Developing Energy Efficiency Finance for Indonesia's Banking Sector

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ADB

Presentation Outline

- Energy Efficiency Potential
- Preparing Energy Efficiency Financing for Indonesia's exporters

Energy Efficiency Solutions

SUPPLY-SIDE

- Generation: Plant rehabilitation, supercritical boilers, fuel switching, combined heat & power (CHP), integrated gasified combined cycle (IGCC), improved O&M
- Transmission & Distribution: Improved transformers, HV lines, insulated conductors, capacitors, improved metering, substation rehab, gas compression and decompression, system optimization
- District Heating: Boiler rehabilitation, pre-insulated piping, compensators, pumps, heat exchangers
- Transport: Alternative fuel buses, mass transit systems

END-USE

- Industrial: Energy audits, EE financing, ESCOs, boilers, chillers, CHP, fuel switching, waste heat recovery, industrial motors/drive systems, process equipment
- Commercial: Building codes, building retrofits, envelop measures (i.e. insulation, windows), lighting, pumping, space/water heating/cooling
- Residential: Building codes, appliance standards, lighting, labeling/consumer education, improved cook stoves, solar water heaters
- Municipal: Street lighting & other public lighting, traffic signals, water pumping (supply and wastewater), waste-to-energy
- Agriculture: Irrigation pumping/drip irrigation, EE agricultural processing equipment
- Transport: Fuel-efficiency standards, mass transit, efficient vehicle technologies
- Utility Load Management: Time-of-use metering, demand charges, direct load control, demand response programs

Source: ADB and World Bank

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Indonesia's $4 Billion EE Investment Potential

	Investment Potential and Type	Potential Annual Savings
Commercial Buildings	$1 billion for electrical system retrofits, system efficiency improvements, poly-generation and waste heat recovery	$254 million/yr in avoided electricity and fuel costs
Industrial Facilities	$3 billion for electrical system retrofits	$641 million/year in avoided electricity and fuel costs
	$1.9 billion for system efficiency improvements, poly-generation and waste heat recovery	

Source: ADB estimates

ISO 50001, the new global energy efficiency and energy management standard, was released on June 20 2011. The new international, voluntary standard, developed by a project committee of 45 partnering countries from the International Organization for Standardization (ISO), "provides organizations with a framework for continuous energy performance improvements. The framework will encourage adoption of best practices that reduce the energy use of existing equipment and facilities, require the use of energy performance data to target cost-effective upgrades, and emphasize the design and installation of highly efficient energy systems and equipment. By increasing their operational efficiency, organizations that adopt the ISO 50001 standard will save money by saving energy".

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Developing Energy Efficiency lending to Indonesian exporters, as per market demand…

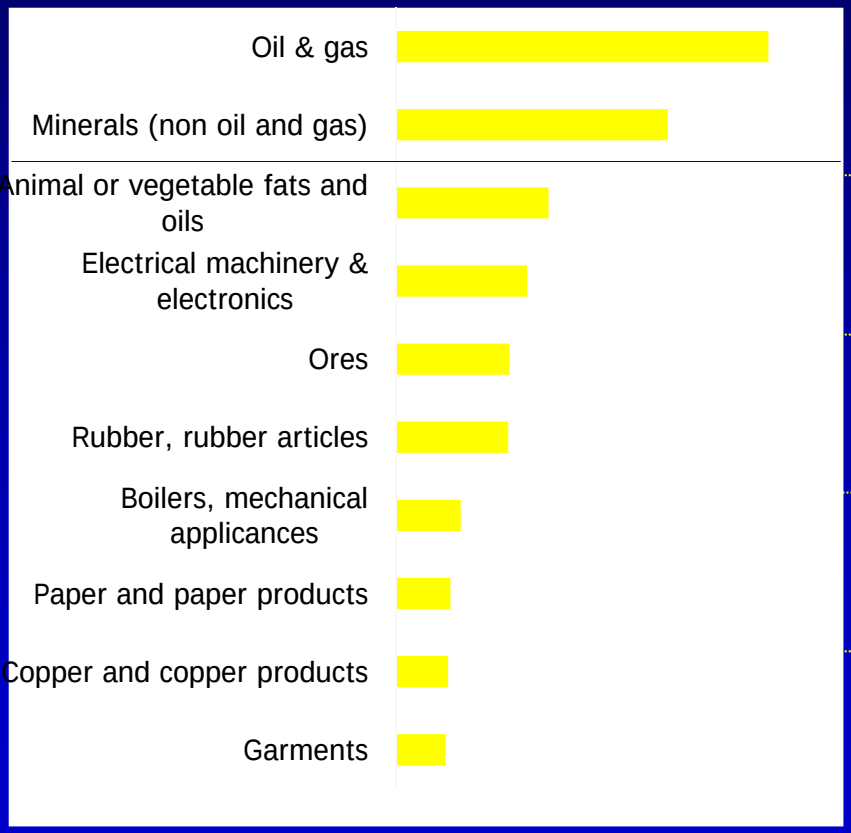
Target customer criteria	Rationale
Exporters	• Focuses on companies with strongest motivation to participate -- increasingly, European and US importers (e.g. Walmart) require carbon footprint data from *all* their suppliers • Avoids borrowers taking on currency risk o Loans will be US$ denominated o Exporters have US$ revenues
Energy efficiency loan size in the range **Upper limit:** US$5mn[1]	• Ensures loans are targeted at those exporters without ready access to other funding sources – for larger loans, vendor financing is often available at competitive rates (e.g. large palm oil processor has equipment financing from WestLB at libor +250bp with 6 to 8 years tenor) • Avoids projects which are too large for a distributing bank to process easily
Lower limit US$200,000 (this implies Mid-Market corporations)	• Helps demonstrate impact – if the loans are too small, their impact will be less evident
Energy intensive	• Ensures project payback is significant to the borrower, thus motivating the borrower to prioritize the project
Uses electricity as primary energy source (as opposed to LNG or other forms of cheaper power)	• Targets customers with most to gain from improved energy efficiency

Note: 1) upper limit subject to review once lending starts

We have started assessing how Indonesia's 10 largest export sectors fit with the target customer criteria[2]

Indonesian exports

Exports, largest sectors, US$ bn (Jan to Mar 2010; total for sectors shown = US$ 24.0bn, out of total exports of US$35.4bn)[1]



Fit with target customer criteria[2]

- Highly concentrated, so projects likely large (& outside range)
- Tend to be Japanese, Korean and Taiwanese MNCs
- *As for oil, gas and minerals*
- Competitive intensity increasing, forcing cost cuts

Further analysis for TA funded work

- Review industry structure to determine scope of EE among both direct exporters, and their supply chain (indirect exporters)
- Assess demand for EE lending, through interviewing industry associations, reviewing available documents and possibly interviewing a sample of customers

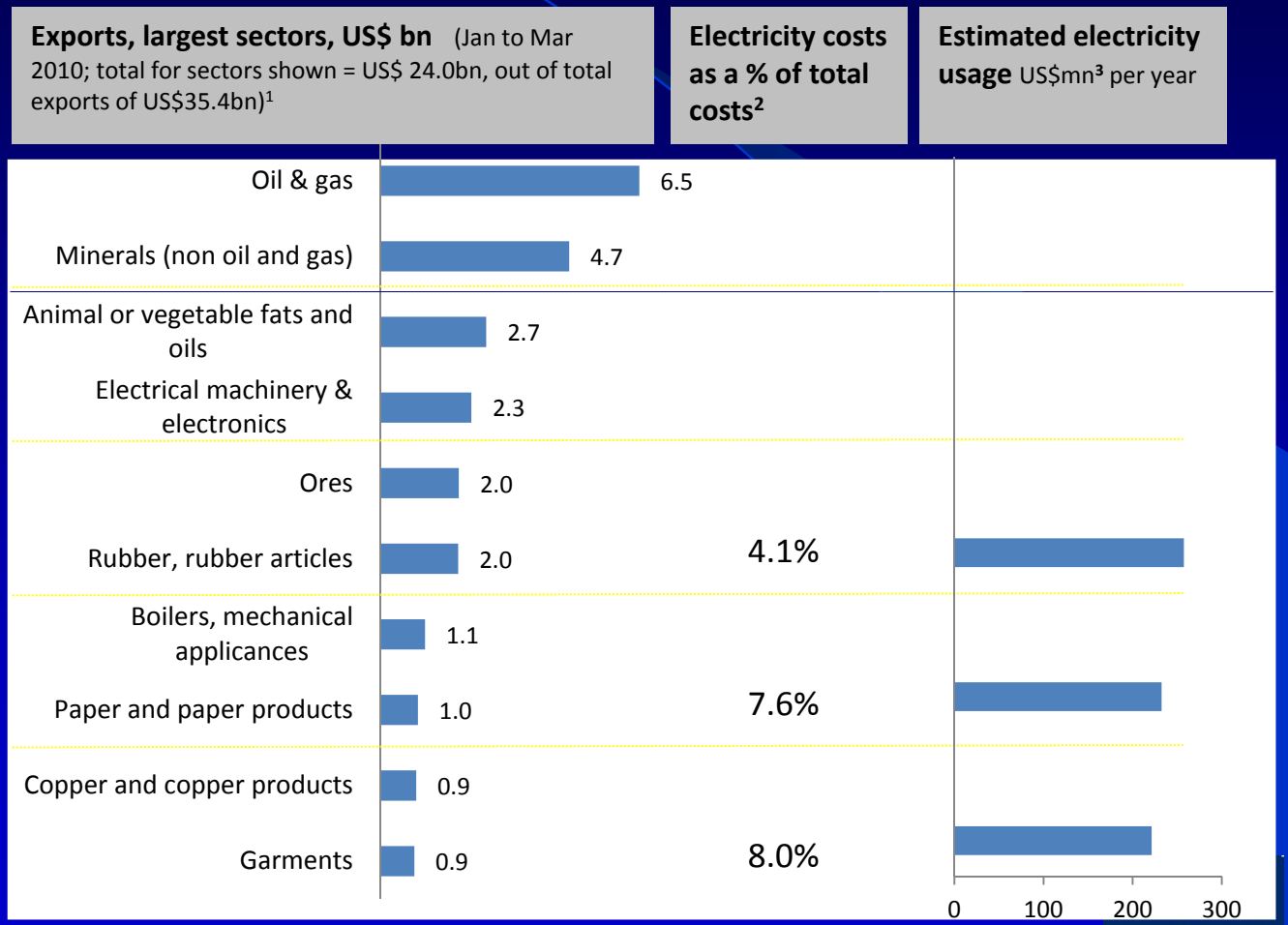
● = strong fit with target customer criteria ○ = weak fit

Source: 1) Badan Pusat Statistik (Indonesian Central Government statistics department) Total exports 2010: USD 158 bn.

Note 2)Target criteria are: exporters, loan size in range US$200k to US$5mn, intensive use of electricity

3 of these – rubber, paper and garments – have potential EE savings in the range $70mn to $150mn / year

- 3 export sectors (rubber, paper and garments) have combined electricity costs of around US$700 mn per year
- Assuming EE savings in the range of 10% to 20%, implies potential savings of US$70 to $150mn/ year, across these 3 sectors alone

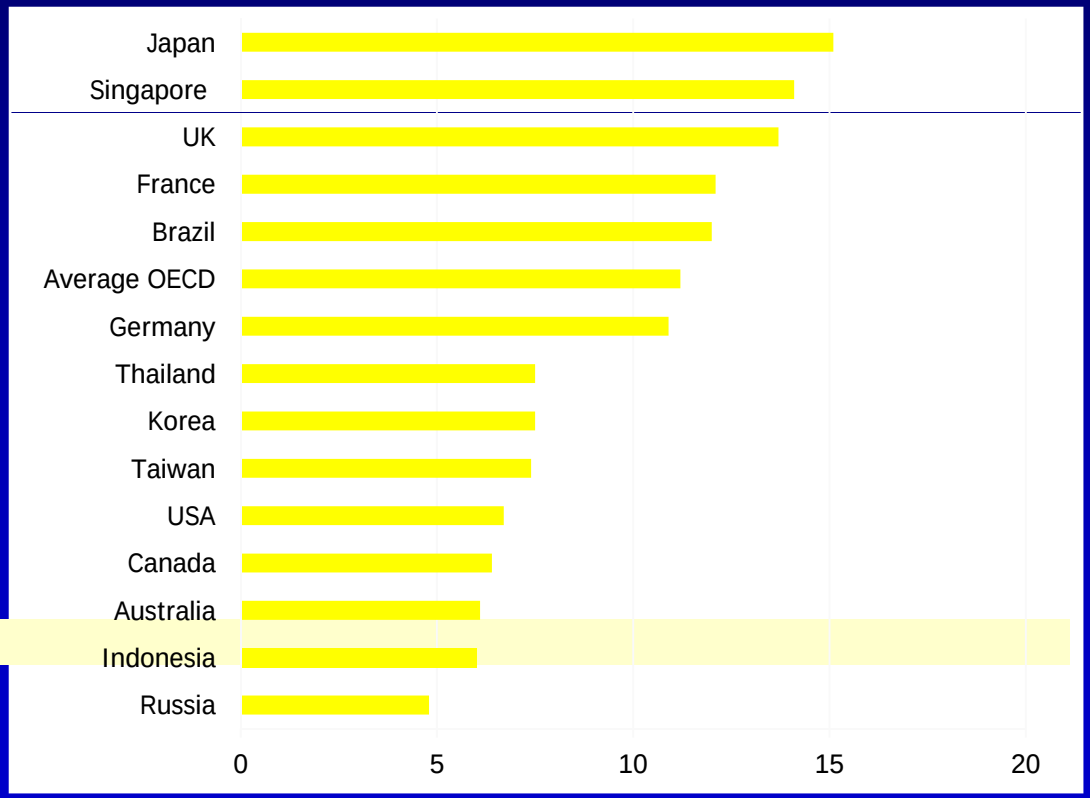


Source: 1) Badan Pusat Statistik (Indonesian Central Government statistics department)
2) ADB Estimates based on industry interviews; excludes non-electricity costs
3) Calculated from other two columns, assuming a profit margin of 20%; e.g.: Rubber accounted for US$2bn in exports over Q1 2010, equivalent to US$8bn a year. Assuming 20% profit margin gives estimated annual costs of US$6.4bn. The electricity costs are 4.1% of this or $262 mn

We believe our demand estimates are conservative, and will increase as Indonesia raises electricity prices

Indonesian industrial electricity prices are low by world standards…

Industrial electricity prices, selected countries, US cents/ KWH

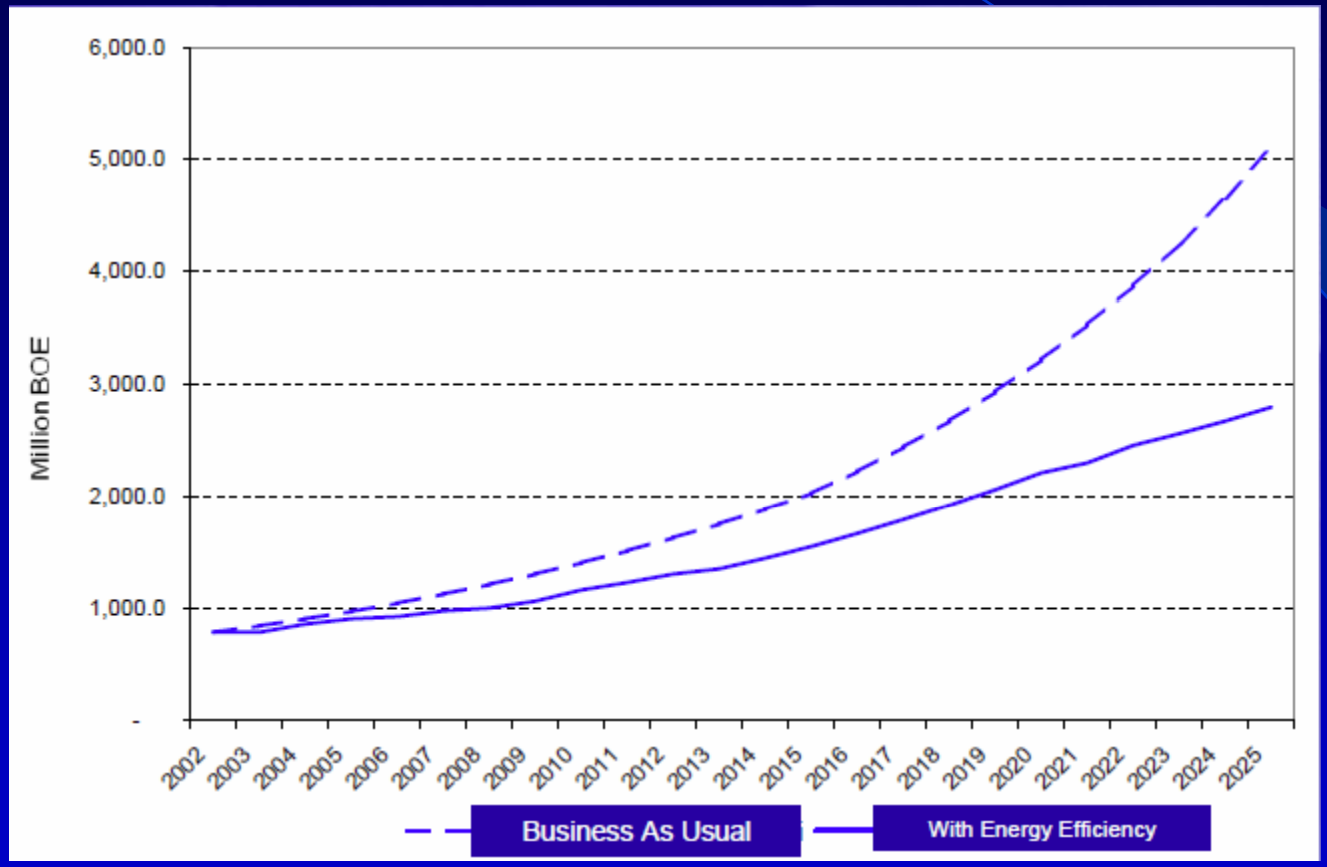


Source: *International Energy Agency; other published sources; prices for latest year available, mostly 2009*

… and are expected to increase significantly over the next few months

The Indonesian Ministry of Energy and Minerals introduced regulation in 2010, to raise industrial electricity prices by an average of 18%

Primary Energy Consumption Projection with EE Scenario



Saving 2.2 million BOE or 44 % reduction

Source: DGEEU, 2008

ADB Nonsovereign Loan and Technical Assistance

- In March 2011, ADB's Board of Directors approved a $200 million nonsovereign loan i.e. without government guarantee, to Indonesia Eximbank – Indonesia's official export credit agency
- ADB provided USD 100 million and co-financed an equal amount with 4 participating international commercial banks, in amount of USD 100 million
- The multipurpose loan is supported by a technical assistance (TA) in an amount of $1.1 million
- The TA consultants, energy efficiency finance experts and EE engineers, will undertake the review of Indonesia Eximbank's portfolio and identify projects with EE finance payback periods of up to 5 years
- The TA will undertake training on EE finance to Indonesia Eximbank project finance officers, major industry associations, partner commercial banks, and also involve an energy service company (ies)
- TA implementation will take effect in late November 2011 (for further information contact the project officer, Madeleine Varkay: mvarkay@adb.org.

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Thank you.

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