Exploring the Future of Energy Efficiency Financing in Bangladesh

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Creating an Energy Revolution

A revolution doesn’t happen when society adopts new tools, it happens when society adopts new behaviour

Clay Shirky, Digital Guru
Key Services and Solutions in demand for Energy Efficiency

<table>
<thead>
<tr>
<th>Large Industry</th>
<th>MSMEs</th>
<th>Buildings</th>
<th>Municipalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Waste Heat Recovery</td>
<td>✓ Compressed Air Optimization</td>
<td>✓ Lighting optimization</td>
<td>✓ Street Lighting</td>
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<tr>
<td>✓ MV Drives for Pumps and Fans</td>
<td>✓ Power Optimization</td>
<td>✓ HVAC Optimization</td>
<td>✓ Pumping</td>
</tr>
<tr>
<td>✓ Boilers Optimization</td>
<td>✓ Heat Pumps</td>
<td>✓ Enthalpy control system</td>
<td></td>
</tr>
<tr>
<td>✓ Combined Heat and Power</td>
<td>✓ Drive Controls for Pumps, fans, CA system</td>
<td>✓ Building Management system</td>
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</tr>
<tr>
<td>✓ Pumps and Fan Optimization</td>
<td>✓ Chilled Water Optimization</td>
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Financiers Perspective

- Risk Assessment And Risk Control
- Each of the key risks involved allocated and priced
- Calculate Return on Investment

ANALYSIS OF RISKS AND RETURNS

PROJECTS RISK/ RETURN PROFILE

Risk
- Credit Risk
  - Sponsor Creditworthiness
  - Resources Availability
- Commercial Risk
  - Technology
  - Revenues
- Returns
  - Financing
  - Cost
  - Revenues

Environmental Risk
O&M Requirements
Financing Challenges

Availability of Funds
- Limited internal funds
- Limited borrowing capacity

Information awareness & communication
- Information for projects hosts and manufacturers.
- Communication between project hosts and financiers

Project development & transactions costs
- Small project size
- Project development costs

Risk assessment & management
- Lenders’ risk perception
- Collaterization

Lack of capacity
- Bank loan and risk managers
- Energy service providers
- Project hosts

Others
- Need for new financial products and appraisal tools
Mitigation Measures

1. Better training for the borrowers to support them in the energy calculation and reporting
2. Including more components in the financing scheme to accommodate greater financing needs
3. Making the approval process less procedural, thus reducing lead time
Policy Pathways on PPP Approaches for EE Finance

I. Dedicated Credit Lines - established by the public sector to enable co-financing from the private sector for EE project financing.

II. Risk-Sharing Facilities - partial risk or partial credit guarantee programs, which reduce the risk of energy project financing to the private sector, thereby enabling increasing lending.

III. Leveraging commercial financing through Energy Performance Contracting implemented by ESCOs - Legislative and/or regulatory initiatives to facilitate private sector financing of public sector energy projects.
I. Dedicated Credit Line
Thailand Energy Efficiency Revolving Fund

Fund established using petroleum taxes

Dedicated low interest credit line technical support provided to banks

EERF Fund

Local Financing Institutions

Project A

Project B

Project C

Low Interest Credit Line

Bank Co-financing

Project Loans 70/30 Debt/Equity
In the case of the CHEEF, the banks match the donor/government funds on a 1:1 basis and require a 30% equity investment for each project.

I. Dedicated Credit Line: China Energy Efficiency Financing Programme

World Bank
USD 200 Million

Local Bank
USD 200 Million

Project 1

Project 2

Project 3

Total Project Financing
USD 571 Million

Debt: 70%

Equity: 30%
II. Risk Sharing Programme

IFC Signs Guarantee Facility Agreements (GFA) with Participating Commercial Banks

IFC/GEF

- Provides partial coverage of the risk of loan loss

GFA

Participating Banks

- Agree to the Guarantee Facility Agreement and provide loans

Loans

Project Developers

- Obtain funds for EE projects at favorable terms due to lower LFI risk
III. Leveraging commercial financing through Energy Saving Performance Contract (ESPC)

ESPC involves providing an energy consumer “host facility” a range of services related to the adoption of energy efficient products, technologies, and equipment. The services provided may also include the financing of the energy efficiency upgrades, so that the host facility has to up little or no capital. (Singh., et al 2010).

- ESPC approach
- Turn Key Basis
- Implementing Energy Efficiency Projects

Offered by ESCOs or other energy service providers (ESPs)
## Energy Savings Company (ESCO): An Emerging Trend in Bangladesh

- Identification, development and design of energy-efficiency projects
- Financing, or acquiring the financing, of the energy-efficiency project
- Measurement, monitoring and verification of the project’s energy savings
- Installation of energy-efficiency technology/equipment
Structure of ESPC Business Models

**Shared services models**

- Client
  - ESCO
    - ESCO finances the capital investment cost with its own funds or on loan
    - The asset is retained in the books of ESCO
    - The client and ESCO share the energy savings based on a predetermined ratio
    - ESCO retains a larger share of energy savings
    - The ESCO assumes both performance risk and the credit risk

- Bank / FI
  - Repayment
  - Loan

**Guaranteed services models**

- Client
  - ESCO
    - ESCO guarantees the savings and receives fixed fee
    - If guaranteed savings is exceeded, ESCO receives a percentage of excess savings
    - ESCO pays for shortfall, if any, from guaranteed savings
    - The ESCO assumes both performance risk, while the Bank/FI assumes the credit risk

- Bank / FI
  - Repayment
For enterprises and funders
Shift focus towards sustainable business models, particularly integrating end-user finance and after-sales services

For funders
Innovate in investment screening and technical support services during the screening process

For policy makers
Encourage competition based on quality of services and customer satisfaction

For regulators
Apply targeted subsidies that support establishing service infrastructures and consider undertaking credit subsidies and guarantees (plus capacity building)
# Value chain in the EE market and supporting roles of funders and government

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Regional/National Distributor</th>
<th>Local Distributor + Service provider</th>
<th>End User</th>
<th>Financing Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Funder’s financial support</strong></td>
<td><strong>Funder’s technical support</strong></td>
<td><strong>Policy support</strong></td>
<td><strong>Funder’s financial support</strong></td>
<td><strong>Funder’s technical support</strong></td>
</tr>
<tr>
<td>➢ Direct equity and debt financing</td>
<td>➢ Management capacity building, business plan writing</td>
<td>➢ Import tax credits on renewable energy and energy efficiency products</td>
<td>➢ Direct debt and equity investments</td>
<td>➢ Management capacity building</td>
</tr>
<tr>
<td>➢ Payment guarantees when selling to local distributors</td>
<td>➢ Legal assistance</td>
<td>➢ Subsidized loans</td>
<td>➢ Provision of funds to FIs to give out loans to micro entrepreneurs</td>
<td>➢ Basic capacity building/technical trainings</td>
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<tr>
<td>➢ Direct debt and equity investments</td>
<td>➢ Technological assistance</td>
<td>➢ Subsidies on product’s end user prices</td>
<td>➢ Provision of funds to finance end customers</td>
<td>➢ Coordination of relations with product suppliers</td>
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<td>➢ Provision of funds to FIs to give out loans to micro entrepreneurs</td>
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<td>➢ Subsidized loans</td>
<td>➢ Provision of loan repayment guarantees to MFIs</td>
<td>➢ Support in quality assurance</td>
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<tr>
<td>➢ Coordination of relations with product suppliers</td>
<td>➢ Subsidized refinancing for solar home system loans</td>
<td></td>
<td>➢ Support in quality assurance</td>
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What IDCOL offers

**Infrastructure**
- Long-term local and foreign currency loans
- Short-term local currency loans
- Debt and equity arrangement

**Renewable Energy**
- Concessionary financing and grant supports
- Technical assistance and quality assurance
- Capacity development of stakeholders
- Arranger of Carbon Credits

**Energy Efficiency**
- Concessionary / market based financing
- Capacity development

**Advisory Services**
- Corporate advisory services
- Training on Project Finance & Financial Modeling
- Consultancy, Training and Capacity Building on Renewable Energy
Financial Vehicle to support EE&C

- Energy Efficient equipment as per pre-specified list
  - Interest Rate of 4% - 6%
  - Up to 100% of equipment/machinery cost

- EE Equipment and Industrial Machinery
  - EE Brick Kilns
  - Manufacturing of EE Components and Appliances
  - Improved Cook Stoves Program
  - Interest Rate less than commercial market rate
  - Up to 100% project cost financing
  - Long term loan facility

JICA Line of Credit

Energy Efficiency window of IDCOL
Way Forward to EE Financing

Energy Efficiency Financing

AfD
EURO 100 Million

ADB
USD 50 Million

EE&CPFP
JICA (Phase 2)

KfW
USD 50 Million

JICA

ADB

KfW
Thank You