

Towards Greener Bangladesh: Integrated Approach for Green Energy

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Towards Greener Bangladesh



Overview

- 1 Energy Efficiency & Conservation Master Plan
- 2 Building Energy Management
- 3 Industrial Energy Efficiency
- 4 Renewable Energy
- 5 Energy Management



Impact of Global Warming



Sea level rise, caused by melting of glacier and thermal expansion



Rare animals which can live only in specific climate condition may be extinct



Prevalent area of tropical epidemics such as malaria may expand



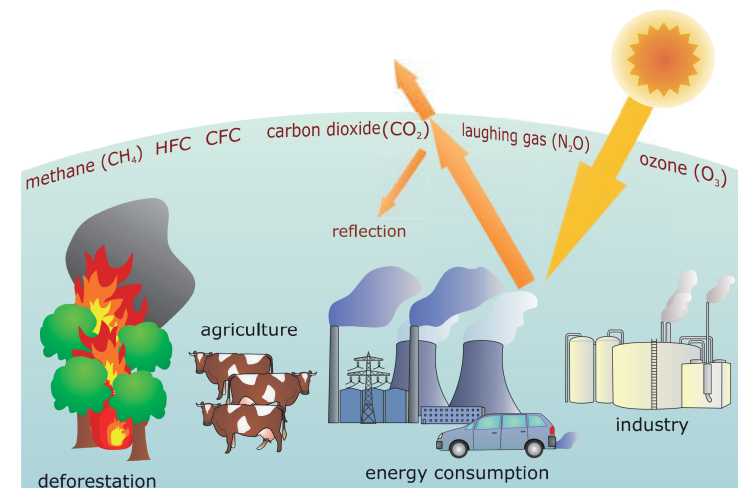
Climate change will bring desertification, high tides and waves

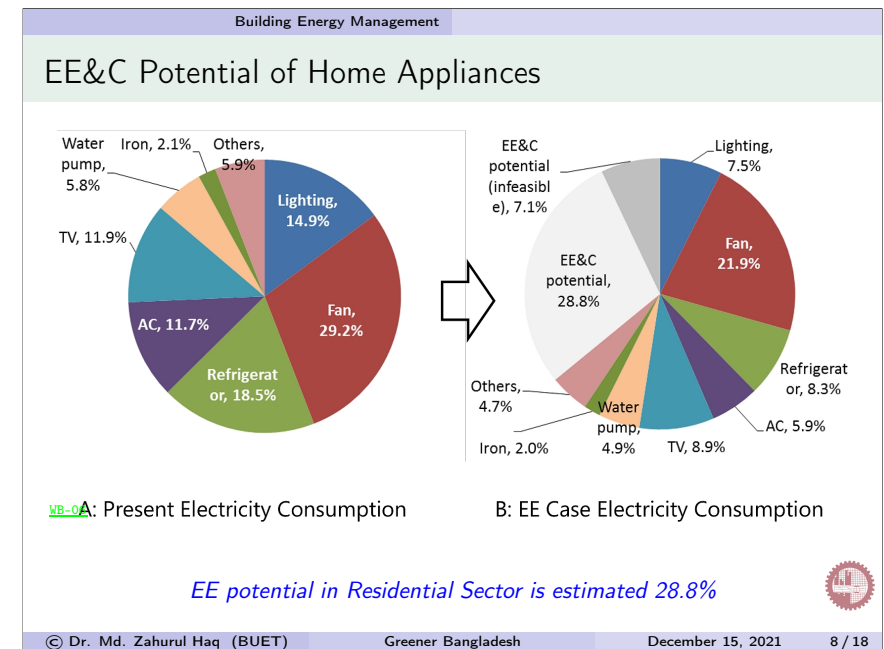
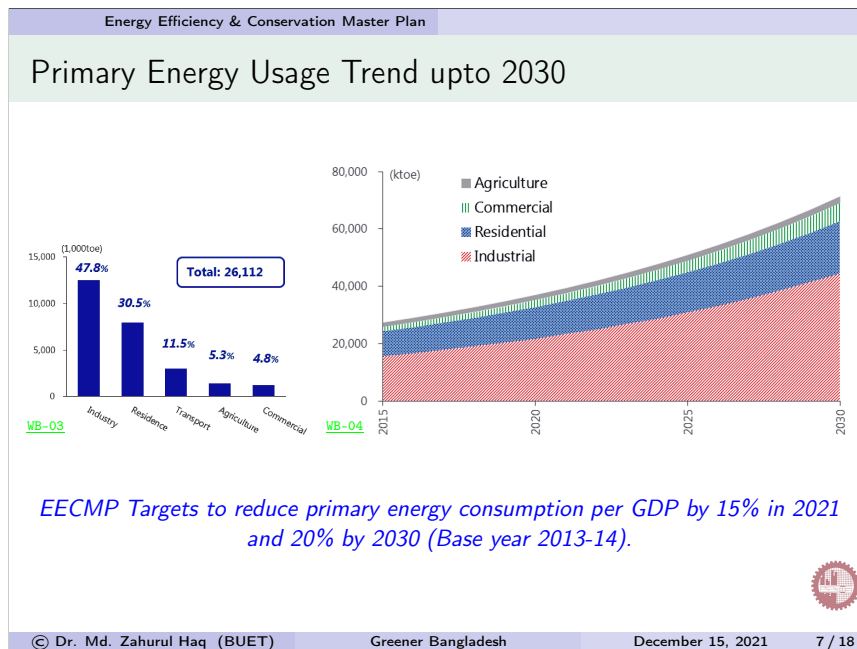
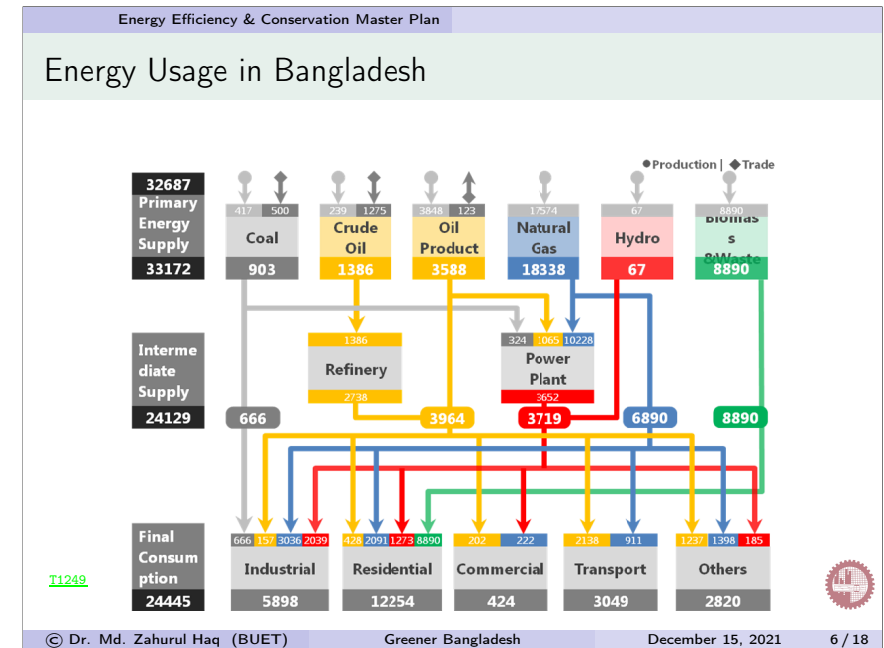
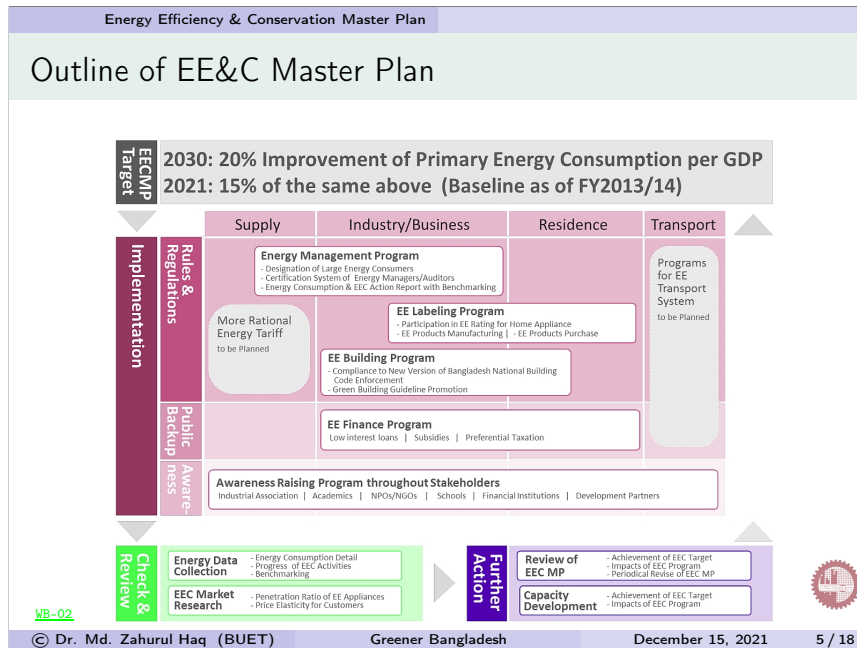


Not only the climate change, but also noxious insects increase may bring agricultural damage and cause scarcity

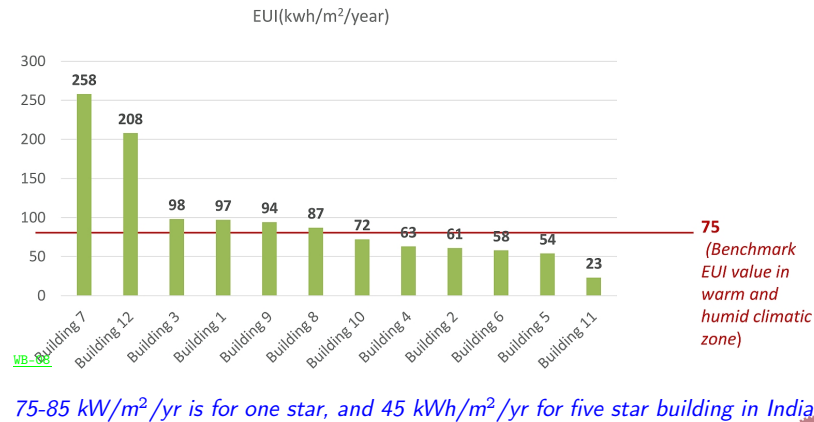


Causes of Greenhouse Effects Due to Human Activities

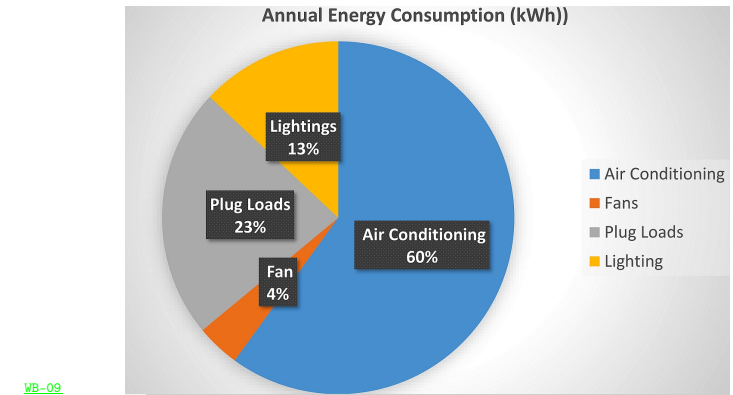




Public Building Energy Use Intensity (EUI) analysis



Overall Energy Consumption (%) by end use application



Energy Saving Potential on Overall consumption

Energy Efficiency Measures	Cost	Goals	Energy Saved on Overall consumption	Comments
Switching the power settings of desktops to power saving mode	None	Immediate	1.9%	
Replacement of Fluorescent tube lights and CFLs with energy efficient LED lights	Low	Short Term	4.9%	
Optimization of Supply Voltage	Low	Short Term	2.6%	
Replacement of ceiling fans with energy efficient brush-less DC (BLDC) motor fans	High	Long Term	3.8%	Thorough Investigation required under Level 3 Audit
Replacement of older ACs with energy efficient AC	High	Long Term	2.8%	
Replacement of plain windows with energy efficient glazed windows	High	Long Term	0.9%	
			Total : 16.9%	

Extrapolation of Energy Audit Data

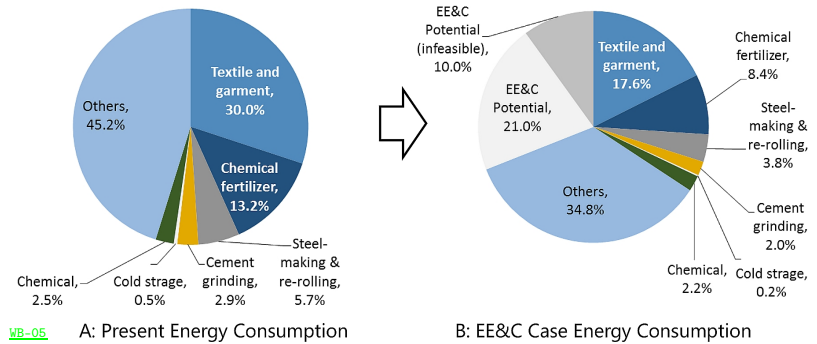


Energy saving and RE potential is extrapolated for more than 250 selected PWD maintained buildings in Dhaka region.

Findings-

Electricity saving potential: 11 to 15 million kWh per annum (est.)
Total Monetary savings: 11 to 15 Crores BDT per annum (est.)
Investment Need: 80 - 120 Crores BDT (est.)
Payback period: 7.6 years (est.)
CO₂ reduction: 7500-9000 tonnes per annum (est.)
Total Rooftop solar Potential: 62 MW (est.)

EE&C Potential of Industrial Sector



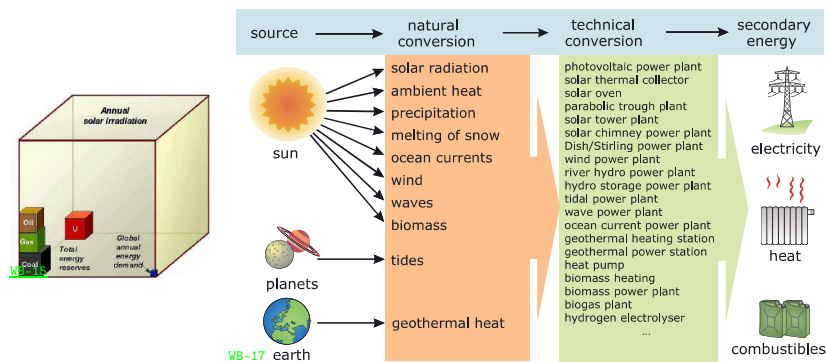
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Target Designated Energy Consumers

No.	Category	Criteria for DCs (Annual energy consumption toe)	Number of candidates for DCs
01	Chemical fertilizer factories	10,000	10
02	Paper and pulp industries	6,000	8
03	Textile industries: - Spinning, Weaving and dyeing,	3,000	15
04	Garments industries	3,000	7
05	Cement factories and clinker grinding factories	10,000	14
06	Iron and steel (rerolling mills)	10,000	23
07	Chemical and pharmaceutical industries	6,000	9
08	Glass industries	6,000	5
09	Ceramic industries	6,000	9
10	Transportation terminals (including seaports, airports, stations)	3,000	2
11	Commercial and institutional buildings (including office buildings, hotels, shopping malls, hospitals, educational facilities)	3,000	10
99	Other Industries and installations as published by government notifications	3,000	1
	Total		113

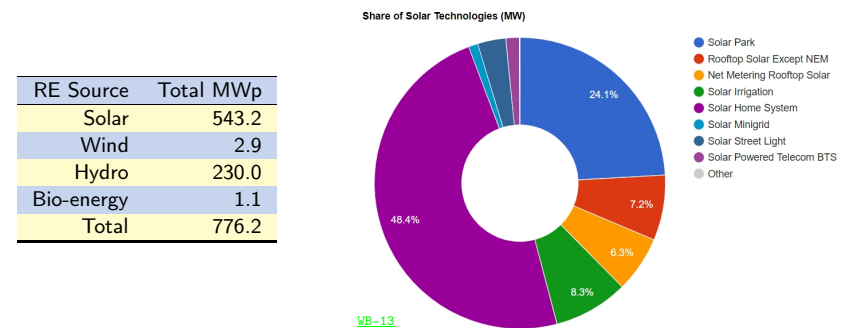
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Renewable Energy



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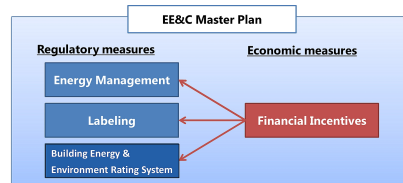
Renewable Energy: Bangladesh Status



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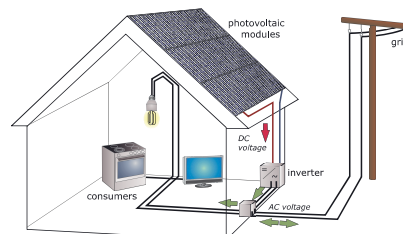
- As per the Renewable Energy Policy 2008, target is to produce 5 per cent of its total electricity from renewable sources by 2015 and 10 per cent by 2020.
- Our installed power generation capacity is about 24,000 MW. Renewable sources contribute about 3 per cent.

For energy efficiency:



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Grid integration renewable energy sources & net-metering



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Conclusions/Observations

- Excellent approach is in action to achieve **Greener Bangladesh**.
- Integrated, yet aggressive, work-plan & monitoring is needed.