



STATUS QUO ON PROMOTION OF ENERGY EFFICIENCY: BANGLADESH SCENARIO



SHEIKH FAEZUL AMIN
MEMBER (ADMINISTRATION)
SUSTAINABLE AND RENEWABLE ENERGY DEVELOPMENT AUTHORITY (SREDA)
POWER DIVISION, MINISTRY OF POWER, ENERGY AND MINERAL RESOURCES

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Country Profile

Official Name: The Peoples Republic of Bangladesh

Total Area: **147,570** sq. km

Latitude: 20°34' & 26°38'N

Longitude: 88°01' & 92°41'E

Capital: Dhaka

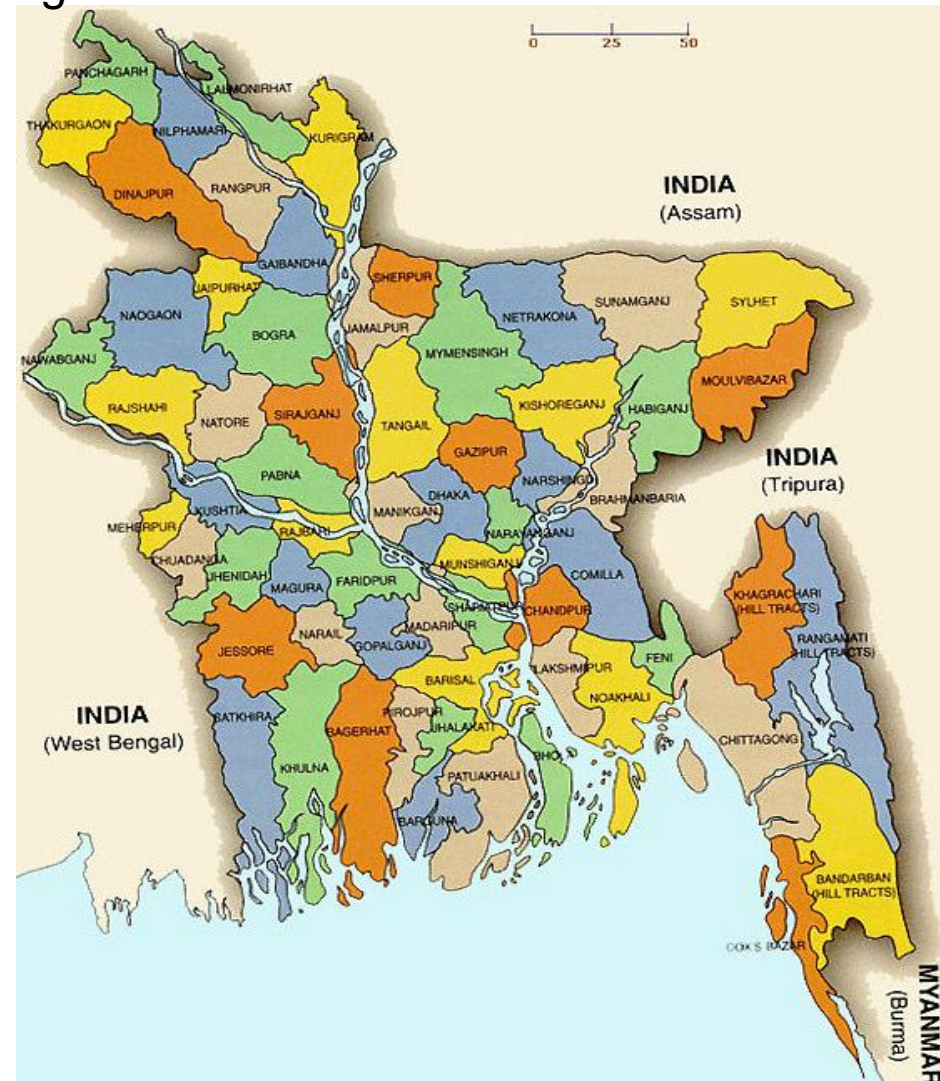
Population :**160** Million

Population Density: 1020/sq. km

Language: Bangla (Official), English

GDP/capita: US\$ **1115** (FY 2013-14)

GDP Growth Rate:**6.12**



Vision 2021

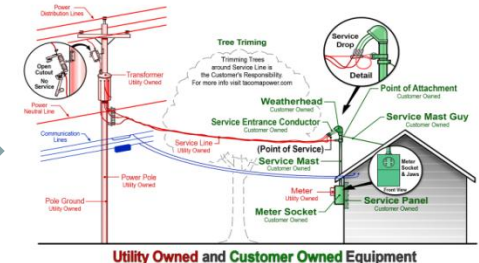
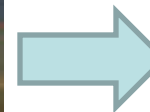
50 years of Independence in 2021

- * **Electricity for all by 2021**
(160+ million population with quality)

Sustainable development of energy sector with a view to ensure Energy Security of the country.

- * **Ensuring Energy Security with Sustainability**

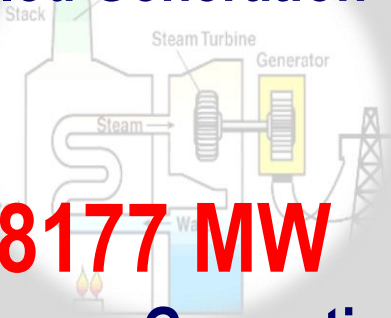
It is expedient to control global warming, to mitigate the risk of natural calamity gradually to lessen dependence on fossil fuel by promoting the use of renewable energy.



Energy Scenario of Bangladesh

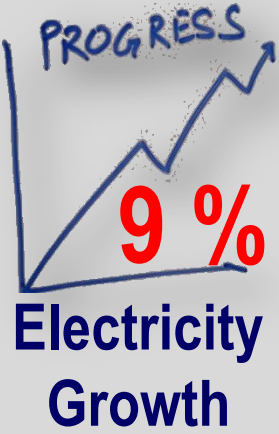
11877 MW

Installed Generation Capacity



8177 MW

Maximum Generation



Electricity Growth

13.5%
System Loss (T&D)

74%



Access to Electricity
(including off grid Renewable)

9695 km
Transmission Lines



326000 km
Distribution Lines

17.8 million



Total Consumer

371 kWh
Per Capita Generation
(including Captive generation)

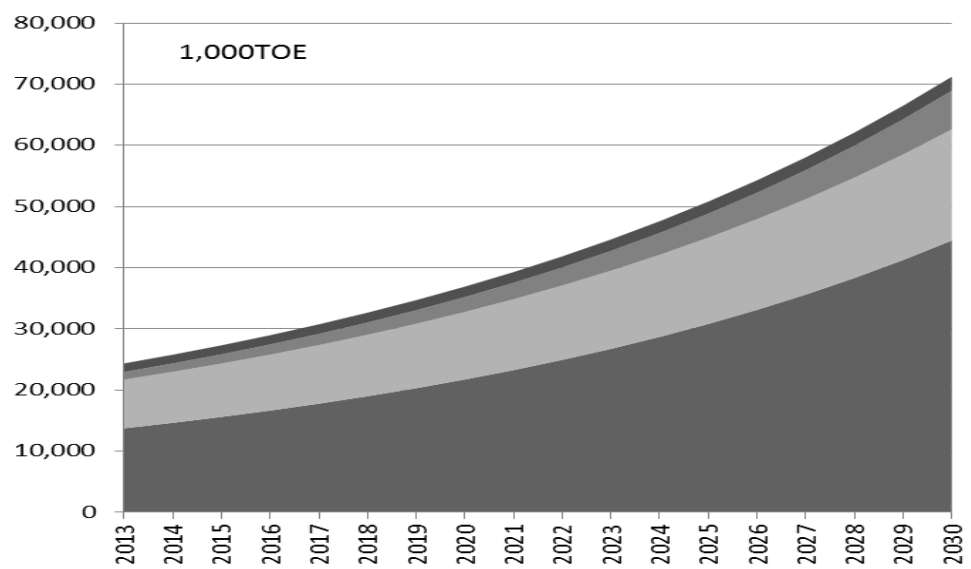
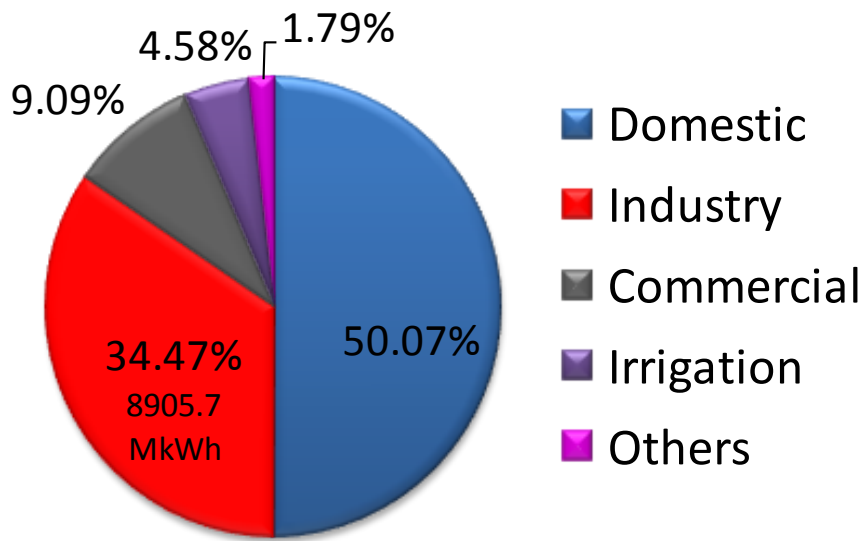
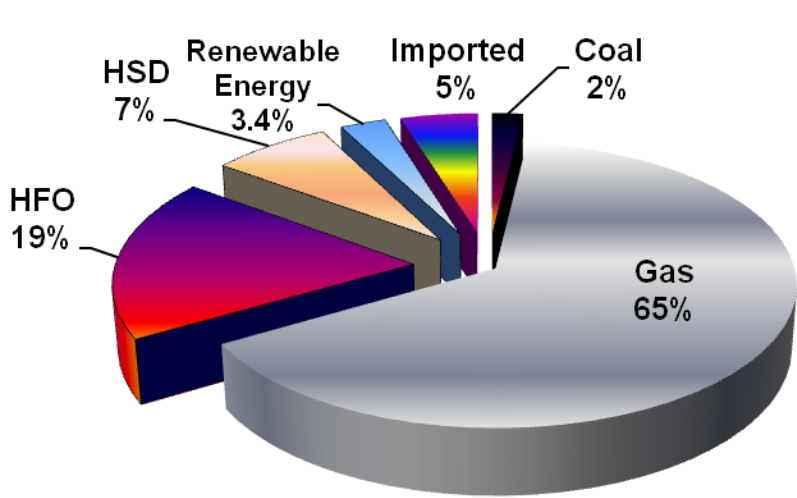
3.74 ~ 11.85
Cents/ kWhr



Retail Tariff

Energy Scenario of Bangladesh

Energy Generation by Fuel



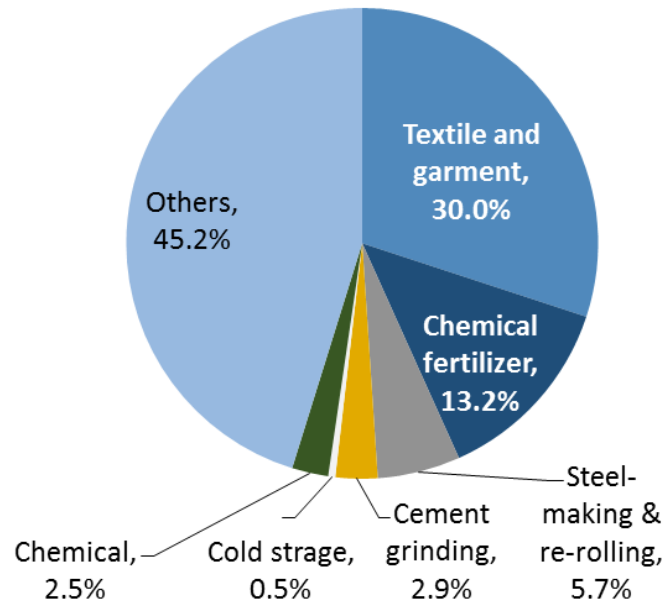
Electricity use by different sector

- Agriculture
- Commercial
- Residence
- Industry

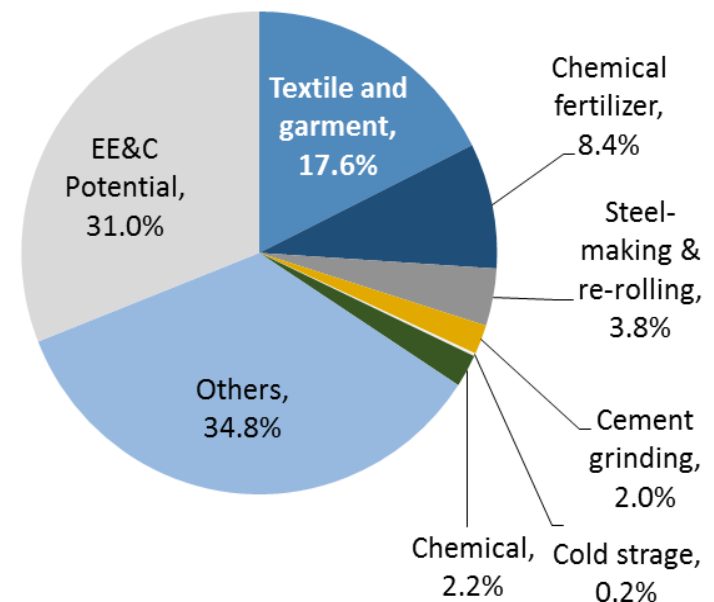
Forecast on Baseline of Primary Energy Consumption by Sector

EE&C Potential of Industrial Sector

Present energy consumption

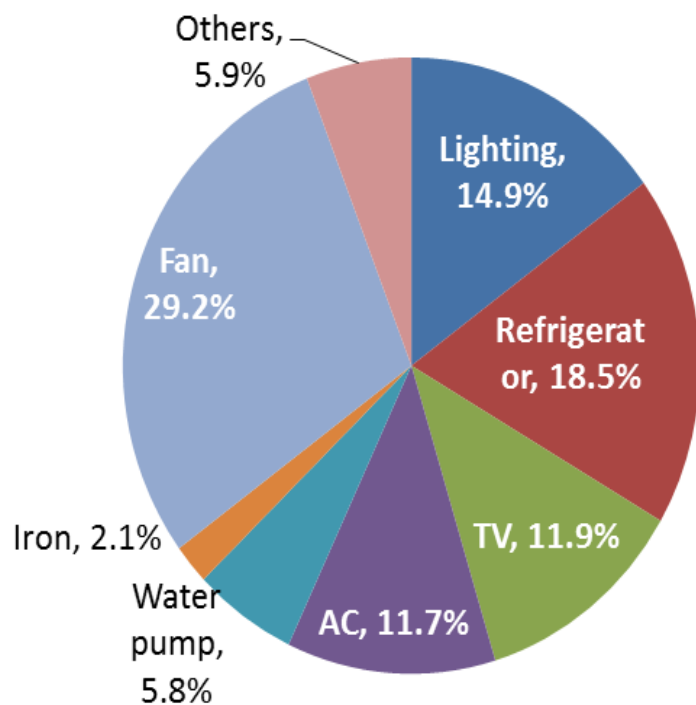


EE case energy consumption

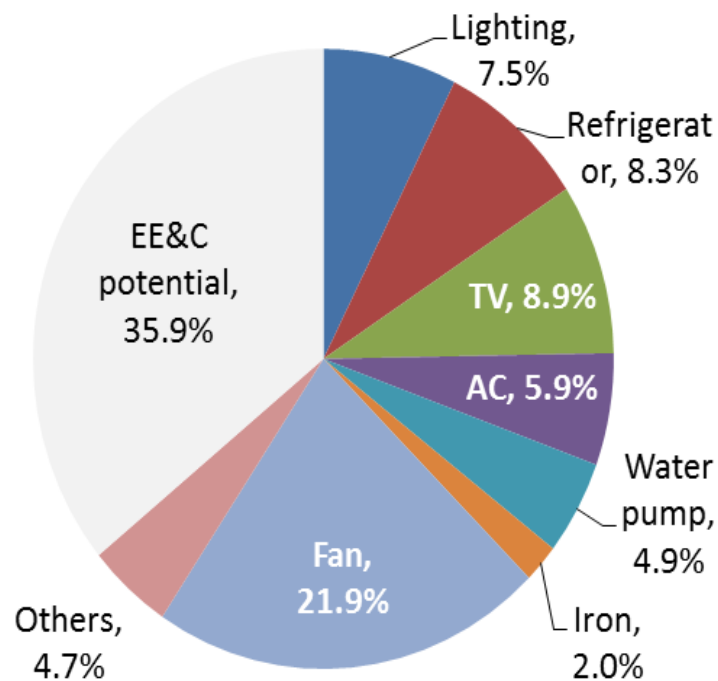


EE&C Potential of Electric Home Appliances

Present energy consumption



EE case energy consumption



Initiatives taken by the Government

- ❑ Energy efficiency measures, alternative and renewable energy subjects have been introduced in the national Text Book Curriculums;**
- ❑ Installation of energy saving CFL,T-5 tube light instead of incandescent bulb and replacement of electric ballast by magnetic ballast programs are going on;**
- ❑ Free CFL distribution program has been conducted to demonstrate the energy saving and cost saving benefits of CFL and now being encouraged the use of other energy efficient light like LED by the consumers ;**
- ❑ Introduction of Energy Audit System in the large designated consumers.**
- ❑ Gradual replacement of inefficient Brick Kiln to Efficient Brick Kiln (Zigzag & Hybrid Hoffman type)**
- ❑ Conversion of gas driven simple cycle power stations into combine cycle power stations;**

Initiatives taken the Government

- ❑ Revise the 'Building Code' incorporating energy efficiency and solar energy issues in the new building code;**
- ❑ Replacement of Inefficient Rice Per-Boiling Systems by Improved Rice Per-Boiling System;**
- ❑ Initiated public awareness program for energy conservation;**
- ❑ Gradual discontinuation of incandescent bulb and electric heater;**
- ❑ Limiting the use of air conditioners or keeping temperature 25 degrees Celsius and above;**
- ❑ Standardization of LED and solar PV products;**
- ❑ Energy Star Labeling Program for the imported/locally manufactured electrical appliances ;**
- ❑ Discouraging the use of neon sign in the markets and shopping malls at night;**

Energy Efficiency Achievement

1. 5 million CFL in a Day in 2010. Total 10.5 Million EE CFL bulb already distributed which saved 145 MW power.
2. Public awareness through motivation meetings.
3. Conversion of 11 simple cycle power plants to combined cycle power plants which will increase 1009 MW power generation in addition.
4. Significant number of waste heat recovery and cogeneration project implemented.
5. Energy audit conducted in 20 garment industries. Training provided to 43 persons for energy auditors.
6. Country Action Plan for Improved Cook Stove dissemination. Around 1.8 million improved cook stoves distributed so far.
7. Improved Rice Parboiling System (IRPS) in Rice Husking Mills. 65 nos. IRPS installed so far.
8. Switch off Schooling Program.
8. Use of Social Media for mass awareness-
 - a. Energy Efficiency Campaign Bangladesh @ Face book
<https://www.facebook.com/groups/eecbd/>
 - b. Energy Efficiency & Saving Campaign @ LinkedIn Group
http://www.linkedin.com/groups?gid=5111513&trk=my_groups-b-grp-v



Energy Efficiency and Conservation (EE&C)

The Government has set the following targets for energy saving:

**10% of Primary and Secondary
Energy Saving by 2015**



15% by 2021



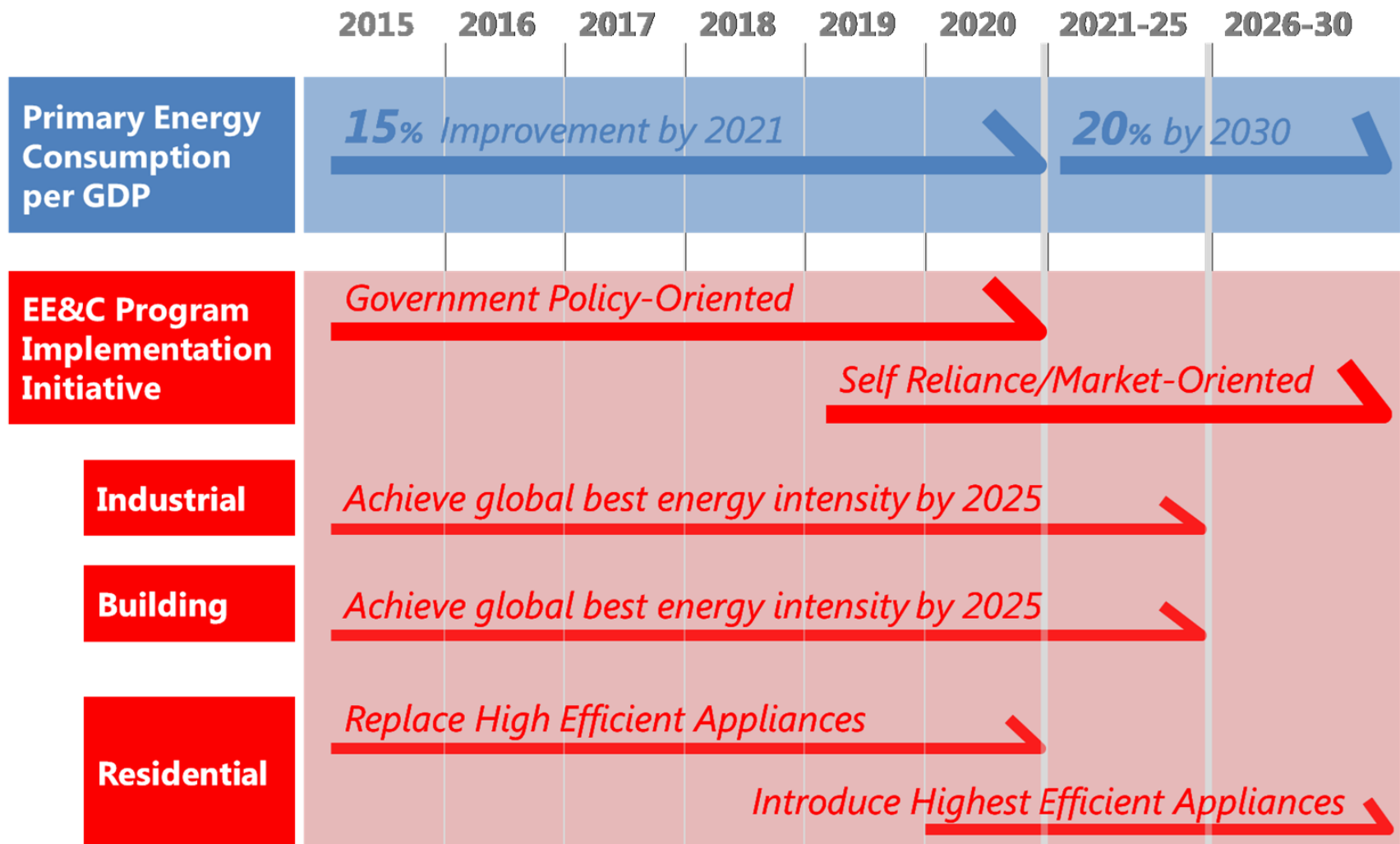
20% by 2030



**Energy Efficiency &
Conservational Master Plan
up to 2030**

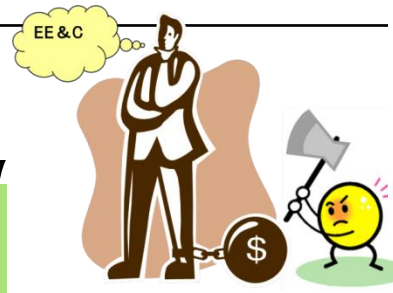
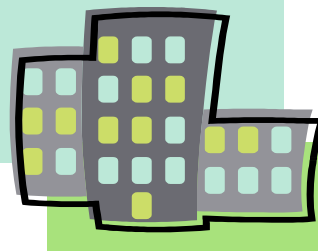
**39 Interventions in 3
major energy sector –
Industry, Commercial
and Residential**

Targets of Energy Efficiency & Conservation Master Plan- (2015-2030)



Programs identified under EE&C Master Plan

Programs	Issues and outputs
Energy management	Frameworks for regulations on Energy Management and Energy Auditing system, designation and benchmarking of large energy consumers (DC's), voluntary and mandatory energy management for DC's and their certification system.
EE labeling	Frameworks for regulation including data verification, laboratory test, measurement methods and star rating of household electric appliances.
EE buildings	Recommendation on the new national building codes and green building guidelines showing eligible measures to promote EE buildings
Financial incentive	Financial incentive programs for energy saving projects/activities.
Awareness and database	Awareness raising among mass people and database for EE&C potential



1. Energy Management Program

The criteria of Designated Consumer(DC)s' annual primary energy consumption were decided, based on the energy consumption data and the results of energy audits for typical large energy consumers. Considering the limitation of SREDA's human resource, the number of DCs for the first stage is targeted **around 100**. DC's criteria are proposed as **3 categories** as **10,000 toe**, **6,000 toe** and **3,000 toe**. The estimated target number of companies is **110 to 120**, which covers **31% of primary energy consumption** in industrial sector. Energy management for DCs includes appointment of Energy Managers and implementation of energy audits conducted by Energy Auditors

SREDA will develop the capacity of these energy experts, through training programs such as university curricula, internal training courses in establishments, publication of educational materials, introduction of success experiences from abroad etc.

Application system through SREDA web-site has been developed. The form can be widely used by establishments in both DCs and non-DCs.

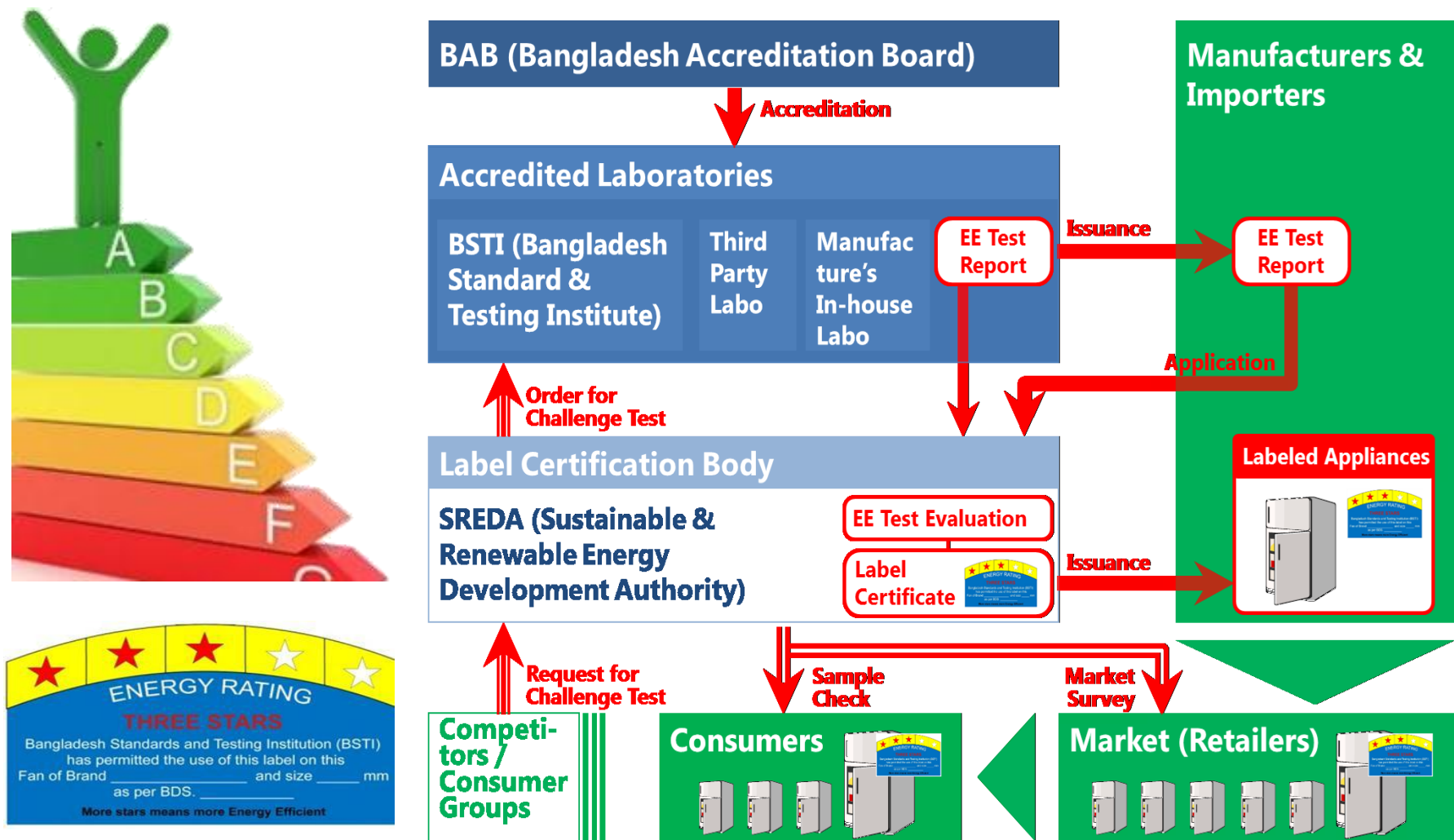
2. EE Labeling Program

Framework of EE Labeling Program is a set of common rules, covering all appliances like CFL, refrigerator, AC, TV, electric fan, electronic ballast, induction motor. The regulation can give administrative power on the relevant Bangladesh Standards (BDSs) by means of introducing BDSs, in which EE measurement methods are fully stated. Penetration of high efficiency appliances contributes not only to the reduction of energy consumption but also to the reduction of peak load demand.

SREDA will start EE Labeling Program as a voluntary basis and shift to mandatory, in order to spread the program through all parties. In case of the mandatory program, the Government must provide EE testing service for the all manufacturers and importers, which want to get EE data on their products.

2. Labeling Program

Testing , Accreditation and Label verification System



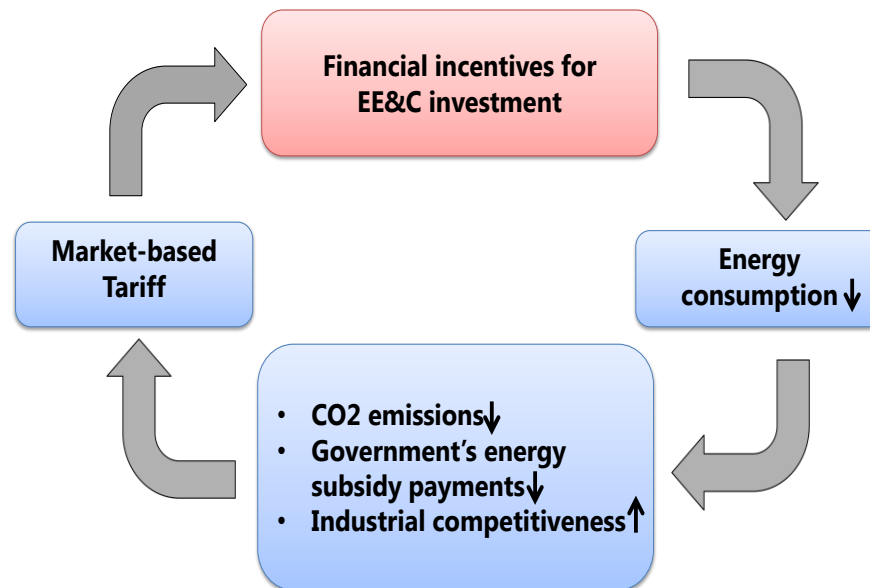
3. EE Building Program

EE Building Program is intending to find an adequate balance between building construction for promoting and enforcing the materials and processes that are environmentally responsible, and resource-efficient throughout a building's life-cycle: from design to construction, operation, maintenance, renovation, and demolition. The revision of the existing Bangladesh National Building Code (BNBC) is underway and it will incorporate Energy Efficiency issues.

Furthermore, Green Building Guideline (GBG) is a voluntary program that provides recommendations not only on energy and water use efficiency, but also on reduction of overall environmental impact caused by building construction, usage and demolition. GBG will be completed by 2025 and will enter into the implementation phase after that.

4. Financial Incentive Programs

Financial support is a key component to disseminate EE&C policies and activities. Financial incentives like subsidies, preferential taxation and low interest loans—could facilitate widespread execution and dissemination of EE&C programs. Financial incentives will bring a positive economic impact, which will help the government to adopt a market-based pricing system.



Virtuous Circle of Financial Incentives

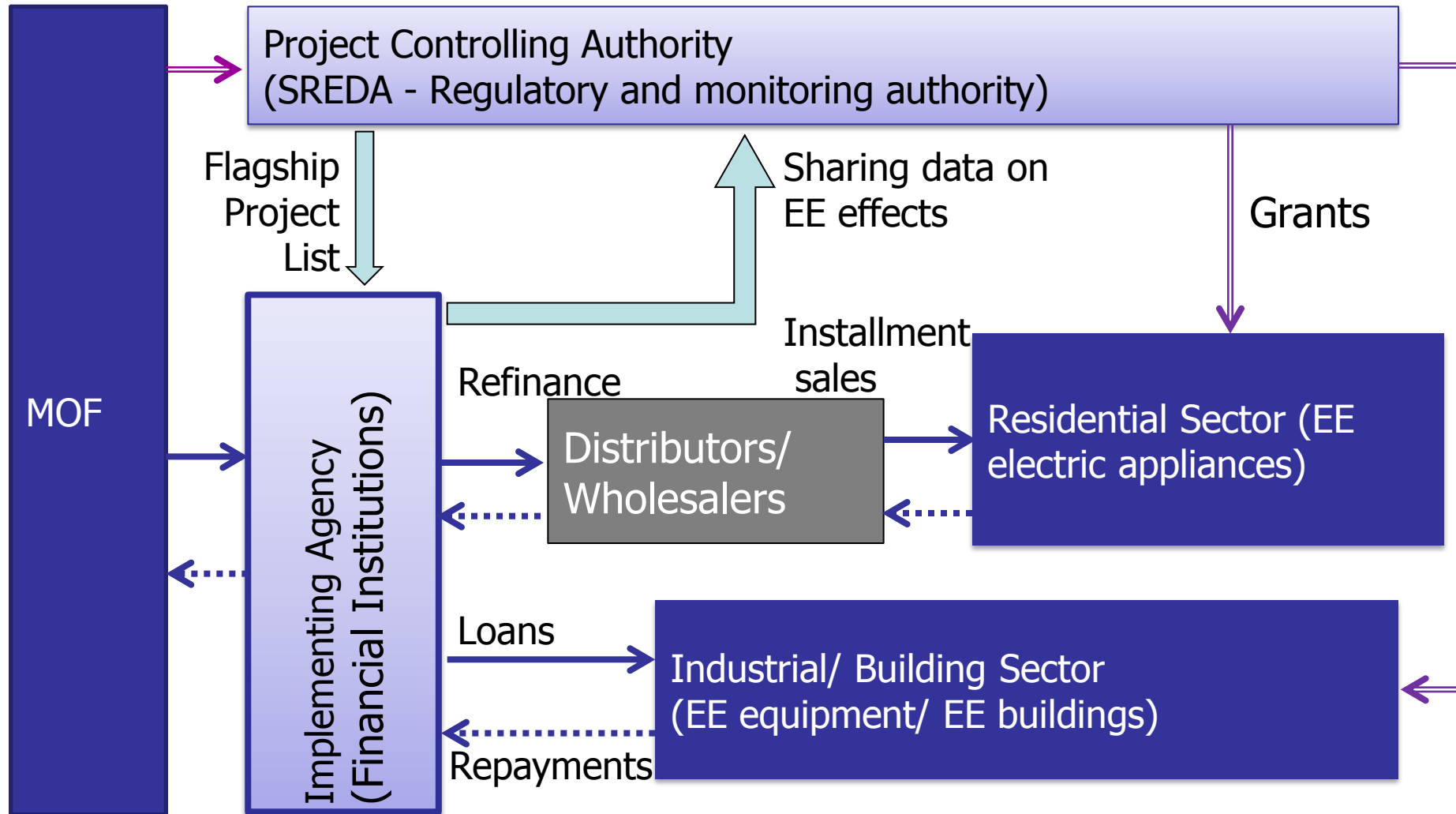
4. Financial Incentive Programs

Financial Incentives for EE&C Promotion

	Examples	Countries
Subsidies	<ul style="list-style-type: none">• Investment subsidies• Rebate program• Buy-down grants• Bilateral Offset Credit Mechanism (BOCM)	Japan, China, Singapore, South Korea, Thailand, etc.
Preferential Taxation	<ul style="list-style-type: none">• Tax exemption• Tax reduction• Accelerated depreciation	Japan, China, Singapore, South Korea, etc.
Low-interest Loans	<ul style="list-style-type: none">• Government support loans• ODA loans	Japan, India, Malaysia, Thailand, etc.

4. Financial Incentive Programs

Low-Interest Loan Scheme



5. IT & Awareness Program

- ❖ SREDA is carrying out seminars, workshops, meeting with stakeholders and focus group discussion for target energy consumers monthly.
- ❖ The EE&C school program initiative will be formulated focusing on school children. Through the discussion with their parents and knowing their present energy consumption condition, the children can understand what energy consuming appliances are, and how to save them etc. SREDA will conduct EE&C school program, which will be a joint program with Ministry of Education. The target of this school program will be students under 15 years old in primary and secondary School. The following actions will be adopted in school/university curricula:
 - **Showing of video clips and documentaries on EE&C practices and their benefits.**
 - **Organizing spot quiz.**
 - **Introducing educational posters for EE&C in schools/universities.**
 - **Organizing thematic art competition.**
 - **Motivational talks by experts or professionals**
- ❖ The School/University Text Book Board will review the curricula periodically to incorporate RE and EE&C issues.

5. IT & Awareness Program

- ❖ Media campaign will be implemented through effective media, such as televisions, newspapers and advertising boards, discussions, street campaigns, school campaigns, competitions with prizes, etc. SREDA will conduct media campaigns in cooperation with related governmental and/or private organizations and programs

Existing Policy and Regulatory Framework

National Energy
Policy

EE identified as third fuel

Environment
Conservation Rules

Set the Emission standard

EE Building Code

Revised NBC incorporate EE issues

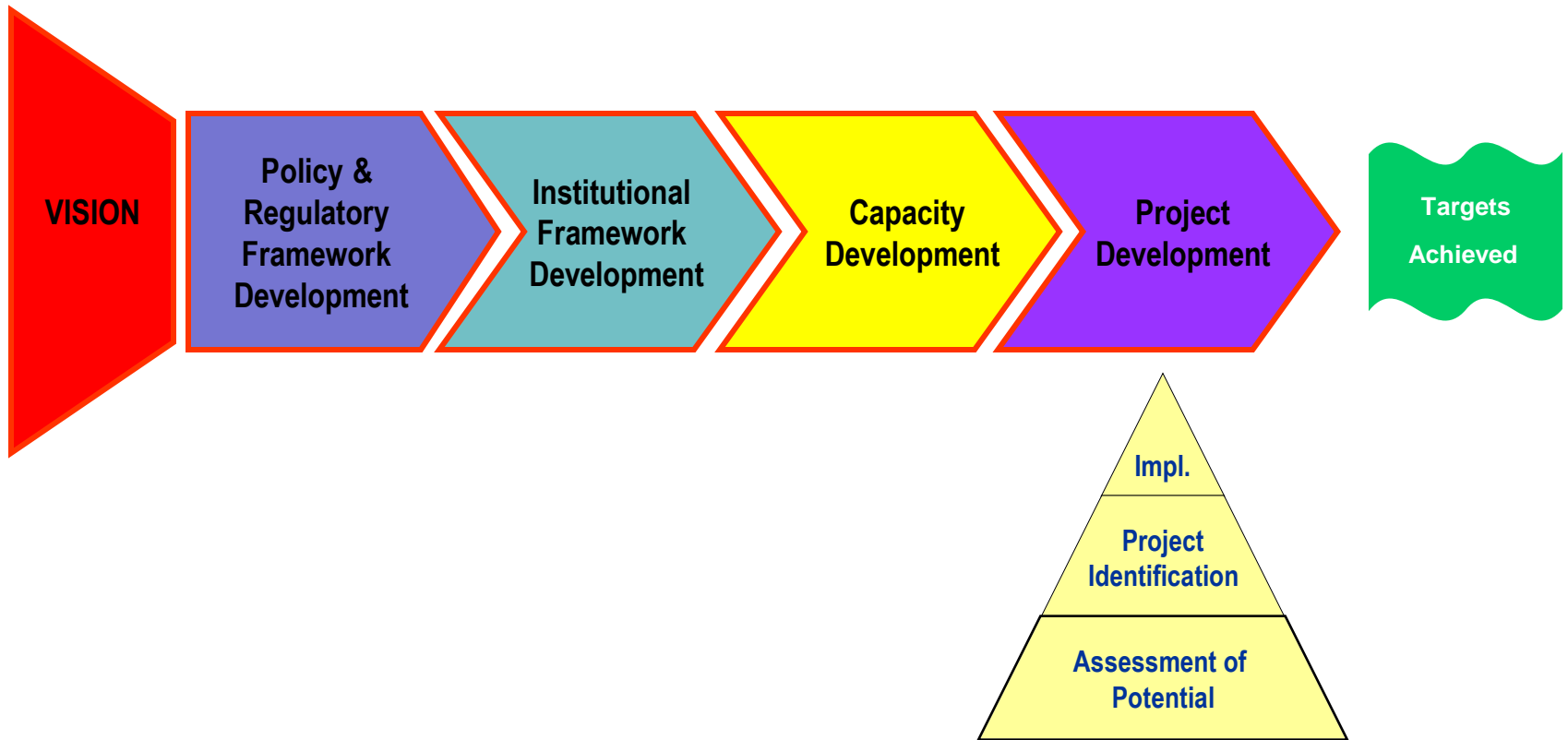
EE Road Map

19 EE measures identified

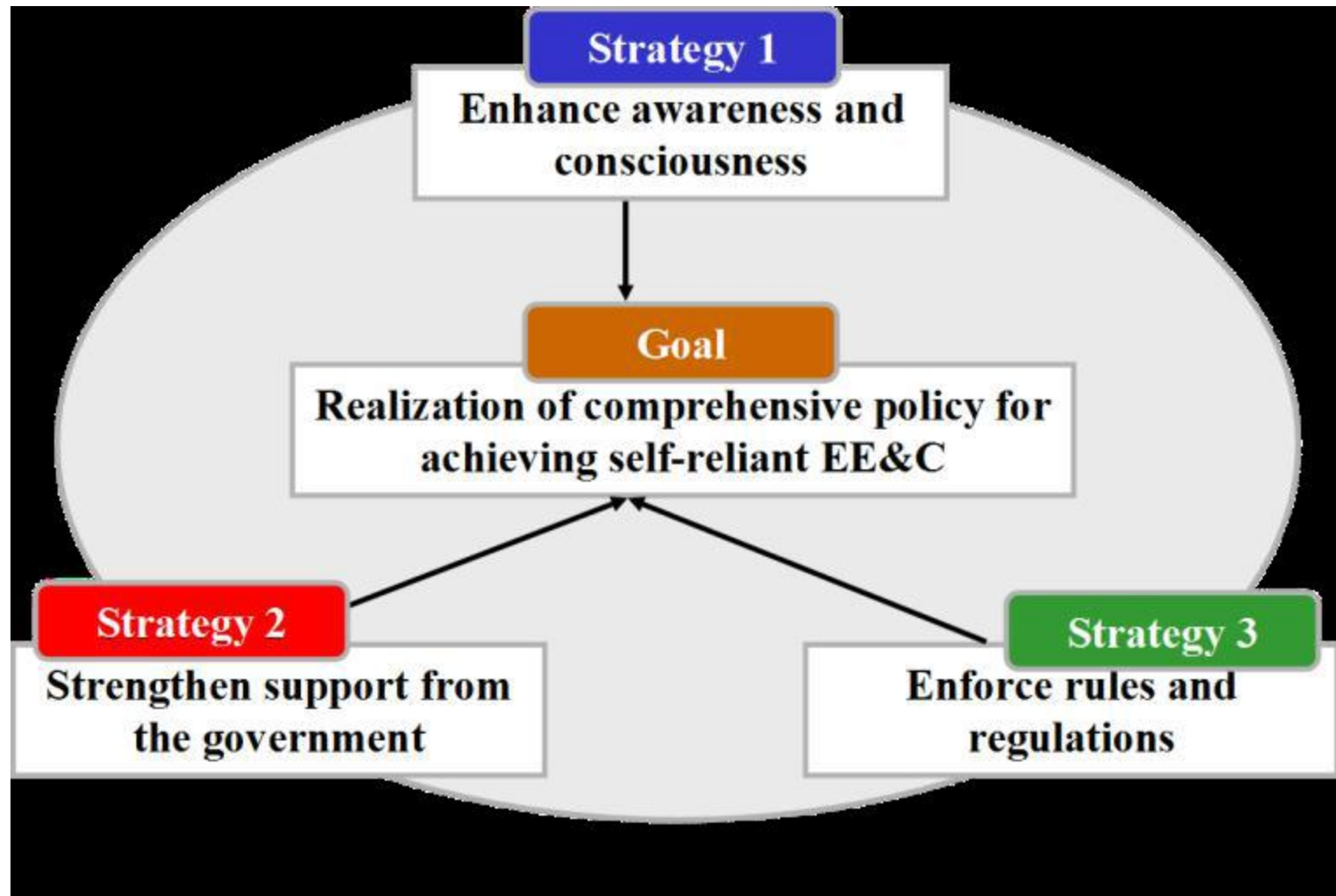
6th Five Year Plan

Improve 10% Energy Efficiency by
2015

Energy Efficiency Development Roadmap



Three Strategies for realizing self reliant EE&C



Photographs of some activities

Honorable president and PM distributing prizes among winners of EE Week



Honorable PM distributing Solar lanterns to poor and pro-poor people

Photographs of some activities

Switch off Schooling Program



Essay competition for the School children



Traditional Cook stove-
produces smoke and pollutes air

Improved Cook Stove-
safe & environment friendly





Traditional Rice Parboiling System

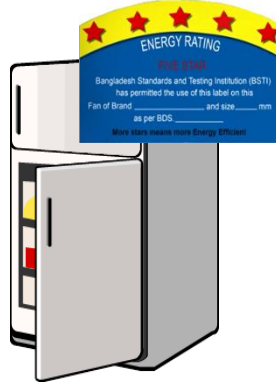


Improved Rice Parboiling System

How to implement EE&C programs effectively



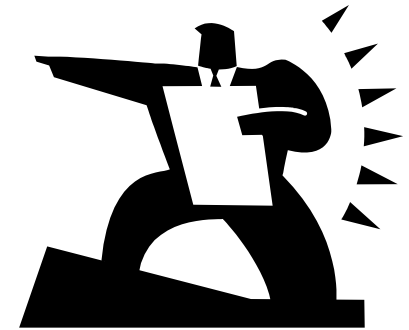
Energy Management



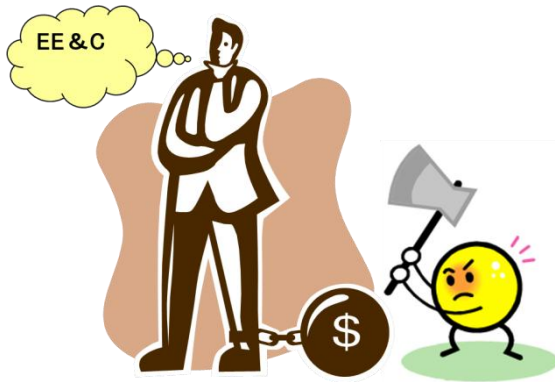
EE Labeling



EE Building



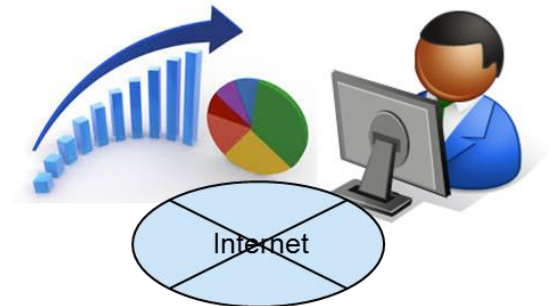
Government Own Initiative



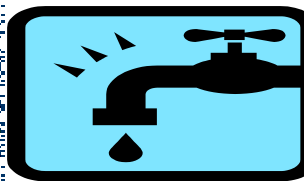
Finance Incentive



Climate Change Mitigation



IT & Awareness



Thank You for Your kind Attention



Sheikh Faezul Amin

Member (Administration)

E-mail: faez_1965@hotmail.com

Sustainable & Renewable Energy Development Authority (SREDA)

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