



SUPPORT TO INDONESIA EXIMBANK Building Capacity for Energy Efficiency

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Compact fluorescent bulbs use only 20%–33% of the electric power used by ordinary light bulbs, and last 8–15 times longer.

- Energy efficiency in Indonesia needs to be mainstreamed in the face of its increasing energy consumption and greenhouse gas emissions.
- The industry sector has the highest rate of energy consumption in the country, comprising 40% of the total in 2009.
- The Asian Development Bank partnered with Indonesia Eximbank to pioneer energy efficiency financing, focusing first on export-oriented companies.
- Indonesia Eximbank now offers a groundbreaking program for energy efficiency financing program that integrates loans with technical assistance on energy efficiency project conceptualization and energy audits. If this is implemented across various industries in the country, it could create a virtual power plant with a capacity of up to 2,500 megawatts.

CONTEXT

Despite potential to offer a \$4 billion market for commercial banks and the industry sector, mainstreaming energy efficiency in Indonesia has been a slow process.¹

Energy efficiency manages and restrains energy consumption. An appliance or equipment is energy-efficient if it produces the same output or service using less electricity or fuel compared to older versions of the same fixture. For example, a compact florescent light (CFL) uses less energy (20%-33%) than an incandescent bulb to produce the same amount of light.²

One possible reason why energy efficiency has not taken off in the country, despite the benefits it offers is the difficulty of getting the buy-in of stakeholders since energy subsidies in the country have increased in recent years. In 2009, fuel, electricity, and liquefied petroleum gas (LPG) subsidies totaled IDR45.04 trillion (about \$5.06 billion), IDR53.72 trillion (about \$6.04 billion), and IDR7.78 trillion (about \$0.87 billion), respectively.³

Indonesia needs an energy efficiency financing program due to increased energy consumption and a power supply mix that remains dependent on fossil fuels. Except during the 1997 global financial crisis, primary energy consumption has increased 3.5% every year since 1990 and final energy consumption has grown at the same rate. In 2009, oil provided 32% of all energy, compared to coal (19%), biomass (27%), natural gas (18%), and primary electricity (hydroelectricity and/or geothermal) (4%). The choice of fuel has serious implications for supply security, sustainability, and climate change, and power supply shortages have already begun to surface near Java. In addition, carbon dioxide emissions increased more than 7% every year during the 1990s, reaching 270 million tons in 2000.⁴

The industry sector is one of Indonesia's largest energy consumers (Figure 4.4.1). The share of industry in final energy consumption is increasing and reached 40% in 2009. In comparison, the combined share of households, services, and agriculture decreased from 55% in 1990 to 43% in 2009, while the share of transport is 18% (up from 14% in 1990).⁵ Even if companies curbed usage, delivery constraints and lack of understanding in the banking sector limits access to energy efficiency financing.

¹ Asian Development Bank (ADB). 2009. ADB Conference Promotes Investments in Indonesia's Energy Efficiency Sector. News release. 26 November. Manila. <http://www.adb.org/news/adb-conference-promotes-investments-indonesias-energy-efficiency-sector>

² International Energy Agency. Energy Efficiency. <http://www.iea.org/topics/energyefficiency/> (accessed 14 November 2014).

³ Asia-Pacific Economic Cooperation. 2012. *Peer Review on Energy Efficiency in Indonesia*. June. http://aperc.iej.or.jp/file/2013/7/23/PREE_201206_Indonesia.pdf

⁴ World Bank. 2013. Indonesia and Energy. http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/EXTEAPREGTOPENERGY/0,,contentMDK:20506301~pagePK:34004173~piPK:34003707~theSitePK:574015,00.html#Protecting_environment

⁵ ABB. 2011. *Trends in Global Energy Efficiency. Country Reports: Indonesia*. [www05.abb.com/global/scot/scot316.nsf/veritydisplay/1a65dd16a3c538acc125786400514251/\\$file/indonesia.pdf](http://www05.abb.com/global/scot/scot316.nsf/veritydisplay/1a65dd16a3c538acc125786400514251/$file/indonesia.pdf)

PROJECT SNAPSHOT

LOAN APPROVAL DATE:

March 2011

LOAN AMOUNT:

\$200 million

BORROWER:

Indonesia Eximbank

EXECUTING AGENCY:

Indonesia, Eximbank

GEOGRAPHICAL LOCATION:

Indonesia

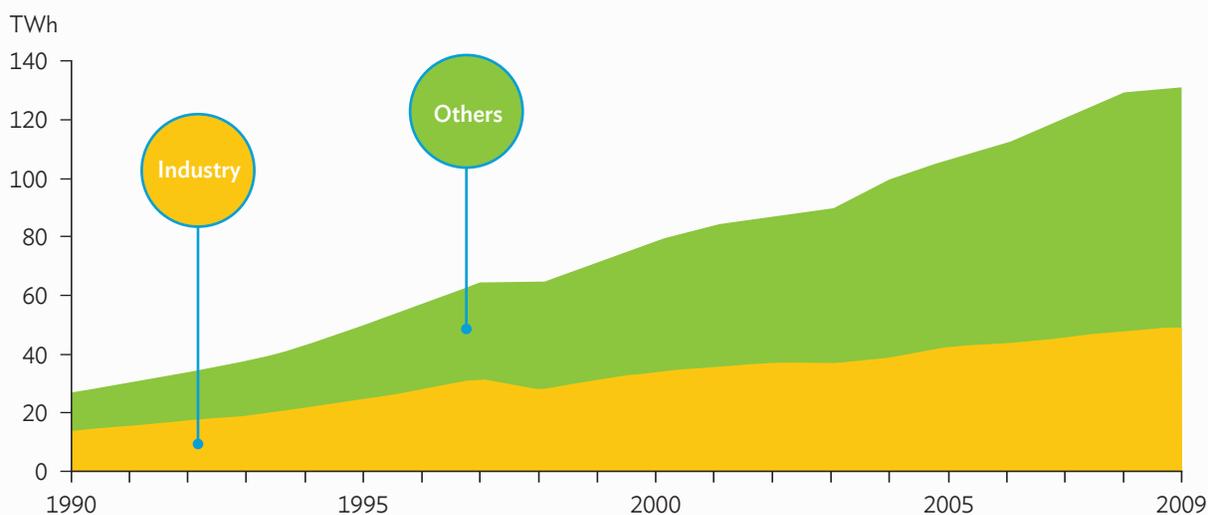
TYPE OF ENERGY PROJECT:

Energy efficiency

PROJECT COMPLETION DATE:

March 2015

Figure 4.4.1: Electricity Consumption Trends by Sector



TWh = terrawatt-hour.

Source: Enerdata, as cited in ABB. 2011. *Trends in Global Energy Efficiency. Country Reports: Indonesia*.

Thus, in 2011, the Asian Development Bank (ADB) used the banking industry as an entry point to introduce a technical assistance package that aimed to increase awareness, build capacity, and demonstrate the viability of energy efficiency finance to commercial banks. Such assistance is part of ADB's up to \$200 million investment in Indonesia Eximbank (Eximbank),⁶ the country's export credit agency, which functions as a quasi-government body that provides funding, guarantees, and/or insurance, as well as supporting advisory services to Indonesian enterprises into exports.⁷ ADB's partnership with Eximbank became the gateway for mainstreaming energy efficiency programs in the industry sector.

SOLUTIONS

Raising awareness on energy efficiency financing. Although ADB first introduced the concept of energy efficiency financing to Eximbank in 2011, its work on raising awareness was already under way in Indonesia. In 2009, an ADB conference, "Financing \$4 billion Energy Efficiency Solutions in Indonesia," gathered nearly 200 representatives of commercial banks, government, and major industries to facilitate new financing opportunities for energy efficiency and renewable energies. This first step was crucial because the concept of energy efficiency financing was fairly new in Indonesia. It also tapped the services of a recognized international expert with an established track record successfully implementing solutions for energy efficiency finance across a

⁶ ADB. 2011. *Proposed Loan and Administration of Technical Assistance Grants to Indonesia Eximbank*. March. Manila. <http://www.adb.org/sites/default/files/projdocs/2011/44906-01-ino-rrp.pdf>

⁷ Indonesia Eximbank. 2014. *Indonesia Eximbank in Brief*. <http://www.indonesiaeximbank.go.id/en/about-us/indonesia-eximbank-in-brief>

range of economies. This was an essential step in securing participation because the proposed lending tools had to comply with Eximbank's loan documentation and risk management procedures.

Building capacity for energy efficiency financing. Capacity-building activities for this project are groundbreaking in a sense, since these were the first of such series of training in Indonesia by an international financial institution. Numerous workshops within Eximbank specifically targeted the knowledge void on energy efficiency among staff and management. Participants received hands-on training in the development and application of energy efficiency finance products and the evaluation of projects. The workshops also provided guidance on marketing and promotion of energy efficiency financial products. To deepen knowledge, mentoring sessions within Eximbank's divisions were conducted because the financing programs required structural and behavioral changes within the bank. To close the knowledge gap, ADB provided capacity-building activities at both the supply side (i.e., within the bank) and the demand side (i.e., for Eximbank's clients, local service providers, contractors, vendors, and other commercial banks).

Development of Eximbank's Energy Efficiency Project Finance Program. The training workshops and mentoring sessions were instrumental in developing the Eximbank's Energy Efficiency Project Finance Program (EPPFP), which aimed to reduce barriers to energy efficiency financing for export industries. EPPFP is a loan program that targets companies using three significant features: (i) low collateral, (ii) free technical assistance, and (iii) generation of positive cash flow. Companies seeking EPPFP loans need not present collateral because the savings generated by an energy efficiency project are sufficient. They also receive free technical assistance in concept development and/or an investment-grade audit that includes a comprehensive cost/savings analysis of potential energy savings opportunities. EPPFP helps generate positive cash flow by ensuring that savings from an energy efficiency project cover the monthly loan installments. These features were designed to encourage export companies to apply for energy efficiency project loans.⁸

Development of the Energy Efficiency Savings Guarantee. To encourage commercial banks to participate in the joint financing of energy efficiency projects, a savings guarantee was integrated into the program. This reduces the risks commercial banks face in accepting new cash flow generated from the savings made by the projects, which is the main source of repayment and collateral of the borrower company. The guarantee covers any shortfalls between the project savings and the amount needed for the borrower company to service the loan to the bank. It guarantees that cash flow generated by new energy efficiency project will increase borrowers' credit capacity.

Implementation of the first energy efficiency project loan. Eximbank implemented its first energy efficiency project EEP loan in January 2014, lending PT Tiga Pilar Sejahtera Food (AISA), a publicly listed food company, Rp16 billion (\$1.31 million) to reduce its energy consumption through six energy efficiency measures. These measures, which include retrofitted lighting, insulation, and temperature-control equipment, will help AISA save up to Rp6.3 billion in energy costs per year.⁹

⁸ D.S. Batipiran. 2012. *Energy Efficiency Project Finance Program*. <http://asiacleanenergyforum.org/acef2013/images/stories/2013pdf/Day-3/Session-19/Dilan-Batuparan.pdf>

⁹ T. Sipahutar. 2014. Eximbank Starts Energy Financing Program. *Jakarta Post*. 25 January. <http://www.thejakartapost.com/news/2014/01/25/eximbank-starts-energy-financing-program.html>

RESULTS

Availability of financial instruments for energy efficiency. Energy efficiency financing is a hugely untapped opportunity in Indonesia, but no commercially viable project or financing scheme had been put in place prior to the integrated technical assistance support. If companies relied on their own funds to finance such projects, they would need to divert resources from their core operations. Consequently, few to none took the risk of shouldering projects, and lack of knowledge and limited expertise were significant hurdles. Doubts about quantifying the energy efficiency to amortize loan repayment caused many companies to hesitate. Using Eximbank's EEPFP, companies can access a financial instrument designed for their specific needs and capacities.

Companies' readiness for ISO 50001. The International Organization for Standardization (ISO) recently targeted energy management as a global priority to save energy and reduce greenhouse gas (GHG) emissions (footnote 6). ISO 50001 emphasized the importance of energy efficiency by developing an energy management system.¹⁰ Through technical assistance for project conceptualization and energy audits, Eximbank's EEPFP can facilitate exporters' compliance with this new standard.

Reducing energy consumption and greenhouse gas emissions. ADB estimates that energy efficiency could reduce demand by 2,500 megawatts, roughly equivalent to the electricity shortfall calculated by Indonesia's state electricity company (footnote 6). Lower energy consumption will, in turn, contribute significantly to lower GHG emissions.

LESSONS

Sufficient lead time. As of March 2015, the technical support to Indonesia Eximbank has been running for 3 years. This is a relatively short time, considering the project team was required to undertake a case-by-case approach to capacity development and project due diligence, in order to analyze the costs-benefits of each transaction under the energy finance facility, in close consultation with Eximbank's finance officers and managers. The EEPFP also formed a close liaison with the management and operating division teams in the exporting companies/borrowing client. The customized approach to energy efficiency finance requires intensive capacity development and generous implementation timelines to support "proof of concept" by both the project developer and the financier.

Subsidies may slow down energy efficiency projects. Because long repayment periods under low energy tariff regimes deter energy savings, an energy efficiency knowledge gap may persist in subsidized markets.¹¹ Subsidies become a disincentive to managing energy consumption. In this area, Indonesia will need policies favoring the growth of energy efficiency to support smooth and gradual penetration of energy efficiency across industries with varying sources and intensity.

Forming a competent team. The sustainability of energy efficiency financing is predicated upon an integrated team, particularly in a pioneering country. For future replication, project implementers must remember that the finance team will be the go-to unit of businesses. Thus, building a competent team is paramount. The energy

¹⁰ International Organization for Standardization. 2011. ISO 50001 – Energy Management. <http://www.iso.org/iso/home/standards/management-standards/iso50001.htm>

¹¹ T. Dreessen. 2012. EEP Finance Program of: Indonesia Eximbank (IEB). Presentation to the 2012 Clean Energy Forum. 6 June. ADB, Manila.

efficiency team is a one-stop shop where companies can access, develop, and process project loans.

Establishing a comprehensive loan framework for energy efficiency financing. In addition to the energy efficiency team, Indonesia needs to develop sound loan and guarantee products. In this context, loan products must not only have attractive financing terms, but also need to integrate technical assistance for project conceptualization and feasibility. This is essential, especially in areas where energy efficiency is a novel and untried concept. Compared to other types of financing instruments, energy efficiency loans require more information from borrowers. Implementation requires judicious planning on energy efficiency measures because the novelty of specialized financing may be considered higher risk. Appropriate planning influences the amount of savings that a project can generate. The savings provide cash flow to the company which also serves as collateral and payment. These are the major requirements for loan approval. Thus, a comprehensive loan framework is a prerequisite for facilitating the development of energy-efficient finance.



Energy efficiency could reduce Indonesia's energy demand by 2,500 megawatts.

Improved knowledge base for energy efficiency financing.

Knowledge about energy efficiency financing is the pillar of a successful loan program. Backed by skills and know-how, a comprehensive loan framework will help ensure that staff is ready to offer and explain energy efficiency financing and competent to help prospective clients throughout the entire process. An improved knowledge base can help overcome the confidence barrier in accessing loans or joint financing by other banks.

Keywords

Energy, energy financing, energy efficiency, energy efficiency financing, energy efficiency projects, Indonesia, Eximbank, Indonesia Eximbank

For further reading

- http://adb.org/projects/details?proj_id=44906-014&page=overview
- http://adb.org/projects/details?page=details&proj_id=44906-014
- <http://www.adb.org/projects/documents/nonsovereign-loan-indonesia-eximbank-0>

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