borrowing as of end-September 2015 – excluding lease liabilities relating to power purchase agreements and energy sales contracts, (ii) direct lending to PLN via two-step loans or other government loans; and (iii) providing comfort letters to sponsors of certain independent power projects (IPPs) for which PLN is the sole offtaker. PLN will remain strategically important as Indonesia’s only vertically integrated electric utility. PLN plays an important role in the development of the country’s electricity sector, as reflected by the government’s heavy involvement in its operations and funding, including the provision of subsidies which support PLN’s financial viability and operational soundness.⁶ Moody’s also noted that PLN’s aggressive

⁴ PLN. 2016. *Corporate Options Study 2016–2024: Financial Analysis*. 19 February.

⁵ Moody’s Investors Service. Credit Opinion: Perusahaan Listrik Negara (P.T.) *Global Credit Research*. 26 February 2016.

⁶ The electricity subsidy, based on a decree that took effect on 1 January 2015, is being gradually phased out on the basis of consumer class until 2018, when all but the poorest households will receive electricity at market prices.

capital spending program, although consistent with some national strategic objectives, provides limited scope for metrics to improve in the medium term. Regarding ongoing major programs to add electrical capacity, which substantially increase PLN's capital expenditure requirements, Moody's noted that, until the programs are completed (in 5–8 years), PLN will experience pressure on its key credit metrics. However, it has a track record of managing execution risks well and is expected to continue managing these risks competently. In 2014, PLN moved into the top 500 companies in the Fortune 500 list, and became the world's 477th largest corporation by revenue.

Table 4: State Electricity Corporation Financial Indicators, 2011–2015
(Rp billion)

	2011	2012	2013	2014	2015
Income Statement Summary					
Total operating revenues	208,018	232,656	261,847	292,721	273,900
Total operating expenses	185,640	203,115	220,911	246,910	246,262
Operating profits	22,378	29,541	40,936	45,811	27,637
Net income after tax	5,426	3,206	-26,236	11,742	15,585
Balance Sheet Summary					
Total non-current assets	409,530	472,066	505,382	518,235	1,239,976
Total current assets	66,923	77,310	84,837	85,424	85,424
Total assets	476,453	549,376	590,219	539,521	603,659
Total equity	154,683	159,270	150,331	187,174	164,671
Total non-current liabilities	258,219	315,503	350,582	266,818	351,460
Total current liabilities	63,550	74,603	89,306	85,529	87,558
Total liabilities and equity	476,453	549,376	590,219	539,521	603,659
Cash Flow Summary					
Net cash flow from operations	31,622	30,464	38,175	39,252	35,173
Net cash flow from investing activities	-40,759	-41,760	-34,987	-30,399	-38,297
Net cash flow from financing activities	11,477	11,847	-331	-7,524	-754
Ending cash balance	22,088	22,640	25,530	27,112	23,596
ADB Covenant Ratios					
DSCR \geq 1.35 up to 2017, 1.5 thereafter	1.8	1.6	1.8	1.3	1.1
SFR \geq 15%	89.8%	39.6%	80.5%	57.0%	48.9%
DER \leq 3.0	1.48	1.79	2.61	2.07	0.47
Other Financial Ratios					
Current ratio	1.1	1.0	0.9	1.0	0.7
Net profit margin	2.6%	1.4%	-10.0%	4.0%	5.7%
Return on assets		0.2%	-1.2%	0.5%	0.4%
Return on equity		0.5%	-4.2%	1.7%	0.8%
Operating ratio	89.3%	86.4%	81.1%	85.8%	83.1%

() = negative, ADB = Asian Development Bank, DER = debt–equity ratio, DSCR = debt service coverage ratio, SFR = self-financing ratio.

Sources: Government of Indonesia; State Electricity Corporation (*Perusahaan Listrik Negara*) audited financial statements.

13. **Adequacy.** To the extent that the financing plan is realized as outlined, including financing from various sources, it matches the projected and calculated investment needs for the RBL

program. This should be sufficient to ensure that the planned results are achieved within the resource envelope.

14. **Predictability and sustainability.** The outlined RBL program financing plan is expected to be fully predictable for the initial funding provided by ADB; however, if PLN fails to meet agreed disbursement-linked indicators, funding would not be available until the conditions for disbursement are met. PLN is expected to generate the required internal resources and cash flows as per the financing plan (34%). The government, which is expected to finance 25.5% of the program, approved state capital injections of Rp23.56 trillion in the 2016 state budget. As stated in para. 11, the government will support PLN in financing the 35 GW expansion and subsequent investment programs by providing guarantees and tariff subsidies (and equity injections), which will enable PLN to finance this major investment program. With the support from the Government, funding for the broader program appears both sustainable and predictable. The “Other” category accounts for 15.3% of total financing, of which the sources are currently undefined, adding some uncertainty to the program’s sustainability.

Table 5: State Electricity Corporation Financial Projections, 2016–2021
(Rp billion)

	2016	2017	2018	2019	2020	2021
Income Statement Summary						
Total operating revenues	295,275	327,032	363,518	403,896	460,037	527,893
Total operating expenses	275,240	298,054	316,107	353,939	374,267	413,081
Operating profits	20,034	28,978	47,411	49,957	85,770	114,811
Net income after tax	-24,198	-18,410	-11,836	-25,388	-14,051	-9,849
Balance Sheet Summary						
Total non-current assets	1,350,937	1,468,418	1,606,580	1,742,470	1,907,164	2,065,662
Total current assets	82,418	78,772	81,593	85,978	91,298	98,883
Total assets	1,433,355	1,547,189	1,688,173	1,828,448	1,998,462	2,164,545
Total equity	794,608	783,197	778,362	758,974	749,923	745,074
Total non-current liabilities	464,820	572,435	697,860	832,732	1,008,987	1,198,739
Total current liabilities	173,927	191,557	211,951	236,742	239,552	220,732
Total liabilities and equity	1,433,355	1,547,189	1,688,173	1,828,448	1,998,462	2,164,545
Cash Flow Summary						
Net cash flow from operations	64,900	29,313	44,003	35,506	60,124	86,328
Net cash flow from investing activities	-132,511	-128,612	-126,038	-112,212	-105,693	-112,176
Net cash flow from financing activities	75,554	69,313	75,578	52,953	46,691	49,250
Ending cash balance	31,539	25,000	25,000	25,000	25,000	25,000
ADB Covenant Ratios						
DSCR >= 1.35 up to 2017, 1.5 thereafter	0.8	0.9	1.2	1.0	1.2	1.2
SFR >= 15%	60.1%	5.0%	25.2%	15.7%	15.5%	7.4%
DER <= 3.0	0.59	0.75	0.93	1.16	1.40	1.62
Other Financial Ratios						
Current ratio	0.5	0.4	0.4	0.4	0.4	0.4
Net profit margin	-8.2%	-5.6%	-3.3%	-6.3%	-3.1%	-1.9%
Return on assets	-0.4%	-0.3%	-0.2%	-0.4%	-0.2%	-0.1%
Return on equity	-0.8%	-0.6%	-0.4%	-0.8%	-0.5%	-0.3%
Operating ratio	93.2%	91.1%	87.0%	87.6%	81.4%	78.3%

(-) = negative, ADB = Asian Development Bank.

Sources: ADB and State Electricity Corporation (*Perusahaan Listrik Negara*).