



Completion Report

Project Number: 49203-001
Technical Assistance Number: 9082
December 2021

Indonesia: Eastern Indonesia Sustainable Energy Access Sector Project

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TECHNICAL ASSISTANCE COMPLETION REPORT

TA Number, Country, and Name: TA 9082-INO: Eastern Indonesia Sustainable Energy Access Sector Project		Amount Approved: \$1,400,000.00	
		Revised Amount: \$1,500,000.00	
Executing Agency: State Electricity Company (PLN)	Source of Funding: 1. Asian Clean Energy Fund under the Clean Energy Financing Partnership Facility (\$1,400,000) 2. Technical Assistance Special Fund—other sources (\$100,000)	Amount Undisbursed: \$11,069.84	Amount Used: \$1,488,930.16
TA Approval Date: 2 March 2016	TA Signing Date: 29 April 2016	TA Completion Date	
		Original Date: 15 May 2017	Latest Revised Date: 31 December 2018
		Financial Closing Date: 29 March 2019	Number of Extensions: 4
TA Type: Project preparatory TA			

Description

Indonesia made steady progress in reducing its national poverty rate from 19.1% in 2000 to 9.7% in 2018, with consistent growth per year during 2011–2018, except for 2015. Uneven development across provinces, however, contributed to widening income disparities, with several eastern provinces lagging significantly behind Java. The Government of Indonesia, therefore, prioritized accelerating infrastructure investments in eastern and border areas under the National Medium-Term Development Plan 2015–2019 and raising the national electrification ratio from 89% in 2016 to 91.3% by 2024. The electrification ratios in some eastern provinces were particularly low and were the government's focus in 2016, including West Nusa Tenggara at 76%, East Nusa Tenggara at 53%, and Papua at 50%. In these areas, limited electricity services were also provided by inefficient, polluting, and expensive diesel-fired power generators.

With these challenges, the government aimed to improve access to electricity and at the same time replace the use of diesel with locally produced natural gas by establishing small-scale liquefied natural gas (LNG) distribution networks. These were the innovative features of the government's request for a sector loan, the Sustainable Energy Access in Eastern Indonesia–Power Generation Sector Project (PGSP), in the Asian Development Bank's (ADB) country operations business plan for Indonesia, 2015–2017. This was also included in PLN's National Power Development Plan, 2015–2024, and was consistent with ADB's Energy Policy 2009 and the country partnership strategy for Indonesia, 2016–2019.

ADB prepared this project preparatory technical assistance (TA) to arrange financing for three initial gas-fired power plant subprojects (Kaltim-2 in East Kalimantan, Kupang-2 in East Nusa Tenggara, and the Minahasa plant in North Sulawesi) as well as preliminary studies for future solar or solar-hybrid power plants to be identified during the implementation.

The TA engaged a consulting firm to update and validate relevant studies and analyses, review demand forecasts and preliminary project designs, and prepare an alternative scenario analysis for additional power generation capacity with risk mitigation plans. While the PLN and ADB project teams were able to prepare bidding documents for the three subprojects, challenges in procurement processes and the enforcement of the requirements for local content in ADB-financed contracts, which are in conflict with ADB's procurement policy and regulations, had a negative impact on the procurement and eventually led to the discontinuation of ADB's financing preparation.

Expected Impact, Outcome, and Outputs

The impact of the ensuing project was enhanced quality of life in Indonesian society through the sustainable use of electricity as a key driver of increased economic activity. The outcome was expanded access to modern and cleaner energy services in eastern Indonesia. The TA outputs were to (i) review relevant pre-feasibility studies and gas supply and transmission infrastructure; (ii) assess and confirm technical design, risk mitigation measures, cost estimates and financing plans; (iii) prepare other related assessments such as financial analysis and safeguard documents for the core projects; (iv) support the LNG supply and distribution service tendering; (v) make additional feasibility assessments for selected non-core subprojects; and (vi) conduct knowledge sharing and capacity building workshops.

Implementation Arrangements

The TA was planned to be implemented from 29 April 2016 to 15 May 2017 with PLN as the executing agency.

ADB recruited a consulting firm through the quality- and cost-based selection procedure using full technical proposals with original consulting requirements of 14 experts providing a total of 55 person-months, consisting of eight international experts (28 person-months) and six national experts (27 person-months). The actual input was 55.56 person-months with 34.06 person-months from 10 international experts and 21.5 person-months from 11 national experts. The firm's service commenced in June 2016 and finished in February 2018. Major outputs of the firm's contract were (i) feasibility study reports of three gas-fired power plant subprojects that included design, cost estimates, and implementation plans; (ii) advisory reports on LNG supply and distribution lines; and (iii) workshops to share the study results and PLN's capacity development.

In January 2018, ADB's interdepartmental review of the ensuing PGSP identified additional need for assessments and mitigation plans on the project's safeguard issues, such as noise emissions and air quality, to comply with ADB's Safeguard Policy Statement (2009) requirements. This led to a minor change in scope and an increase in the TA funding of \$100,000 (from the Technical Assistance Special Fund—other sources) to undertake a survey to address the safeguard issues.

In addition to the consulting firm inputs, the TA planned to recruit five individual consultants, consisting of one international (4 person-months) and four national (10 person-months) consultants, to support the concept, tendering, and development of the LNG distribution network. From the original plan, international and national gas sector and power/energy access specialists were engaged. The other three national safeguard experts were replaced with a marine environment resource person, two international environmental safeguard specialists, and an international noise emission modeling and mitigation specialist to adjust to the project's newly identified safeguard assessment needs. In total, the TA engaged 8.7 person-months of international and 2.6 person-months of national individual consultant inputs from January 2017 to December 2018.

The TA closing date was extended four times (a total of 19.5 months), resulting in a total implementation period of 32 months against the original plan of 12.5 months. The first extension (from 15 May 2017 to 10 June 2017) was to accommodate delays in consultant recruitment and to adjust for the initial contract period. The second (from 10 June 2017 to 31 December 2017) and third (from 31 December 2017 to 30 April 2018) extensions were to accommodate contract extensions following delays in data collection, analyses, and changes in experts. The fourth extension (from 30 April 2018 to 31 December 2018) was needed to complete the additional safeguard assessments.

Conduct of Activities

TA activities: Following the TA approval in March 2016, the consulting firm was recruited and mobilized on 15 June 2016. In the following months, however, the firm required the replacement of some of the experts as it needed a wider range of expertise to complete the due diligence reports, leading to implementation delays. This and additional delays from data collection and the associated analyses made up most of the 19.5 months of implementation delays.

Although there were delays, the firm's outputs were supplemented by individual consultants, and the TA's six major outputs were all completed. The consultants completed the preparation of the following key documents for the ensuing PGSP: (i) a full set of bidding documents for the three core subprojects; (ii) technical reports required for ADB's internal approval process such as feasibility studies, financial and economic analyses, safeguard assessments, etc.; (iii) pre-feasibility assessments of pilot solar projects; and (iv) advisory reports on global LNG market conditions and a recommended risk mitigation strategy for PLN.

The TA's three workshops and a focus group discussion to disseminate the feasibility study results were attended by a total of 174 participants, 19% of which were women. At the focus group discussion and workshops, representatives from Japanese agencies such as the Japan International Cooperation Agency and the Japanese embassy in Jakarta were invited. The contributions from the Government of Japan for the TA were highlighted at these workshops.

After completing all activities, the TA was financially closed on 29 March 2019 with only \$11,069.84 of undisbursed funds, mostly from contingencies.

Advance procurement and discontinuation of the ensuing PGSP preparation: The TA enabled the ADB project team to prepare the loan documents for ADB Board consideration and advance procurement processes for the ensuing PGSP. The bidding documents for one of the three core subprojects were issued initially in 2017, but the bidding was later discontinued to correct inconsistent procedural information in the bidding documents. Although rebidding commenced in 2018, PLN's management policy shifted and required changing the procurement method from the engineering, procurement, and construction approach to design, build, and operate. Therefore, the rebidding process was terminated. Through to early 2020, the bidding documents went through updates based on PLN's requests, at

which point the continued activities were funded by additional resources from another ADB TA project with PLN, to ensure the project documentation was finalized.¹

In 2020, PLN informed ADB that the bidding conditions needed to be substantially revised with a stricter application, as compared to previous years, of the government's local content requirements, based on Law No. 3/2014, Government Regulation No. 29/2018, and other related regulations applicable to power infrastructure.² However, ADB's procurement policy does not allow for the inclusion of local content requirements under ADB-financed contracts. This led to protracted discussions between PLN and ADB, and the project preparation process and issuance of bidding documents for all three procurement packages were put on hold. In January 2021, PLN proposed a new structure of splitting the project components into imported goods and domestically available goods and works to comply with the local content requirements. ADB continued to support PLN with this proposal by providing additional technical review for the new structure. PLN, in parallel, requested confirmation of compliance with the local content requirements from Financial Supervisory and Development Board, the government's internal audit agency, which has not yet been issued. In addition to the long-term project level efforts to prepare ADB financing by the ADB and PLN project teams, ADB also engaged with the government through multiple means such as the country programming mission and through engagement of a public international law expert to discuss the local content requirement issues, particularly in the context of public international law. However, there has not been much progress on the issue. As such, in a joint meeting in June 2021 and in PLN's letter to ADB in October 2021, PLN informed ADB that PGSP would no longer be pursued as an ADB-financed project.

Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
Relevance	The TA was based on a government request to accelerate the installation of small- to medium-sized gas-fired power stations to increase electricity access and to reduce diesel fuel use in eastern Indonesia. This was also aligned with the government's national development policy and ADB's country partnership strategy. The TA type was appropriate as it was intended to prepare an ADB-financed loan project. Although processing of the ensuing loan project was canceled, the TA design was clearly defined and delivered the expected outputs that would allow the executing agency to build the power plants with other financing sources.	Relevant
Effectiveness	Some of the analyses for non-core subprojects were not conducted because of various additional tasks for the core projects and uncertainty about the ensuing project, but the planned TA activities and major outputs were completed. However, the outcome of expanded access to modern and clean energy in eastern Indonesia will only be achieved when PLN implements the prepared subprojects.	Less than effective
Efficiency	The TA utilized 99% of the budget, but the prolonged advance procurement processes and the changes in bidding method led to the discontinuation of the ADB loan preparation, resulting in less than efficient use of TA resources. The TA was also extended by 19.5 months from the original duration of 12.5 months, which more than doubled the TA implementation period.	Less than efficient
Overall Assessment	The TA was successful in preparing project feasibility assessments for the executing agency. The TA was designed well and aligned with both the government and ADB's priorities on universal electricity access especially in eastern Indonesia. However, the TA required four extensions. The ensuing ADB loan preparation also	Less than successful

¹ ADB. 2019. [Indonesia: Sustainable Infrastructure Assistance Program Phase II - Supporting Sustainable and Universal Electricity Access Phase 2 \(Subproject 3\)](#). Manila.

² Indonesia's Ministry of Industry Regulation No. 54/2012 requires gas-fired power plants of up to 100-megawatt capacity to have goods and services with combined local content of at least 48.96% of the whole project, for example.

Criterion	Assessment	Rating
	suffered from many process and policy changes by the executing agency, and was eventually discontinued without an effective approach to address the government's local content requirements.	
Sustainability	Even though the technical assessments are ready, without more flexible application of the local content requirements, projects that require substantial imported equipment such as PGSP will continue to suffer, especially as the executing agency relies heavily on sovereign-guaranteed lending and such requirements do not comply with the procurement policies of many bilateral or multilateral lenders.	Less than likely sustainable

Lessons Learned and Recommendations

Design and/or planning	Monitoring of regulatory issues. The TA was designed to align with the government's urgent priorities and readiness for the ensuing project, and was well planned at inception. The subsequent development of the strict application of local content requirements, even for development partner sovereign lending, was not able to be predicted at the planning stage. While no direct mitigation measures for such regulatory developments are available, this highlights the importance of close engagement with the executing agency and the oversight of government agencies throughout TA implementation and project preparation.
Implementation and/or delivery	Implementation period. With a growing number of completed power sector projects in Indonesia, it has become evident that a project preparatory TA generally requires an implementation period of more than 1 year. This TA proves that, with its cumulative 19.5 months of extensions and even longer subsequent processes needed to try to realize the ensuing project. ADB's transaction TA projects, as a successor modality to its former project preparatory TA projects, can cover project implementation support, which further adds to the need for longer implementation periods.
Management of staff and consultants	ADB's close monitoring of the consulting firm's performance revealed that the firm needed to strengthen its expertise in some areas. Early intervention by the ADB project team on expert replacements improved the quality and timing of work delivery.
Knowledge building	In monitoring the consulting firm's performance, further emphasis on capacity assessment and development of the executing agency and related government agencies, where possible, may provide more timely and effective progress for future TA activities.
Stakeholder participation	Conducting the workshops and focus group discussion in both English and Bahasa Indonesia proved helpful in disseminating project information and increased engagement in soliciting inputs for TA activities.

Follow-up Actions

While the TA did not result in an ADB loan, all deliverables were provided to the executing agency, PLN. These will provide effective bases of feasibility for the subprojects once PLN finds a practicable approach to the local content requirements or if PLN decides to move ahead with other financing options. Parts of the solar and solar-hybrid system component of this project will be carried over to other results-based lending that ADB is actively discussing with PLN with a target of ADB Board consideration in 2023. Furthermore, PLN holds the largest share of ADB's Southeast Asia energy portfolio, and ADB will continue to have close dialogue with PLN on its development agenda. Expanding renewable energy installations and electricity access in eastern Indonesia remains a priority to the government and PLN, and the progress on the objectives of this TA will be monitored through such future engagements.

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TECHNICAL ASSISTANCE COST

Table A.1: Technical Assistance Cost by Activity
(\$'000)

Item	Amount		
	Original	Revised	Actual
1. Consultants	1,135.0	1,293.0	1,321.4
2. Equipment	10.0	10.0	0.0
3. Training, seminars, and/or conferences	50.0	25.0	19.8
4. Surveys/studies	50.0	127.0	147.6
5. Miscellaneous TA administration	10.0	2.0	0.2
6. Contingency	145.0	43.0	0.0
Total	1,400.0	1,500.0	1,489.0

Source: Asian Development Bank estimates.

Table A.2: Technical Assistance Cost by Fund
(\$'000)

	Asian Clean Energy Fund ^a under the Clean Energy Financing Partnership Facility	Asian Development Bank ^b	Total
1. Original	1,400.0	0.0	1,400.0
2. Revised	1,400.0	100.0	1,500.0
3. Actual	1,389.0	100.0	1,489.0
4. Unused	11.0	0.0	11.0

^a Established by the Government of Japan and administered by the Asian Development Bank.

^b Technical Assistance Special Fund—other sources.

Source: Asian Development Bank estimates.