



Report and Recommendation of the President to the Board of Directors

Project Number: 50156-001
November 2016

Proposed Loan and Administration of Loans PT. Supreme Energy Muara Laboh Muara Laboh Geothermal Power Project (Indonesia)

This is the abbreviated version of the document that excludes commercially sensitive and confidential business information that is subject to exceptions to disclosure set forth in ADB's Public Communications Policy 2011.

Asian Development Bank

CURRENCY EQUIVALENTS

(as of 31 October 2016)

Currency unit	–	rupiah (Rp)
Rp1.00	=	\$0.0001
\$1.00	=	Rp13,050

ABBREVIATIONS

ADB	–	Asian Development Bank
CTF	–	Clean Technology Fund
GFF	–	Geothermal Fund Facility
IPP	–	independent power producer
PLN	–	Perusahaan Listrik Negara (national power utility)
PPA	–	power purchase agreement
MEMR	–	Ministry of Energy and Mineral Resources
S&P	–	Standard & Poor's
SEML	–	PT. Supreme Energy Muara Laboh

WEIGHTS AND MEASURES

GW	–	gigawatt
km	–	kilometer
MW	–	megawatt

NOTES

- (i) The fiscal year of Supreme Energy Muara Laboh ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 50156-001	
Project Name	Muara Laboh Geothermal Power Project	Department /Division	PSOD/PSIF2
Country	Indonesia		
2. Sector		ADB Financing (\$ million)	
✓ Energy	Renewable energy generation - geothermal		70.00
		Total	70.00
3. Strategic Agenda		Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Mitigation (\$ million)	70.00
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns Natural resources conservation	CO ₂ reduction (tons per annum)	471,240
		Climate Change impact on the Project	Low
4. Drivers of Change		Gender Equity and Mainstreaming	
Partnerships (PAR)	Bilateral institutions (not client government) Commercial cofinancing Official cofinancing Private Sector	No gender elements (NGE)	✓
Private sector development (PSD)	Promotion of private sector investment		
5. Poverty and SDG Targeting		Location Impact	
Geographic Targeting	No	Rural	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG7		
6. Nonsovereign Operation Risk Rating			
Entity Name	Final Project Rating	Facility Risk Rating	
PT Supreme Energy Muara Laboh - A-Loan			
PT Supreme Energy Muara Laboh - CTF			
PT Supreme Energy Muara Laboh - LEAP			
7. Safeguard Categorization		Environment: A	Involuntary Resettlement: B
		Indigenous Peoples: C	
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		70.00	
Nonsovereign LIBOR Based Loan: Ordinary capital resources		70.00	
B-Loans		0.00	
None		0.00	
Official Cofinancing^a		39.25	
Clean Technology Fund		19.25	
Leading Asia's Private Sector Infrastructure Fund		20.00	
Others^b		481.65	
Total		590.90	

^a Concessional financing from external sources.

^b Derived by deducting ADB financing, B Loans and Official Cofinancing from Project Total Cost.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan of \$70 million to PT. Supreme Energy Muara Laboh (SEML) for the Muara Laboh Geothermal Power Project in Indonesia. The report also describes the (i) proposed administration of a loan of up to \$20 million, to be provided by the Leading Asia's Private Sector Infrastructure Fund¹ (LEAP); and (ii) proposed administration of a loan of up to \$19.25 million, to be provided by the Clean Technology Fund (CTF).² If the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the administration of the LEAP and CTF loans.

II. THE PROJECT

A. Project Identification and Description

1. Project Identification

2. **Growing demand for clean power generation.** In 2014, Indonesia was the largest Southeast Asian economy, with its gross domestic product estimated at \$888.5 billion. The economy experienced consistent growth after the Asian financial crisis, averaging around 5% per year. Power infrastructure, however, is struggling to keep up with the strong economic performance: the Ministry of Energy and Mineral Resources (MEMR) estimates that power demand will increase by 8.5% per annum under the current economic forecasts, resulting in a shortage of about 35 gigawatts (GW) before 2020, which could undermine the country's growth potential.

3. To cope with the predicted electricity shortages over the medium term, the Government of Indonesia introduced various fast-track programs to accelerate the development of power generation. While the largest share of generation is still expected to rely on fossil fuels such as coal and gas, the government is encouraging the greening of the generation mix; its goal is to boost the share of energy supplied from renewable energy from 12% in 2013 to 23% in 2025.³ This goal will help meet Indonesia's commitment to curbing greenhouse gas emissions by 29% by 2030 and promote a more sustainable path for economic growth.⁴

4. Indonesia is endowed with several renewable energy resources, including wind, solar, geothermal, and biomass. Geothermal power offers some unique benefits to support sustainability in Indonesia. First, geothermal power comes from thermal energy that is naturally generated in the earth and most accessible and abundant near tectonic plate boundaries.⁵ Thanks to its location at the edge of the Pacific plate, Indonesia is estimated to have over 29,000 megawatts (MW) of geothermal resources (equivalent to 40% of the global resource).⁶ Second, geothermal power plants are generally reliable and demonstrate high availability and capacity factors. Thus, at scale, they can contribute a sizable portion to baseload power needs while leaving a much smaller carbon footprint than an equivalent fossil-fuel-based capacity.

¹ Financing partner: Japan International Cooperation Agency.

² Financed by the ADB's Clean Technology Fund. <http://www.climateinvestmentfund.org>.

³ ADB. 2015. Summary of Indonesia's Energy Sector Assessment. *ADB Papers on Indonesia, No. 9*. Manila.

⁴ Government of Indonesia. 2015. *Intended Nationally Determined Contribution*. Jakarta.

⁵ In a geothermal power plant, high-pressure steam from a production wellhead powers a turbine to generate energy.

⁶ Ministry of National Development Planning (BAPPENAS). 2013. *The Indonesia Geothermal Handbook*. Jakarta.

5. **Fostering the development of geothermal resources.** Indonesia has an identified geothermal project pipeline of 3,200 MW, which accounts for 24% of the capacity of geothermal projects planned globally.⁷ In 2016, only 1.3 GW or 5% of the country's total geothermal potential was developed.⁸ Indonesian geothermal regulation has substantially improved since 2003 but translating the immense geothermal opportunity into reality is challenging, mainly because of the risks of proving and managing the geothermal resource.

2. Project Design

6. The project will develop geothermal steam resources through production and injection facilities in the Liki Pinangawan Muara Laboh concession area and construct, operate, and maintain a single power generation unit with a capacity of about 80 MW. The concession is located in the South Solok Regency, 150 kilometers (km) southeast of Padang in the province of West Sumatra. The project will be developed and implemented under a 30-year PPA with PLN. It is intended for baseload operation. PLN will build 80 km of transmission lines from the plant site to two 150-kilovolt substations near Muara Laboh and Sungai Rumbai. The substations will connect power from the generation unit to the Sumatra grid through an existing 275-kilovolt transmission line.

[CONFIDENTIAL INFORMATION DELETED]

7. The project had been prioritized under PLN's electricity supply business plan⁹ and is also part of the third accelerated development program launched by the government in 2015. The project benefits from 20-year support from the Ministry of Finance, as stipulated under a business viability guarantee letter.

3. The Borrower and Sponsors

8. The borrower will be SEML, an Indonesian project company owned by three sponsors: Engie (previously GDF Suez, rated *A* by Standard & Poor's [S&P] and *A2* by Moody's); Sumitomo Corporation (rated *A-* by S&P and *Baa1* by Moody's); and PT. Supreme Energy¹⁰ (not rated). The respective shareholding percentages are 35%, 35%, and 30%. The project benefits from strong contractual arrangements with creditworthy, investment-grade parties: the government, rated *BB+* by S&P and *Baa3* by Moody's; and PLN, rated *BB* by S&P and *Baa3* by Moody's. The sponsors bring a valuable combination of technical skills, geothermal expertise, and independent power producer (IPP) development experience to the power sector in Indonesia.

⁷ Bloomberg New Energy Finance. 2013. *Q2 2013 Geothermal Market Outlook*. New York. This includes projects that were publicly announced, were permitted, began drilling, and/or are under construction.

⁸ Energy Information Administration, <http://www.eia.gov/todayinenergy/detail.cfm?id=23392> (accessed 6 September 2016).

⁹ The Electricity Law requires PLN to prepare an annual electricity supply business plan that is based on the National Energy Plan and the medium-term power development plan of MEMR. The latest electricity supply business plan covers the years 2016–2025.

¹⁰ Supreme Energy was established in 2007 to develop three geothermal concessions on the island of Sumatra. One of the founders and majority owner, Supramu Santosa, is a pioneer of geothermal development in Indonesia. He was the founder of Star Energy, the owner of Wayang Windu, a 117MW geothermal power development operating in West Java since 1999. PT Supreme Energy is also one of the sponsors of Rantau Dedap geothermal power project that ADB supported through a CTF loan for explorations.

9. Engie's ownership is exercised through entities established in intermediate jurisdictions.¹¹ A review of the entities does not give ADB cause to believe that such entities have been established, or are being used for cross-border tax evasion,¹² money laundering, or terrorism financing in the jurisdictions involved in the project.

B. Development Impacts, Outcome, and Output

10. **Impacts.** Through the development and commissioning of an 80 MW baseload geothermal power plant and avoidance of carbon emissions, ADB's financing support will assist the government's efforts to achieve sustainable growth targets through private sector investment. The government aims to increase the share of renewable energy in the country's primary energy supply from 12% in 2013 to 23% by 2025. Further, Indonesia recently strengthened its climate commitment by submitting the following intended, nationally determined contribution to the United Nations Climate Change Conference in 2015: an unconditional emission reduction of 29% by 2030 relative to business as usual based solely on domestic support, with a further reduction of up to 41% if adequate international support is given (para. 3). In Indonesia's 2016–2025 medium-term power development plan, this translates into geothermal accounting for over 1.3 GW of new power by 2019 and over 6.1 GW by 2025, mostly delivered through IPPs.

11. **Outcome.** The outcome will be that geothermal power generation in West Sumatra is expanded by 80 MW. The project will demonstrate the commercial viability of large-scale IPP geothermal projects. By developing new geothermal baseload power generation in the island of Sumatra, the project will help displace fossil-fuel-generated power, which is the dominant alternative in Sumatra's grid. The construction and operation of the power plant will generate employment for the local community and support climate change mitigation through an estimated net reduction in carbon dioxide emissions equivalent to 471,240 tons per year.

12. **Output.** The output will be one constructed and commissioned geothermal power generation unit with a total capacity of about 80 MW.

C. Alignment with ADB Strategy and Operations

13. **Consistency with ADB strategy and country strategy.** The project aligns with ADB's Midterm Review of Strategy 2020¹³ by promoting environmentally sustainable growth and private sector development through the expansion of geothermal baseload power generation. The project will displace and offset greenhouse gas and other harmful emissions generated by coal-fired or diesel-fired power stations. The project is also consistent with the interim country partnership strategy 2015¹⁴ for Indonesia by supporting the expansion of infrastructure and environment-friendly technologies for clean energy generation and energy efficiency.

14. **Consistency with energy sector strategy and ADB operations.** The project contributes to the objectives of Indonesia's National Energy Policy (2014) and to the

¹¹ "Intermediate jurisdiction" is defined in the Integrity Due Diligence Guidelines (revised December 2015). Engie's intermediate entities are incorporated in Belgium, the United Kingdom, and the Netherlands.

¹² Engie is committed to complying with honesty and integrity with relevant tax laws and regulations, and to pay its fair share of taxes in the countries in which it operates. Engie Tax Policy, June 2015. In addition, the Netherlands and the United Kingdom are classified as "largely compliant" and Belgium as "compliant" under the Global Forum on Transparency and Exchange of Information for Tax Purposes.

¹³ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

¹⁴ ADB. 2015. *Indonesia Partnership Strategy*. Manila. <https://www.adb.org/countries/indonesia/strategy>

commitment submitted in 2015 by the government to the Paris Agreement under the United Nations Framework Convention on Climate Change. The project also aligns with ADB's Energy Policy¹⁵ and complements recent technical assistance to MEMR and PLN for renewable energy development (including geothermal resources), as well as other ADB public sector initiatives to review geothermal tariff incentives.¹⁶ ADB is also providing support to the government to strengthen and expand Sumatra's transmission and distribution network.¹⁷ The project further builds on ADB's private sector operating experience with and support to recent geothermal project financing, such as Sarulla geothermal power and Rantau Dedap exploration finance (footnote 10).

D. Project Cost and Financing Plan

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E. Implementation Arrangements

15. Table 2 summarizes the implementation arrangements for the project.

Table 2: Summary of Implementation Arrangements

Aspects	Arrangements
Regulatory framework	The project is to be developed under Indonesia's most recent Geothermal Law (2014). The development rights were awarded to the sponsors through a competitive tendering process run by PLN in 2010.
Management	Engie, Sumitomo Corporation, and Supreme Energy have formed a consortium that has a combined 15-year track record in Indonesian geothermal power development and generation, and extensive experience in developing and operating over 120,000 MW in power generation assets across the globe, including over 13,000 MW in the Asia and Pacific region.
Implementation period	Steam field development (drilling of production and reinjection wells) and construction of an electricity-generating unit and field facilities will start upon financial close and will be commissioned about 30 months thereafter. The plant will operate under a 30-year offtake contract.
Construction and drilling arrangements	The construction of the power plant and associated special and field facilities (including access roads, gathering pipeline system, and separator system equipment; and excluding facilities already constructed) will be managed through a fixed-price, date-certain, turnkey engineering, procurement, and construction arrangement. [CONFIDENTIAL INFORMATION DELETED] The borrower will manage the drilling activities with rigs leased from a third party. [CONFIDENTIAL INFORMATION DELETED]
Operations and revenue structure	The project is being developed under the terms of a 30-year, 90% take-or-pay PPA with PLN (rated <i>BB</i> by S&P and <i>Baa3</i> by Moody's). PLN's obligations under the PPA are supported by the Government of Indonesia (rated <i>BB+</i> by S&P and <i>Baa3</i> by Moody's) through a business viability guarantee letter. [CONFIDENTIAL INFORMATION DELETED]
Performance monitoring	The borrower will submit the following to the Asian Development Bank on a semiannual basis: (i) unaudited and annual audited financial statements, (ii) environmental and social monitoring reports, and (iii) development effectiveness reports.

MW = megawatt, PLN = Perusahaan Listrik Negara (national power utility), PPA = power purchase agreement, PT PRA = PT Plumpang Raya Anugrah.

Source: Asian Development Bank.

¹⁵ ADB. 2009. *Energy Policy*. Manila

¹⁶ The government has tried to address private developer need for early-stage financing through Ministry of Finance Regulation No. 3/2012, which created a Geothermal Fund Facility (GFF). However, the GFF has certain terms and conditions (most notably the requirement of corporate guarantees for any loans to developers) that limit the GFF's capacity to move the market in situations where project viability has not been established.

¹⁷ ADB. 2015. *Indonesia: Electricity Grid Strengthening—Sumatra Program*. Manila.

F. Projected Financial and Economic Performance

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III. THE PROPOSED ADB ASSISTANCE

A. The Assistance

16. ADB's assistance will have three components: (i) a direct loan not exceeding \$70 million; (ii) a Leading Asia's Private Infrastructure Fund loan, to be administered by ADB, not exceeding \$20 million; and (iii) a mezzanine Clean Technology Fund (CTF) loan, to be administered by ADB, not exceeding \$19.25 million.

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B. Value Added by ADB Assistance

17. While more geothermal projects are reaching an exploration stage that makes them ready for financing, exploration costs and the risk associated with the development of the steam resource remain high. The availability of concessional finance motivates developers to complete more challenging exploration programs and reach financial close. Following the Sarulla and Rantau Dedap projects, this is the third project in Indonesia supported by ADB's \$150 million CTF geothermal program for 2013.¹⁸ The development of the Muara Laboh project shows that concessional financing is still needed to partially offset the elevated costs associated with early-mover risks faced by the private sector. The project is also showing that, thanks to the CTF support, the market is moving toward a more solid financial viability that will allow future projects to be developed with less concessional resources.

18. SEML will be the first geothermal IPP to conclude resource exploration and advance to steam-field and power plant development since the Sarulla project in 2014. While the Sarulla project was part of a previous generation of geothermal projects operating under the old mining regime, SEML is leading the next generation of geothermal projects classified as nonmining activities. Given ADB's experience in leading the financing of geothermal projects in Indonesia, ADB is in a unique position to translate wide-ranging lessons about resource risk management into commercially viable solutions (more resilient and implementable financing structures) for the next generation of geothermal projects and IPPs. ADB's financing will help demonstrate (i) the bankability of the new geothermal PPA jointly developed by PLN and the sponsors, upon which subsequent geothermal IPP PPAs are likely to be based; (ii) the continued investor interest to finance geothermal power in Indonesia; and (iii) the replicability of structuring solutions designed for the financing of the Sarulla project to manage complexities and resource risks presented by geothermal IPPs.

C. Risks

19. **Resource risk.** The lenders' resource consultant assessed the geothermal resource availability, and the exploration and drilling plan for production, injection, and other wells required for operations. Although forecasts of geothermal reservoir and well-field performance are inherently uncertain, the cash flow of the project is sufficiently robust to absorb a worst-case scenario, including the resource degradation downside scenario recommended by the lenders' resource consultant. GeothermEx opines that the potential risk of a resource shortfall is low over

¹⁸ <https://www-cif.climateinvestmentfunds.org/projects/private-sector-geothermal-energy-program>

the 30-year concession period and can be mitigated by a planned make-up well drilling program. Residual risk from reservoir performance and resource management is underpinned by contingency budgets, management expertise and sponsors' financial flexibility and commitment.

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20. **Drilling risk.** As with any project involving drilling, the risk of delays or cost overruns due to issues such as unproductive wells and lower-than-expected well capacities is high. The underground soil conditions, which affect the ease at which a well can be drilled, may only be known with precision once the well is actually being drilled. This will partly be mitigated by the drilling program's in-built flexibility, and by including sufficient drilling contingency budget in the project cost. The drilling budget was vetted by the lenders' technical consultant and deemed adequate.

21. **Construction and technology risk.** The construction risk of the power plant is moderate given the plant's limited size (80 MW). A significant portion of this risk will be transferred to contractors through a fixed-price, date-certain, turnkey engineering, procurement, and construction contract with Sumitomo Corporation. The use of dual flash technology is not currently common in Indonesia but deemed relatively proven in other countries with similar-size projects. Prudent design and operation will be assured by the borrower's technical team and its advisors, and will be monitored by the lenders' technical advisor.

22. **Offtaker counterparty risk.** All electricity generated by the project will be sold to PLN, Indonesia's state-owned electricity utility, through a fixed USD denominated tariff for the term of the PPA. PLN owns and operates most of the country's generating capacity and is the main provider of power transmission and distribution services in Indonesia.¹⁹ It has a dominant integrated position in the sector and a strong track record of support from the government, whose sovereign ratings are *BB+* from S&P and *Baa3* from Moody's. Offtake risk is significantly mitigated by the 20-year business viability guarantee letter by the Ministry of Finance to ensure PLN's capacity to fulfill its payment obligations under the project contracts.

23. **Operation and maintenance risk and availability risk.** Under the take-or-pay PPA, the plant's compensation is linked to its availability to produce electricity. The operation and maintenance plan is also conservatively accounting for costs that may arise because of a geothermal fluid's composition that deviates from the current projections. As for the risk of revenue disruption because of seismic activities, to which the project site is prone, it will be mitigated through compliance with the appropriate seismic design codes on all aspects such as civil, structures, and building. With insurance policies and contingency budget in place, the project faces reduced risk from other natural hazards such as flooding, landslides, and volcanic activity.

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24. **Transmission Risk.** PLN is working under an accelerated program to complete the requisite transmission line and switchyard. PLN is not liable for underperformance in the acceleration program or additional delays. Close monitoring of PLN's progress on the Transmission Line is recommended for SEML and the OE. PLN delay is mitigated by a \$3.6

¹⁹ Some limited transmission risk arises from dependence on PLN for construction of both the substation and an 80 km transmission line needed to deliver the plant's electricity output to the Sumatra grid. However, SEML is protected by deemed dispatch provisions under the PPA if project completion is hampered by PLN construction delays.

million contingency allocation for a generator set to back feed generated power for commissioning and dispatch until the transmission line is completed.

25. **Legal and regulatory risk.** The lenders' legal advisors have provided sufficient comfort regarding the ownership structure and commitments under the various project agreements. The overall regulatory risk in the geothermal subsector is expected to be minimal, given the priority and support the government has accorded the project.

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IV. POLICY COMPLIANCE

A. Safeguards and Social Dimensions

26. In compliance with ADB's Safeguard Policy Statement (2009), the project is classified as category A for environment, category B for involuntary resettlement, and category C for indigenous peoples.

27. Exploration began in 2012, and construction of the access roads and well pads is almost complete. The potential environmental and social impacts of the project were identified and effective measures to avoid, minimize, mitigate, and compensate for any adverse impacts are incorporated in the safeguard reports and plans. The institutional capacity and commitment of SEML to manage the project's social and environmental impacts are deemed adequate. Meaningful consultation was undertaken and a grievance redress mechanism was established. A 3.2 km transmission line and a proposed new substation to be constructed by PLN are considered associated facilities. PLN has not begun the permitting or AMDAL²⁰ process and no consideration of impacts from the transmission line or substation was undertaken to date. The sponsors carried out an audit of the existing facility and committed to a corrective action plan in accordance with ADB's Safeguard Policy Statement. The audit found that the project is complying with ambient environmental standards. The project location is adjacent to a national park and because threatened species have been observed in the area, the project is considered to be located in a critical habitat. However, the project has a very small footprint (70 hectares) compared with the overall area of the species' discrete management unit (672 square km).²¹ A biodiversity action plan was prepared, which includes both long-term biodiversity conservation actions and on-site mitigation measures linked to the construction and operation activities of the project. Threats to biodiversity primarily result from community exploitation of forest fauna and flora. Given the small project footprint and the conservation actions to be taken, which include community socialization, the project has the potential to make a positive biodiversity contribution. ADB will closely monitor the remaining construction and operational activities with a particular focus on the implementation of the biodiversity action plan.

28. The acquisition of the 141.8 hectares of land required for the project facilities was completed through negotiated settlements by SEML. The lands procured were state-controlled free lands utilized for cultivation by the 221 affected households, and not part of any traditional lands or lands with customary rights. An audit of the land acquisition process and compliance with ADB's Safeguard Policy Statement requirements on involuntary resettlement and impacts on indigenous peoples was carried out. The audit—based on site visits and consultations with

²⁰ Analisis Mengenai Dampak Lingkungan (environmental and social impact assessment).

²¹ "Discrete management unit" is defined in IFC. 2010. *IFC Guidance Note 6 Biodiversity Conservation and the Sustainable Management of Ecosystem Services and Living Resources*. Washington, DC as an area with a definable boundary within which the character of biological communities and/or management issues have more in common with each other than they do with those in adjacent areas.

affected persons; review of signed and notarized land agreements with the affected households and verification of land acquisition records maintained by SEML, including the cash compensation receipts signed by the affected households; and bank account details of the affected persons—confirmed that all 221 project-affected households were fully compensated at the negotiated rates, and no outstanding grievances regarding land procurement and compensation exist. The audit confirms that the affected households, mostly belonging to Minang ethnic group, fully support the project. To bridge the gaps identified in the audit, corrective actions were determined and agreed on with the borrower. A resettlement framework was prepared to guide PLN's land procurement process for the 3.2 km transmission line, and is expected to be carried out in 2017 through negotiated land acquisition with nontitled users cultivating on state-controlled free lands.

29. SEML will comply with national labor laws and, pursuant to ADB's Social Protection Strategy (2001), will take measures to comply with the internationally recognized core labor standards.²² The borrower will report regularly to ADB on (i) its (and its contractors') compliance with such laws, and (ii) the measures taken. Information disclosure and consultation with affected people will be conducted in accordance with ADB requirements.

B. Anticorruption Policy

30. SEML was advised of ADB's policy of implementing best international practice in combating corruption, money laundering, and the financing of terrorism. ADB will ensure that the investment documentation includes appropriate provisions prohibiting corruption, money laundering, and the financing of terrorism, and remedies for ADB in the event of noncompliance.

C. Investment Limitations

31. The proposed loan is within the medium-term, country, industry, group, and single-project exposure limits for nonsovereign investments.

D. Assurances

32. Consistent with the Agreement Establishing the Asian Development Bank (the Charter),²³ ADB will proceed with the proposed assistance upon establishing that the Government of Indonesia has no objection to the proposed assistance to PT. Supreme Energy Muara Laboh. ADB will enter into suitable finance documentation, in form and substance satisfactory to ADB, following approval of the proposed assistance by the ADB Board of Directors.

V. RECOMMENDATION

33. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of up to \$70,000,000 from ADB's ordinary capital resources to PT. Supreme Energy Muara Laboh for the Muara Laboh Geothermal Power Project in Indonesia, with such terms and conditions as are substantially in accordance with those set forth in this report, and as may be reported to the Board.

²² ADB. 2003. *Social Protection Strategy*. Manila (adopted in 2001).

²³ ADB. 1966. *Agreement Establishing the Asian Development Bank*. Manila.

Takehiko Nakao
President

15 November 2016

DESIGN AND MONITORING FRAMEWORK

<p>Impacts the Project is Aligned with</p> <p>Share of energy generated through new renewable energy sources reached 23% (Ministry of Energy and Mineral Resources, 2014)^a</p> <p>Greenhouse gas emissions, relative to business-as-usual scenario, reduced by 29% by 2030 (Government of Indonesia, 2015)^b</p>
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Results Chain	Performance Indicators with Targets and Baselines	Data Sources and/or Reporting Mechanisms	Risks
<p>Outcome</p> <p>Geothermal power generation in West Sumatra expanded</p>	<p>By 2020:</p> <p>a. Electricity generated and delivered to offtaker increased to 630 gigawatt-hours per year (2015 baseline: 0)</p> <p>b. Annual emission reductions achieved amount to 471,240 metric tons of carbon dioxide equivalent (2015 baseline: 0)</p> <p>c. Number of jobs provided during operation amount to at least 190 (2015 baseline: 0)</p>	<p>a–c. Company's annual financial statement</p> <p>a–c. ADB's annual monitoring report</p>	<p>Power production falls short of plans because of accidents and delays in maintenance.</p> <p>Weak power demand because of adverse macroeconomic developments</p>
<p>Output</p> <p>One geothermal power generation unit with a total capacity of about 80 MW constructed and commissioned</p>	<p>By 2019:</p> <p>a. Total installed electricity generation capacity of project increased to 80 MW (2015 baseline: 0)</p> <p>b. Number of jobs provided during construction amount to 1,400 at peak (2015 baseline: 0)</p> <p>c. Total domestic purchases during construction and early operation at least \$90 million (2015 baseline: 0)</p> <p>d. Total payments to the government provided during construction and operation total at least \$95 million (2015 baseline: 0)</p>	<p>a–d. Company's annual financial statements</p> <p>a–d. ADB's annual monitoring report</p>	<p>Cost of raw material increases more than budgeted.</p> <p>Delayed land acquisition</p> <p>Trained staff is not available.</p>

Key Activities with Milestones

Output: One geothermal power generation unit with a total capacity of about 80 MW constructed and commissioned

1 Negotiate and sign loan by Q1 2017.

2 Implement and complete drilling and construction plans by Q2 2019.

3 Complete connection to the transmission and distribution network by Q1 2019.

Inputs

ADB direct: \$70.0 million (loan)

Leading Asia's Private Sector Infrastructure Fund (Parallel Debt Sub-program): \$20.0 million (loan)

Clean Technology Fund: \$19.25 million (loan)

Sponsor: \$147.7 million (equity)

Japan Bank for International Cooperation: \$200.4 million (direct loan)

Commercial bank (under Nippon Export and Investment Insurance guarantee): \$133.6 million (loans)

ADB = Asian Development Bank, MW = megawatt, Q = quarter.

^a Ministry of Energy and Mineral Resources. 2014. *National Energy Policy*. Jakarta.

^b Government of Indonesia. 2015. *Intended Nationally Determined Contribution*. Jakarta. The policy commitment is made under the United Nations Framework Convention on Climate Change.

http://www4.unfccc.int/submissions/INDC/Published%20Documents/Indonesia/1/INDC_REPUBLIC%20OF%20INDONESIA.pdf (accessed 6 September 2016).

Source: Asian Development Bank.