BEYOND COAL

Scaling up the Clean Energy

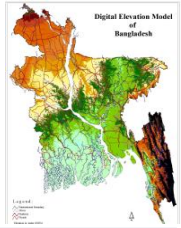
Session: Renewable Energy

Md Shamsuddoha

10 January 2017

GENERAL OVERVIEW

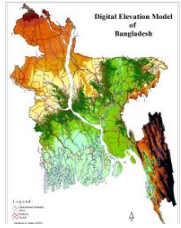
Bangladesh and It's Energy Sector

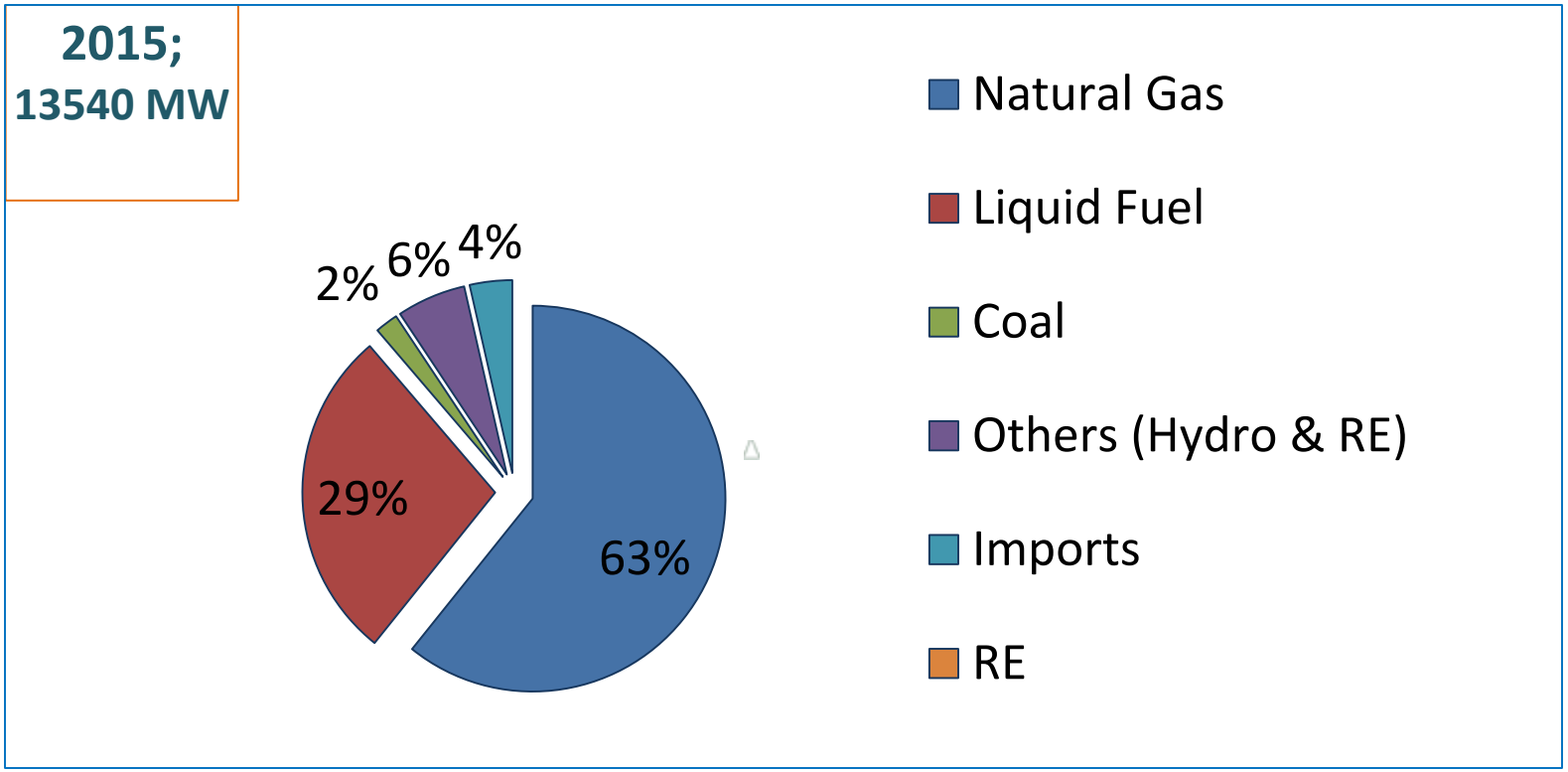


Area	147,570 sq kilometers
Population	165 million
GDP growth:	6.5 in FY 2014-15
Per capita income	US$ 1,314
Access to Electricity	72%
Per capita electricity generation (captive)	371 kWh
Total installed capacity	13540 MW
Present Generation Capacity	6350-7200 MW
Energy Trade	500 MW from India
Private sector investment in generation	43%
Target to supply electricity for all	by 2021

GENERAL OVERVIEW

Share of primary energy in power generation





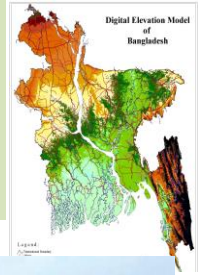
Share of Renewable with Hydro 6%; excluding Hydro less than 1%

Share of coal is less than 2% in 2015

Share of natural gas still dominates though in decreasing trend

GENERAL OVERVIEW

Challenges : Primary energy crisis and inequality



Biomass dependency

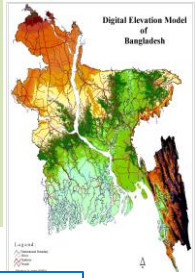
Import of fossil fuel

Energy Inequality

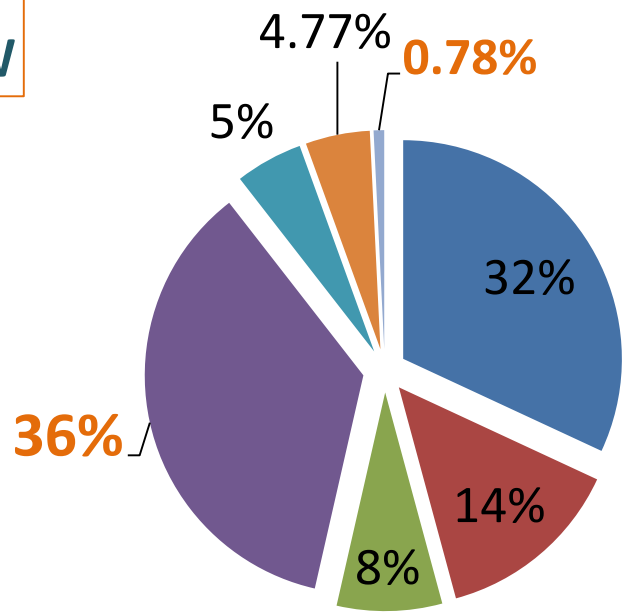
Diminishing Natural gas

OVERCOMING CHALLENGE: Target by 2020

Power generation from dirty energy sources !



2020: 23000 MW



- Natural Gas
- LNG
- Duel Fuel
- Coal
- Hydro
- Imports
- RE

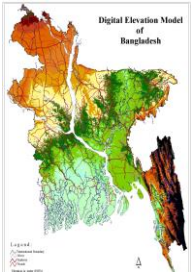
Share of Renewable is less than 1%

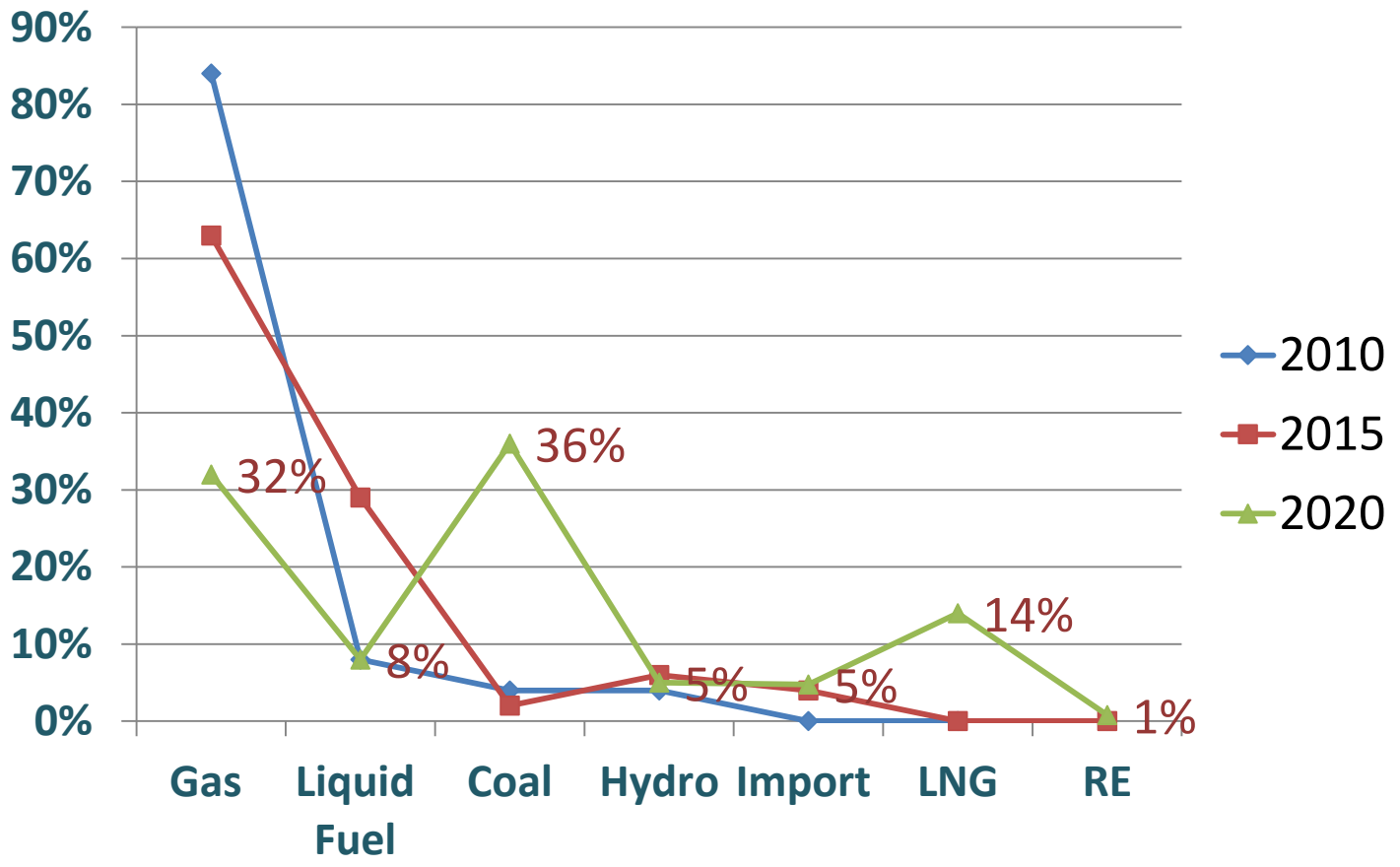
Share of coal increased form from 4% in 2010 to 36% in 2020

Share of natural gas decreased form 84% in 2010 to 32 in 2020

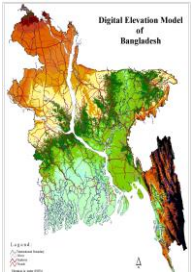
COMPARISN of POWER GENERATION at 3 FYPs

Major policy shift towards conventional sources





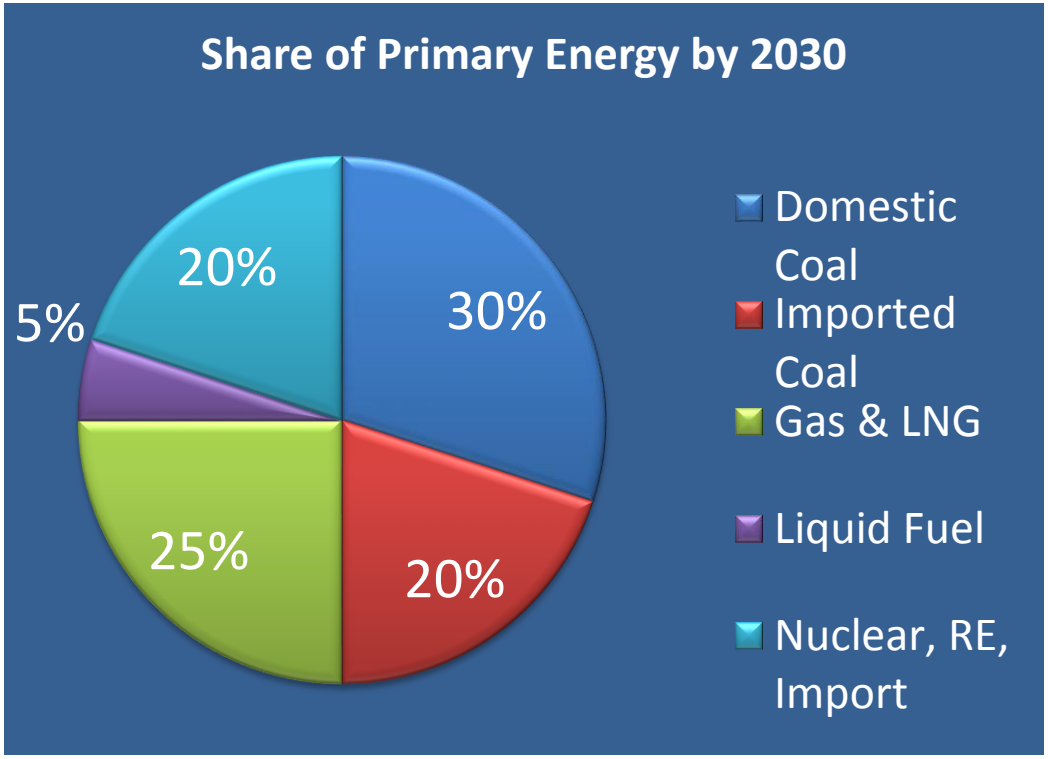
POWER GENERATION TARGET by 2030 and 2041:
FOCUS: Power generation from conventional sources



Installed generation capacity 40000 MW by 2030, and 57,000 including imports of 8,500 MW by 2041 (Energy and Power 2016).

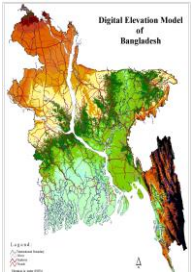
Primary Energy:

Domestic coal: 30%,
imported coal: 20 %,
Gas (incl LNG): 25%,
liquid fuel: 5%,
Nuclear, RE
and Import : 20%.



POWER GENERATION TARGETS

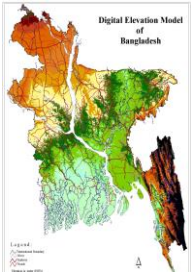
Share of Renewable Energy



The Power System Master Plan 2015 sets a target of;

- 2000 MW (out of 24000 MW, **8%;)** by 2021,
- 4000 MW (out of 40000 MW, **10%)** by 2030 and
- 6500 (out of 57000 MW, **11.4%)** by 2041 from renewable sources (Hossain, M, . 2016)

WHY WE NEED SO MUCH POWER?

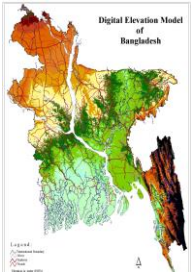


To become middle income country by 2021: Vision 2021 and Outline Perspective Plan 2010-2020, and developed country by 2041

Principle: Rural based **agrarian economy** towards a **urban-based manufacturing and services** supported by steadily incremental level of power supply'

Vehicle: *6th FYP (2011-2015) and 7th FYP (2016-2020)*

Progress so far: Consistently achieved an impressive GDP growth, **6 percent for a number of years** and recently moved up to 6.5 percent with increased level of power supply and **demand; 10 % per annum**,.



WHY SO MUCH FOCUS ON COAL ??

We have a coal reserve of 3, 300 million tons

Second lowest power generation cost

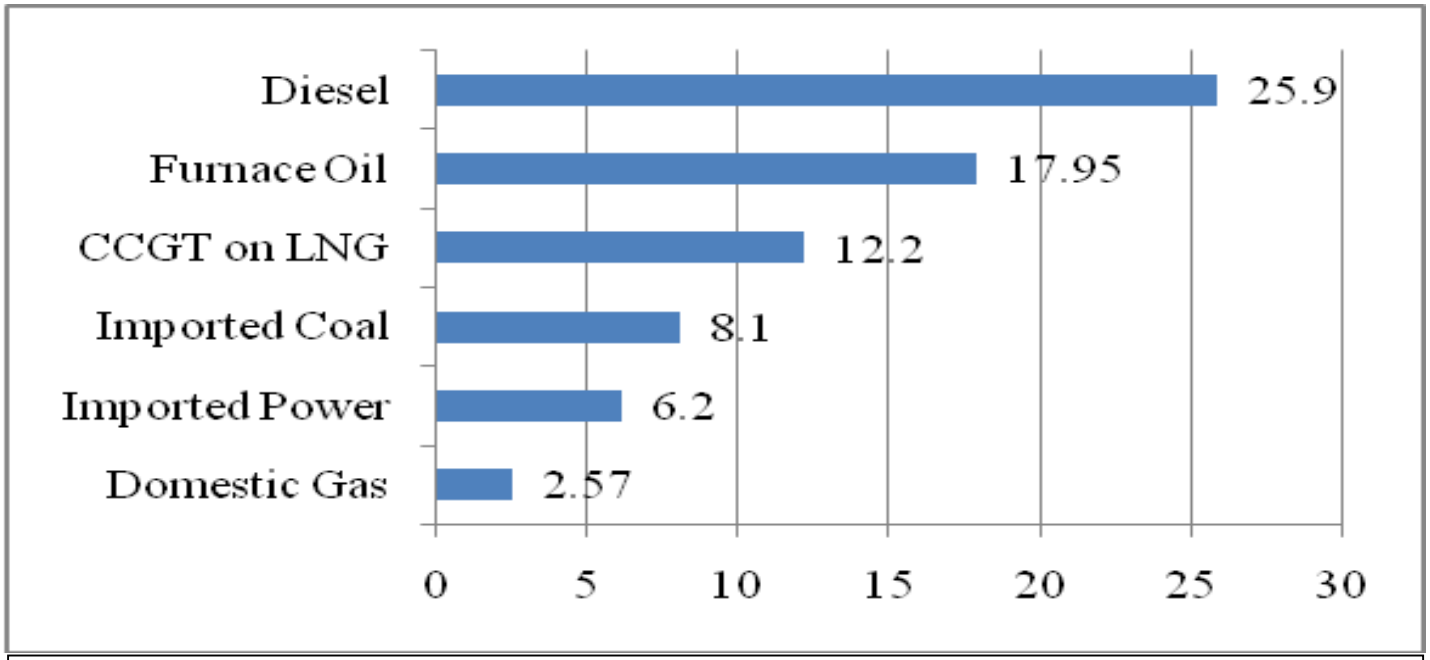
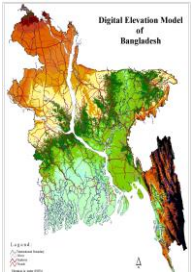


Figure : Unit cost of power generation (TK./per kWh)
Source: 7th Five Year Plan of Bangladesh

POWER GENERATION TARGET
WHY WE SHOUD FOCOUS MORE ON RE NOT COAL



BECASE OF SDGs and Paris Climate Deal 2015

SDG 7. Ensure access to affordable, reliable, sustainable and modern energy for all.

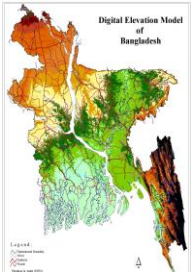
Key Targets:

By 2030, ensure universal access to affordable, reliable and modern energy services

By 2030, increase substantially the share of renewable energy in the global energy mix

By 2030, double the global rate of improvement in energy efficiency

FURTHER ON POWER GENERATION TARGET
WHY WE SHOUD FOCOUS MORE ON RE NOT COAL



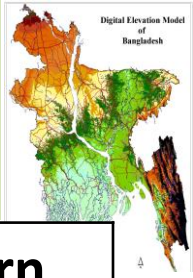
Paris Climate Deal 2015

Legally Binding Target: *hold the increase in global average temperature well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C,*

Essential Requirements: Decarbonization of energy sector by 2040/ or 2050 is inevitable, which implies

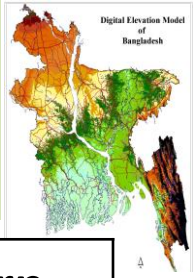
Almost complete phase out of fossil fuels – unless large-scale economically viable Carbon Capture and Storage (CCS) technology is made available.

HOW TO PROMOTE RENEWABLE ENERGY



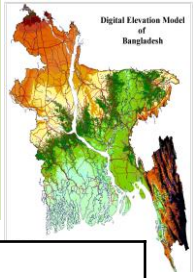
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	
Key Targets	**Suggested Measures**
Ensure universal access to **affordable, reliable and modern energy services** by 2030	Identify **appropriate RE options** to ensure affordable and reliable energy services to the remote areas. Increased public and private investments and incentives to establish **mini solar grid, nano solar grid** for sustained power generation and supply not only meeting HH electricity demands but also **to support irrigation and SME production**
	Implementing **RE tariff, known as Feed in Tariff'** regulation.

HOW TO PROMOTE RENEWABLE ENERGY



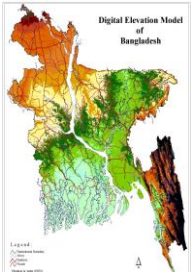
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	
Key Targets	**Suggested Measures**
By 2030, **increase substantially the share of renewable energy** in the global energy mix	**Accountability arrangement of SREDA** and Power Division for achieving RE targets Lion share of '**Green Transformation Fund' USD 200 million** to be invested for RE generation and supply in the remote and disadvantaged areas Public and private investment for developing RE workforce, **especially rural women**, in **manufacturing, installation and repair of solar power equipment and bio-gas plants**..

HOW TO PROMOTE RENEWABLE ENERGY



Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	
Key Targets	**Suggested Measures**
By 2030, double the global rate of improvement in **energy efficiency**	Invest in awareness raising and development of IC materials for **behavioral change** Women should be involved as **a 'change agent'** in energy conservation both in urban and rural areas. Invest in awareness raising and development of IC materials on benefits of ICS while ensuring **ICS in every household by 2020**. **Bangladesh Climate Change and Gender Action Plan 2013** could be considered as a key policy document for integrating gender into low-carbon development.

HOW TO PROMOTE RENEWABLE ENERGY



Paris Climate Deal 2015	
Key Targets	**Suggested Measures**
NDCs will contribute implementation of 2015 Paris Climate Deal that is legally bound to **keep global temperature rise well below 2 degree C, conveniently to 1.5 degree C**.	Implement an **appropriate legislative actions** for the transition to a low-carbon economy Bangladesh should undertake a **long-term plan for phased divestment from the dirty energy** sources and gradual increase in RE investment.

ICCCAD
International Centre for Climate Change and Development
at
Independent University, Bangladesh
in partnership with BCAS and IED

THE GOBESHONA CONFERENCE FOR RESEARCH ON CLIMATE CHANGE IN BANGLADESH
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