

Technical Assistance Report

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Transaction Technical Assistance (TRTA)
August 2017

Republic of Indonesia: Scaling Up Energy Efficiency (Financed by the Clean Energy Fund under the Clean Energy Financing Partnership Facility)

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CURRENCY EQUIVALENTS

(as of 18 August 2017)

Currency unit	–	rupiah (Rp)
Rp1.00	=	\$0.000075
\$1.00	=	Rp13,355

ABBREVIATIONS

ADB	--	Asian Development Bank
BSN	--	Badan Standardisasi Nasional (National Standardization Agency)
ESCO	–	energy service company
ESPC	--	energy savings performance contract
MEMR	--	Ministry of Energy and Mineral Resources
MEPS	–	minimum energy performance standard
RPJMN	--	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
TA	--	technical assistance

NOTE

In this report, "\$" refers to United States dollars.

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I. THE PROPOSED PROGRAM

1. The proposed Subprogram 2 of the Sustainable and Inclusive Energy Program supports the revival of Indonesia's underperforming energy sector through reforms initiated in 2014–2015, which aim to (i) improve fiscal sustainability and governance, (ii) expand private investment in the power and gas markets, and (iii) provide access to clean energy options for all Indonesians. Subprogram 2 deepens the reforms begun under subprogram 1 of the programmatic approach, which was approved in September 2015.¹ The impact will be increased domestic energy security and access to modern forms of energy, as reflected in the Government of Indonesia's National Medium-Term Development Plan (RPJMN), 2015–2019. The outcome will be increased supply from sustainable and more accessible energy sources. The outputs will be (i) fiscal sustainability and sector governance improved, (ii) private participation in power and gas markets enabled, and (iii) regulatory environment for increased access to clean energy options improved. The indicative amounts of the proposed program are (i) an A loan of \$400,000,000 from the ordinary capital resources of the Asian Development Bank (ADB), and (ii) a B loan not exceeding the equivalent of \$100,000,000 funded through the Association of Southeast Asian Nations (ASEAN) Infrastructure Fund. For subprogram 2, development partners have confirmed their contribution of the equivalent of about \$320 million in collaborative parallel financing (\$110 million equivalent from the French Development Agency and \$210 million equivalent from the German development cooperation through KfW).

II. THE TECHNICAL ASSISTANCE

A. Justification

2. The proposed transaction technical assistance (TA) will support the Government of Indonesia in promoting a market for energy service companies (ESCOs) and establishing a program of minimum energy performance standards (MEPS), labeling, and enforcement as a way to scale up energy efficiency in the country. The TA builds on the Asian Development Bank (ADB) policy and advisory work carried out under various technical assistance programs² and will assist the government in institutionalizing the reforms initiated as part of ADB's previous work. The outputs will be achieved through a combination of policy dialogue, analytical studies, capacity building, demonstration projects, and support for promulgating improved regulations.

3. The TA is included in the country operations business plan, 2017–2019 for Indonesia.³ Key energy efficiency measures developed under this TA may be included in the third subprogram of the policy-based Sustainable and Inclusive Energy Program loan, which is being implemented through three subprograms over 2015–2019 (footnote 1).

4. **Energy efficiency in Indonesia.** Indonesia has historically paid insufficient attention to energy efficiency measures. This stems primarily from the reliance on widespread government subsidies for fuels and electricity, which kept energy tariffs low for all consumers. Beginning in 2014, the government initiated several energy sector reforms to support its broader economic

¹ ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Programmatic Approach and Policy-Based Loans to the Republic of Indonesia for Subprogram 1 of the Sustainable and Inclusive Energy Program*. Manila.

² ADB. 2014. *Technical Assistance to the Republic of Indonesia for the Sustainable and Inclusive Energy Program*. Manila (TA 8826-INO), ADB. 2013. *Technical Assistance for Asia Energy Efficiency Accelerator*. Manila (TA 8483-REG), and ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loan and Grant to the Republic of Indonesia for the Java–Bali Electricity Distribution Performance Improvement Project*. (Grant 0198-INO).

³ The TA first appeared in the business opportunities section of ADB's website on 25 May 2017.

development goals, as outlined in the RPJMN, 2015–2019. To improve fiscal sustainability, the government drastically reduced subsidies for gasoline, and established a fixed per-liter subsidy scheme for diesel. In the case of electricity, it removed the subsidies for industrial, commercial, and large residential consumers, and introduced a system of automatic monthly price adjustments that reflect the exchange rate, the Indonesian crude oil price, and inflation. As a result, total energy subsidies fell from \$27 billion in 2014 to \$10.5 billion in 2015, and power subsidies from \$7.6 billion in 2014 to \$5.6 billion in 2015. In 2017, the government is phasing out subsidies for the remainder of household consumers, unless the household is classified as poor in the government’s integrated social safety net database. This will lead to higher tariffs for 22 million consumers. Annual subsidy payments to the State Electricity Corporation are expected to decrease by at least \$2.1 billion in 2017.

5. On the other hand, the potential for energy savings in Indonesia is substantial. The Ministry of Energy and Mineral Resources (MEMR) puts it at 10%–30% for industrial users, at 15%–35% in commercial buildings, and at 10%–30% for households. MEMR also set a national target to reduce energy consumption by 17% by 2025. In early 2015, the government launched a national campaign—*Potong 10%* (“Cut 10%”)—to fast-track energy reductions to 10% by 2019.

6. In addition to low tariffs, other constraints on energy efficiency include a lack of enforced energy conservation guidelines; limited expertise among ESCOs to conduct energy audits and develop bankable investment proposals, and poor understanding of their services among public and private facility owners; policy and financial barriers for large-scale ESCO deployment; a lack of coordination among standardization and regulation authorities; and difficulties in finding accredited testing laboratories for regulated products. Although a national energy conservation master plan was launched in 2005, it lacked detailed implementation plans. While the Indonesia National Standard, developed by the National Standardization Agency (BSN), sets technical requirements for the energy efficiency and safety of several appliances, the ministries of industry, trade, and energy and mineral resources all play a role in regulating various appliances. Of the 23 test facilities in Indonesia (including 5 national laboratories), only a fraction is accredited, or in the accreditation process, to test several household appliances.

7. In light of Indonesia’s development, energy savings, and climate change targets, the government is prioritizing deployment of renewable energy sources and energy efficiency measures to increase the security of energy supply and reduce the need to build new fossil fuel power plants. Residential energy efficiency measures, such as the development of MEPS and labeling of appliances, will help households reduce their consumption and keep their energy bills low when tariff increases are applied. Mainstreaming the use of ESCOs will assist larger consumers, including the government, to reduce energy consumption and carbon emissions. ADB has supported the government in assessing the regulations in the energy sector and developing innovative policy proposals and regulations and stronger implementation plans for energy efficiency initiatives (footnote 2), as detailed below. ADB will continue to support the development of a national MEPS and labeling program, and an ESCO market that can serve the needs of both public and private energy consumers in Indonesia.

8. **Standard adoption and labeling.** In 2011, Indonesia began developing energy efficiency labels for household appliances. MEMR adopted MEPS and issued labeling protocols for compact fluorescent lamps in 2011 (updated in 2014) and air conditioners in 2015. With ADB support, a strategic analysis was conducted in 2015–2016 on the standards and labeling programs in neighboring countries, market conditions, and the current status of testing facilities in Indonesia. The analysis revealed several gaps, such as the lack of a prioritization method for appliances to be labeled; a lack of proper data collection on energy usage; limited capacity to

test appliances to be regulated; no information or awareness campaign regarding MEPS and labeling; and the need for a monitoring, verification, and enforcement mechanism that clearly defines the roles of various agencies. ADB also provided preliminary training to MEMR staff on the collection of energy usage data.

9. A recent Sucofindo study found that nine popular household appliances account for 96% of home energy use.⁴ Rice cookers alone accounted for 27.2%, and refrigerators for 23%. ADB's review ranked rice cookers, refrigerators, fans, and electric motors as tranche-one priority appliances for MEPS and labeling.

10. Moving forward, draft MEPS, test standards and related regulations for refrigerators and electric motors, as well as a draft road map for MEPS development and labeling of the next tranche of priority appliances, are being developed, with support from a direct charge from ADB's Clean Energy Financing Partnership Facility. The road map will be used to support the government in its efforts to launch a national labeling and enforcement program, which will include capacity building, information campaigns, improvement of national testing laboratories, and the periodic revision of MEPS levels.

11. **Market for energy service companies.** Indonesia's Law 70/2009 on energy conservation requires mandatory energy audits for large consumers and stipulates that each company must have an energy manager. However, this has not been fully implemented or enforced because of a lack of awareness of energy efficiency and a limited pool of qualified energy auditors and managers.

12. A strong ESCO market is necessary to help raise awareness of energy efficiency measures and enable building owners or governments to realize savings. In June 2016, the government enacted a Ministerial Regulation on ESCOs, which provides national guidelines, definitions, and a mechanism for ESCOs to register themselves and enter into energy savings performance contracts (ESPCs) with private industrial and commercial companies.⁵ The government is keen to "lead by example" and use ESCOs to improve energy efficiency in government buildings. However, impediments to accessing ESCOs in government facilities remain, such as existing laws that prevent municipalities from accessing long-term financing and entering into multiyear ESPC contracts. An ESCO policy road map was formulated to determine which regulations must be revised or synchronized to overcome these barriers. In addition, a draft Government ESCO Regulation was created in December 2016.⁶

13. To mainstream ESCOs and develop a national ESPC program, the technical capacity of ESCOs must be improved, and an understanding of their services must be built among government staff, facility owners, and financial institutions. With ADB support, MEMR has planted the seeds by hosting multiple workshops for ESCOs to develop their capacity for investment-grade audits. ADB is providing additional training and TA with the technical review of five investment grade audits financed by MEMR in December 2016 (footnote 6). ADB will then support the government in finalizing the draft Government ESCO Regulation, establish an ESPC advisory unit within MEMR to help government agencies with the ESCO model, and

⁴ Sucofindo. 2015. *Energy Consumption Survey and Database Development on Appliances in Household Sector 2015*. Jakarta.

⁵ This regulation represents a policy trigger for subprogram 2 of the Sustainable and Inclusive Energy Program.

⁶ This work is being supported by ADB's Policy and Advisory Technical Assistance to the Republic of Indonesia for Strengthening Knowledge Sharing in Indonesia (TA 8858-INO), with cofinancing from Agence Française de Développement (French Development Agency).

implement demonstration projects to boost awareness and understanding of energy efficiency measures, ESCOs, and the ESPC approach among all stakeholders.

B. Outputs and Activities

14. **Output 1: A MEPS and labeling program for several household appliances developed.** ADB will assist the government in drafting the national MEPS, test standards, and regulations for various appliances, as well as establishing a technical committee to support the development of standards and assist in the review of test procedures. A technical committee for each product type will comprise representatives from the government, manufacturers, importers, distributors, BSN, and consumer groups. Data collection will be improved by training government officials in conducting and analyzing energy consumption by end use surveys. A public database of labeled products and an MEMR website will be developed to provide instructions to manufacturers, importers, distributors, and retailers on how to participate in the labeling program, and to advertise promotional campaigns and rebate programs.

15. **Output 2: National testing laboratories accredited for the identified appliances.** ADB will provide support for the development and accreditation of government-run testing facilities, including advice on proper equipment and laboratory setup, training of laboratory staff, and assistance with certification and accreditation.

16. **Output 3: The regulatory basis for ESCOs to serve the needs of government and private sector entities established.** ADB will support the government in revising and harmonizing regulations through a combination of regulatory review, policy dialogue with various government agencies, and support for promulgating improved regulations.

17. **Output 4: Capacity of various stakeholders for ESPC contracting improved.** ADB will help establish and train an ESPC advisory unit within MEMR to provide guidance on all phases of ESPC contracting. Hands-on training will be delivered through the implementation of multiple demonstration projects to improve awareness and understanding of energy efficiency measures, ESCOs, and the ESPC approach among government, the private sector, financial institutions, ESCOs, and other stakeholders. Select MEMR staff will also receive energy auditor certification through an international accreditation agency. ADB will support international partnerships with reputable institutes and agencies (such as Energy Efficiency Services Limited, a public sector ESCO in India) to foster knowledge transfer to Indonesian counterparts.

C. Cost and Financing

18. The TA is estimated to cost \$1,100,000, of which \$1,000,000 will be financed on a grant basis by the Clean Energy Fund⁷ under the Clean Energy Financing Partnership Facility and administered by ADB. The key expenditure items are listed in Appendix 1.

19. The government will provide counterpart support in the form of counterpart staff, office space, reports and documents, secretarial assistance, local communication facilities, domestic transportation, and other in-kind contributions.

⁷ Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom.

D. Implementation Arrangements

20. ADB will administer the TA. The Energy Division of its Southeast Asia Department will select, supervise, and evaluate consultants and organize workshops.

Table 1: Implementation Arrangements

Aspects	Arrangements		
Indicative implementation period	September 2017–August 2019		
Executing agency	Ministry of Energy and Mineral Resources. Within the ministry, the Directorate General for New and Renewable Energy and Energy Conservation will be responsible for the technical assistance.		
Implementing agencies	Ministry of Industry, Ministry of Trade, Agency for the Assessment and Application of Technology (BPPT), Financial Services Authority (OJK), National Standardization Agency (BSN), and local universities		
Consultants	To be selected and engaged by the Asian Development Bank.		
	Quality- and cost-based selection	58 person-months	\$880,000
	Consultants' qualification selection	18 person-months	\$46,000
Disbursement	The technical assistance resources will be disbursed following the Asian Development Bank's <i>Technical Assistance Disbursement Handbook</i> (2010, as amended from time to time).		

Source: Asian Development Bank estimates.

21. **Consulting services.** The consultants will have extensive experience in the development and implementation of energy efficiency and ESCO regulations and policies. One contract package for \$880,000 will be used to recruit an international firm through quality- and cost-based selection with a simplified technical proposal. The individual consultants will be recruited using consultants' qualification selection, for two contract packages totaling \$46,000. Each contract package will be a time-and-materials contract with a provision for fixed out-of-pocket expenditures. The consultants will be engaged by ADB in accordance with its Guidelines on the Use of Consultants (2013, as amended from time to time).⁸

22. **Social media and websites.** The national labeling and enforcement program will be disseminated through the MEMR website, which will include a list of regulations and a database of products that are regulated and certified. Information campaigns will be distributed through the website as well as through other channels, such as newspapers, radio, television, and advertising at stores. Upon closure of the TA, the MEMR labeling program website will be owned and maintained by the Directorate General for New and Renewable Energy and Energy Conservation and funded by the program budget of this directorate.⁹

⁸ Terms of Reference for Consultants (accessible from the list of linked documents in Appendix 2).

⁹ Memorandum of Understanding (accessible from the list of linked documents in Appendix 2).

COST ESTIMATES AND FINANCING PLAN
(\$'000)

Item	Amount
Clean Energy Fund^a under the Clean Energy Financing Partnership Facility	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	481.9
ii. National consultants	281.4
b. Out-of-pocket expenditures	
i. International and local travel	88.4
ii. Communications	0.4
2. Training, seminars, workshops, forum, and conferences	
a. Technical committee members honorarium	10.0
b. Venue rental and related facilities	15.0
3. Surveys	6.0
4. Developing laboratory test procedures	6.0
5. Contingencies	109.7
6. Insurance	1.2
Total	1,000.0

Note: The technical assistance (TA) is estimated to cost \$1,100,000, of which contributions from the Asian Development Bank are presented in the table above. The government will provide counterpart support in the form of counterpart staff, office space, reports and documents, secretarial assistance, local communication facilities, domestic transportation, and other in-kind contributions. The value of the government contribution is estimated to account for 9% of the total TA cost.

^a Financing partners: the governments of Australia, Norway, Spain, Sweden, and the United Kingdom. Administered by the Asian Development Bank.

Source: Asian Development Bank estimates.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/LinkedDocs/?id=49043-002-TARreport>

1. Terms of Reference for Consultants

Supplementary Document

2. Memorandum of Understanding