Energy Efficiency Market Outlook for Bangladesh

Approximately 40% of the GHG emission reductions required by 2050 to limit global temperature increase to less than 2 degrees centigrade would potentially come from energy efficiency alone. It is the key for cost effective energy transition and the one hidden energy resource that all countries, including Bangladesh possess in abundance. Stronger policy development and implementation focusing on technology leapfrogging, demand aggregation, new financing mechanisms and innovative business models is essential if the current level of efficiency gains is to be maintained or accelerated. Manufacturing, commercial buildings and appliances are the major markets for energy efficiency investments with tremendous potential for energy savings, industrial productivity, and multiple other economic and social benefits for the foreseeable future.
The primary energy intensity in Bangladesh has been improving at a rate over 11% since 2005 and this is on par with the global energy intensity trend. This means, energy use and economic development have been decoupling with gross domestic product (GDP) growing at a faster pace than primary energy use.

Recognising the need for strong energy efficiency policy to realise national energy goals, the government has set targets and laid out a clear roadmap for market transformation. The EE&C master plan aims to achieve global best energy intensity in manufacturing and building sectors by 2025 and accelerated penetration of high efficient and super efficient appliances in the residential sector by 2030.
A range of direct and indirect economic benefits can flow from improving energy efficiency, including for employment, productivity, and the incomes of individuals and businesses. Increased energy efficiency can also improve access to energy. Particularly in Bangladesh, where large parts of the population continue to lack access to energy services, efficiency can help increase energy access by ensuring a greater level of energy service per unit of energy consumed. Integrating energy efficiency with energy access interventions can optimise energy system capacity, defer capital expenditure and bring significant economic benefits.
1.6 Billion USD investment opportunity in RMG & textile sub-sector alone. Energy efficiency is indispensable to improve productivity, gain competitive edge and better the working environment.

**Spinning**
- Carding machines
- Roving frames with pneuma-less waste
- Ring spinning frames with PM motor
- Autoconer with balloon controller
- Air jet spinning machines

**Pressing**
- Automatic vacuum iron table

**Utility**
- Once through boiler
- Screw compressor with inverter control
- Cogeneration with gas engine generator

**Sewing & cutting**
- Machines with direct drive servo motors
- IE2 / IE3 motors

**Weaving / Knitting**
- Air-jet loom with adjustable air consumption and pressure.
- Warper & sizer with inverter control and IE2 / IE3 motor
- Circular knitting machine with less air consumption
- Jacquard knitting machine with less air consumption

**Dyeing, printing and finishing**
- Dyeing machine and stenter with built-in waste heat recovery
- Stenter controlled by inverter and adjustable air volume, nozzle width
- Washing machine using indirect steam and built-in heat recovery
- Steam dryer with built-in waste heat recovery

**Business case for industrial energy efficiency: the multiple benefits**

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<tr>
<th>Industrial Sub sector</th>
<th>National Energy Consumption (thousand toe)</th>
<th>National EE&amp;C potential (thousand toe)</th>
<th>EE&amp;C saving (%)</th>
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<tbody>
<tr>
<td>Textile and garment</td>
<td>3740</td>
<td>1159</td>
<td>31%</td>
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Source: SREDA, 2015

Summary of EE&C Interventions in RMG & Textile Industrial Sub-sector

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Source: ADB, 2014
Technology leapfrogging is vital to accelerate energy efficiency in buildings and appliances. Building codes and appliance standards are key policy measures for driving adoption. Demand aggregation can help achieve economies of scale and improve cost effectiveness of adopting super efficient technologies.

SREDA has notified the draft regulations for appliance standards & labelling in 2018. Soon after, these regulations take effect, the voluntary phase for complying with minimum energy performance standards and labelling will commence for ceiling fans, LED lamps, room air conditioners and refrigerators. Together these four appliance categories account for 75% (approx.) of electricity consumption in the residential sector.

In the commercial building space, the Building Energy & Environment Rating for Design and Construction of Buildings (Draft) was published in 2018. Further, Bangladesh’s Ministry of Housing and Public Works is currently developing Green Buildings Guidelines. These standards along with existing independent green building rating mechanisms (e.g. LEED) will go a long way in unlocking the potential for energy efficiency in buildings.
New financing mechanisms and innovative business models are vital to delivering the investment opportunity in energy efficiency. Enabling policies should focus on creating self-sustaining markets for these alternative mechanisms such as energy service companies (ESCOs), green banks, green bonds etc.

New financing mechanisms (e.g. ESCOs, green banks and green bonds) are essential to further accelerate market transformation. The policy should focus on creating public sector institutional capacity to lead initial investments, aggregate demand and demonstrate proof of concept.

For accelerating private sector participation, it is crucial to establish trust and confidence in the capabilities and capacity among private players. Innovation in establishing robust payment security mechanisms and established structures for adopting legal recourse of payment defaults can further go a long way in creating self-sustaining markets for these alternate financing mechanisms.

Preferential lending from local financial institutions supported by low cost credit lines from international development finance institutions is the dominant mechanism for energy efficiency financing in the currently scenario. JICA, World Bank, ADB, KfW, AfD and many other development finance institutions are actively operating / designing such credit lines to accelerate investment in niche energy efficiency markets. The Energy Efficiency and Conservation Promotion Financing Project (EECPF) is a 100 Mn USD JICA credit line administered by SREDA and IDCOL is one of the participating financial institutions for further on-lending this fund at preferential rates to eligible projects based on a predefined criteria.
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Infrastructure Development Company Limited (IDCOL) was established on 14 May 1997 by the Government of Bangladesh. Since its inception, IDCOL is playing a major role in developing and financing infrastructure, renewable energy and energy efficiency projects in Bangladesh. Today the company stands as the market leader in private sector energy and infrastructure financing in Bangladesh.

What IDCOL offers:

- Long Term Local and Foreign Currency Loan for Infrastructure Projects
- Agency services
- Debt and Equity Arrangements
- Corporate Advisory Services
- Training and Capacity Building Services
- Soft Loan and Grant for Renewable Energy Projects
Someh Kumar  
EY India Power and Utilities Leader  
Tel: +91 11 6671 8270  
E-mail: somesh.kumar@in.ey.com

Sanjoy K Gupta  
EY Bangladesh Managing Partner  
Tel: +88 028835513  
E-mail: sanjoy.k.gupta@in.ey.com

Ashish Kulkarni  
Executive Director – Power & Utilities, India  
Tel: +91 124 464 4000  
E-mail: ashish1.kulkarni@in.ey.com

Mohammad Saif  
Director, Power and Utilities, India  
Tel: +91 124 46 18134  
E-mail: Mohammad1.saif@in.ey.com

Kanv Garg  
Director, Renewables & Electric Mobility, India  
Tel: +91 124 671 4000  
Email: Kanv.Garg@in.ey.com

Rahul S Agnihotri  
Senior Manager, Power and Utilities, India  
Tel: +91 9867334415  
Email: Rahul.Agnihotri@in.ey.com

Shuboday Ganta  
Manager, Power and Utilities, Bangladesh  
Tel: +88 1904667282  
Email: Shuboday.Ganta@in.ey.com

Shikhar Gupta  
Assistant Director, Knowledge - Power & Utility, India  
Tel: +91 124 470 1233  
E-mail: Shikhar.Gupta@in.ey.com

EY office

Ernst & Young Advisory Services Bangladesh Limited  
Gulshan Pink City, Suite 6/A, Level–7, Plot no 15, Road no 103, Block- CEN(C), Gulshan Avenue, Dhaka – 1212  
Bangladesh  
Tel: +88 01611275705  
ey.com