



# Knowledge Co-Creation Program Energy Policy

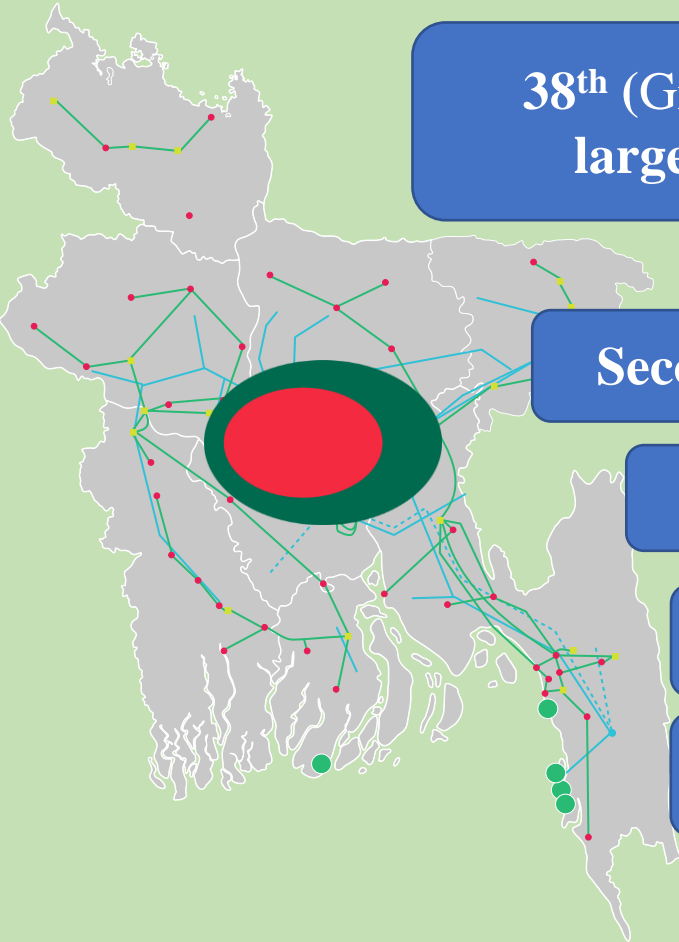
## Country Report: Bangladesh

**Power Cell**

**Power Division**

**Ministry of Power, Energy and Mineral Resources,  
Bangladesh**

# Bangladesh



**38<sup>th</sup> (Gross domestic product 2020 )  
largest economy in the world.**

**Second largest garment exporter**

**7<sup>th</sup> fish producing country**

**4<sup>th</sup> rice producing**

**3<sup>rd</sup> vegetable producing**

**Sundarban biggest mangrove forest**

**Cox's Bazar longest natural sea beach**

**\$ 365 bn**  
GDP Total

**\$ 45 bn**  
Foreign Reserve






**7.86%**  
GDP Growth Rate

**72 yrs**  
Life Expectancy

**40.4 bn**  
Export

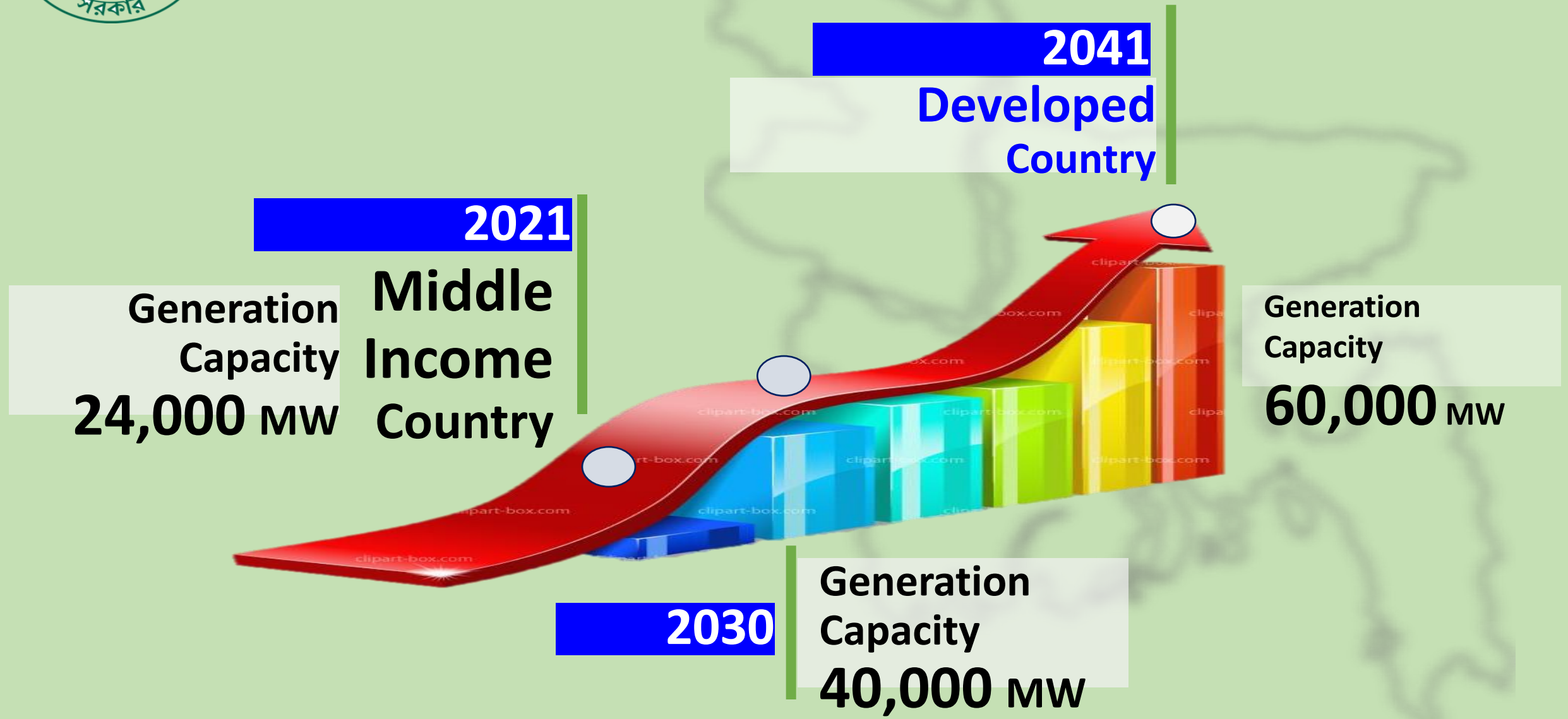
**160 million**  
Population

**147,610 sq km**



# Government's Vision



# Energy Division



To achieve energy security for the country through supply of sustainable energy services for all at affordable prices and exploit mineral resources in an environmentally sustainable manner.

# Power Division



Providing reliable electricity to all at an affordable manner



# Bangladesh Energy Scenario







# ENERGY TRILEMMA INDEX 2020

## Bangladesh

Three core dimensions of the index

	ENERGY SECURITY	Score <b>39/100</b>
	ENERGY EQUITY	Score <b>50.4/100</b>
	ENVIRONMENTAL SUSTAINABILITY	Score <b>56/100</b>

- Bangladesh moves up **20** notches from previous year's ranking
- Bangladesh among the top five improvers
- Overall Trilemma scores increases **38%**
- **93.5%** of the people in Bangladesh had access to electricity in 2019: BBS

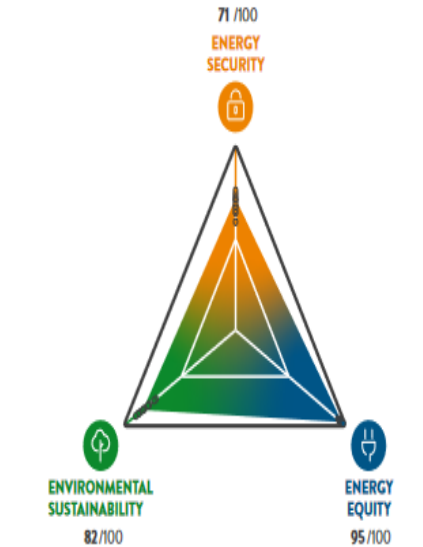
## Asian countries and their 2020 Trilemma Index scores



# 2020 TOP PERFORMERS AND IMPROVERS

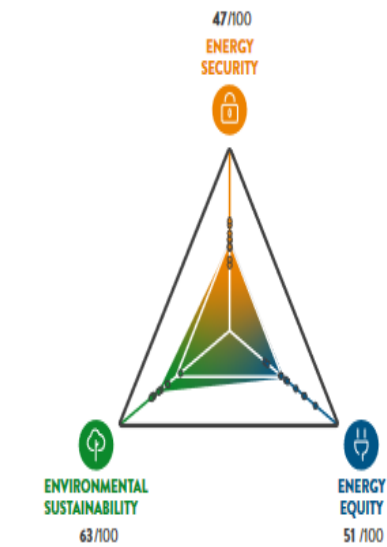


## TOP 10 RANK OVERALL PERFORMERS



Rank	Country	Grade	Score
1	Switzerland	AAAa	84.3
2	Sweden	ABAa	84.2
3	Denmark	AAAa	84.0
4	Austria	AAAa	82.1
4	Finland	ABAa	82.1
5	France	AAAa	81.7
5	United Kingdom	AAAa	81.7
6	Canada	AABa	81.5
7	Germany	AAAa	80.9
8	Norway	BAAa	80.5
9	United States	AABa	79.8
10	New Zealand	AAAa	79.5

## TOP 10 COUNTRIES OVERALL IMPROVERS



Rank	Country	Grade	Score	Improvement since 2000
91	Cambodia	DDDd	50.8	77%
89	Myanmar	BDCd	54.3	50%
89	Kenya	BDBc	54.3	41%
94	Bangladesh	DDDd	47.8	38%
75	Honduras	CCBc	60.5	36%
88	Ghana	CDBc	55.3	36%
82	Nicaragua	CCBd	57.9	34%
101	Ethiopia	DDCd	43.1	33%
83	Tajikistan	DCCd	57.1	30%
87	Mongolia	DBDc	55.5	28%

TRILEMMA INDEX 2020

## CO2 emissions (metric tons per capita): 2018

United States	15.2
Japan	8.7
Singapore	8.4
Switzerland	4.4
Sri Lanka	1.0
India	1.8
Maldives	3.7
Pakistan	1.0
Bangladesh	0.5
Lower middle income	1.7
World	4.5

# Energy Sector: At a Glance



Number of gas fields in production	: 20
Present gas production capacity	: 2,752 mmcfd
LNG Import	: 1,000 mmcfd
<b>Total</b>	<b>: 3,952 mmcfd</b>
Daily gas demand of Existing Customers	: 3,658 mmcfd
Coal Reserve in 5 Fields	: 7,962 million ton
Average Daily Coal Production	: 3,000-3,500 m ton
Present LPG Consumption per annum	: 1.0 million ton



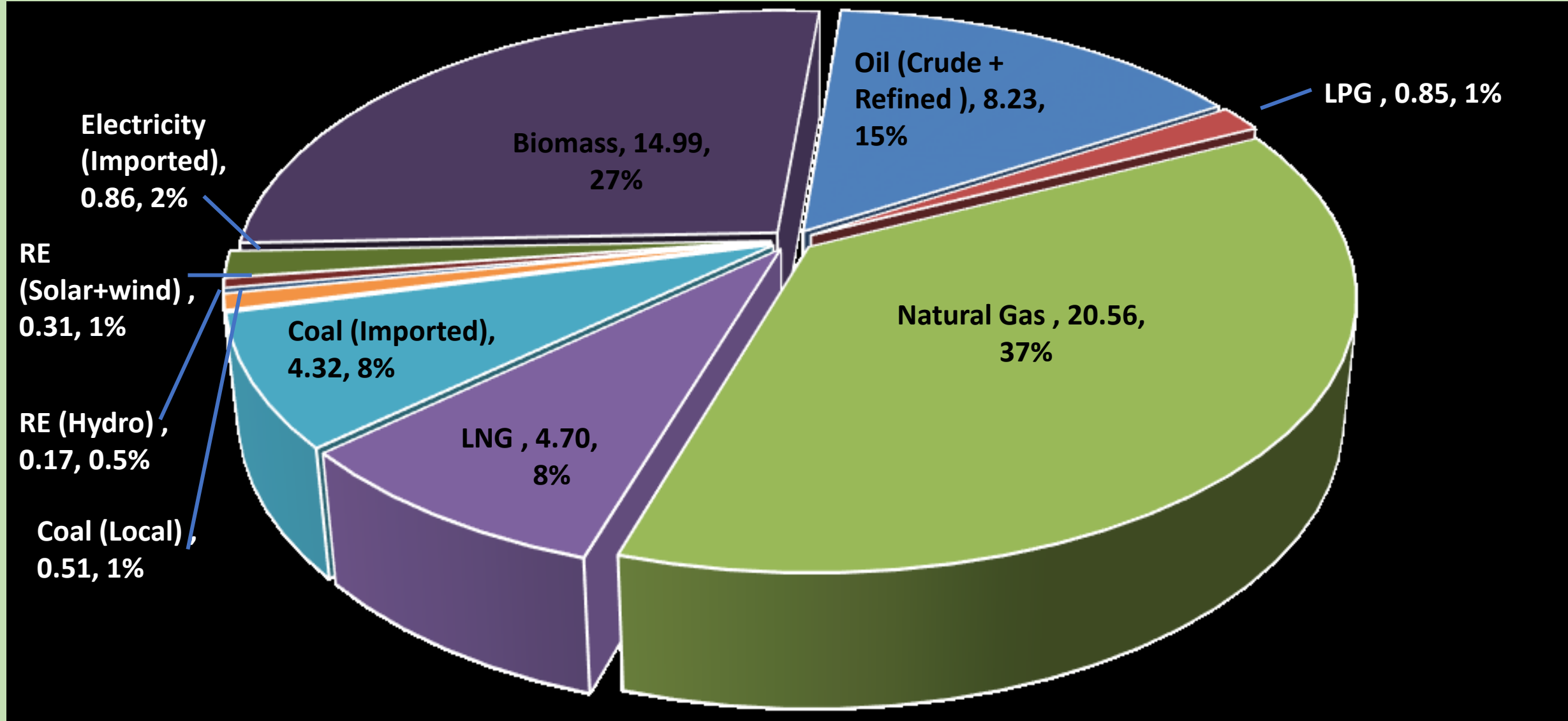
# Primary Energy, 2019-20



Name	Unit	Unit	Mtoe
<b>Oil (Crude + Refined )</b>	<b>K ton</b>	<b>8234</b>	<b>8.23</b>
<b>LPG</b>	<b>K ton</b>	<b>854</b>	<b>0.85</b>
<b>Natural Gas</b>	<b>Bcf</b>	<b>886.93</b>	<b>20.56</b>
<b>LNG</b>	<b>Bcf</b>	<b>202.88</b>	<b>4.70</b>
<b>Coal (Imported)</b>	<b>K ton</b>	<b>6828</b>	<b>4.32</b>
<b>Coal (Local)</b>	<b>K ton</b>	<b>808</b>	<b>0.51</b>
<b>RE (Hydro)</b>	<b>MW</b>	<b>230</b>	<b>0.17</b>
<b>RE (Solar+ wind)</b>	<b>MW</b>	<b>417.51</b>	<b>0.31</b>
<b>Electricity (Imported)</b>	<b>MW</b>	<b>1160</b>	<b>0.86</b>
<b>Total Commercial</b>			<b>40.52</b>
<b>Biomass</b>			<b>14.99</b>
<b>Total primary</b>			<b>55.50</b>

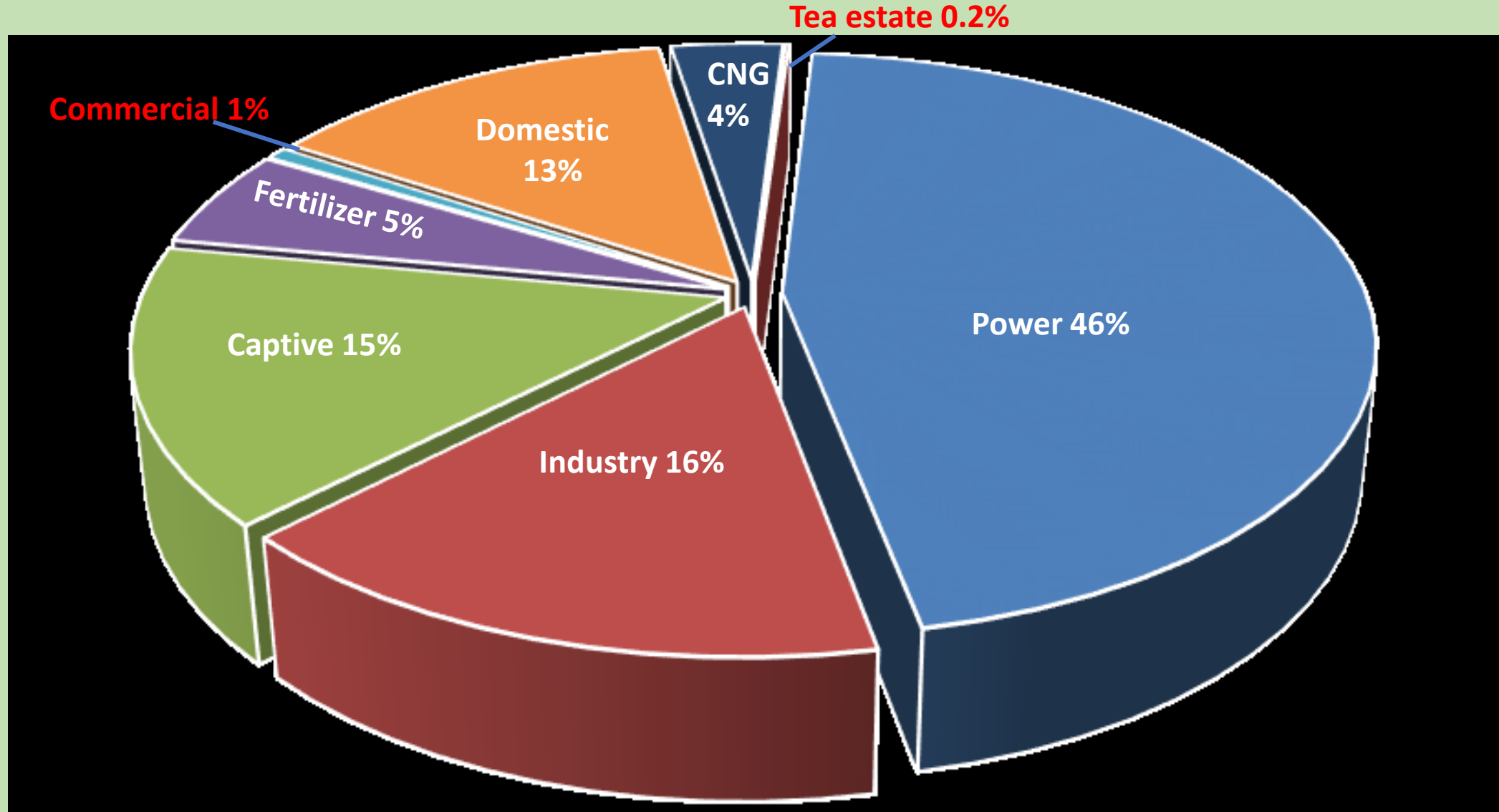
- **Total energy consumption is around 55.50 Mtoe.**
- **Average increase of energy consumption is about 6% per annum.**
- **Per capita consumption of energy is on an average 334 kgoe**

# Primary Energy, 2019-20 (55.50 Mtoe)

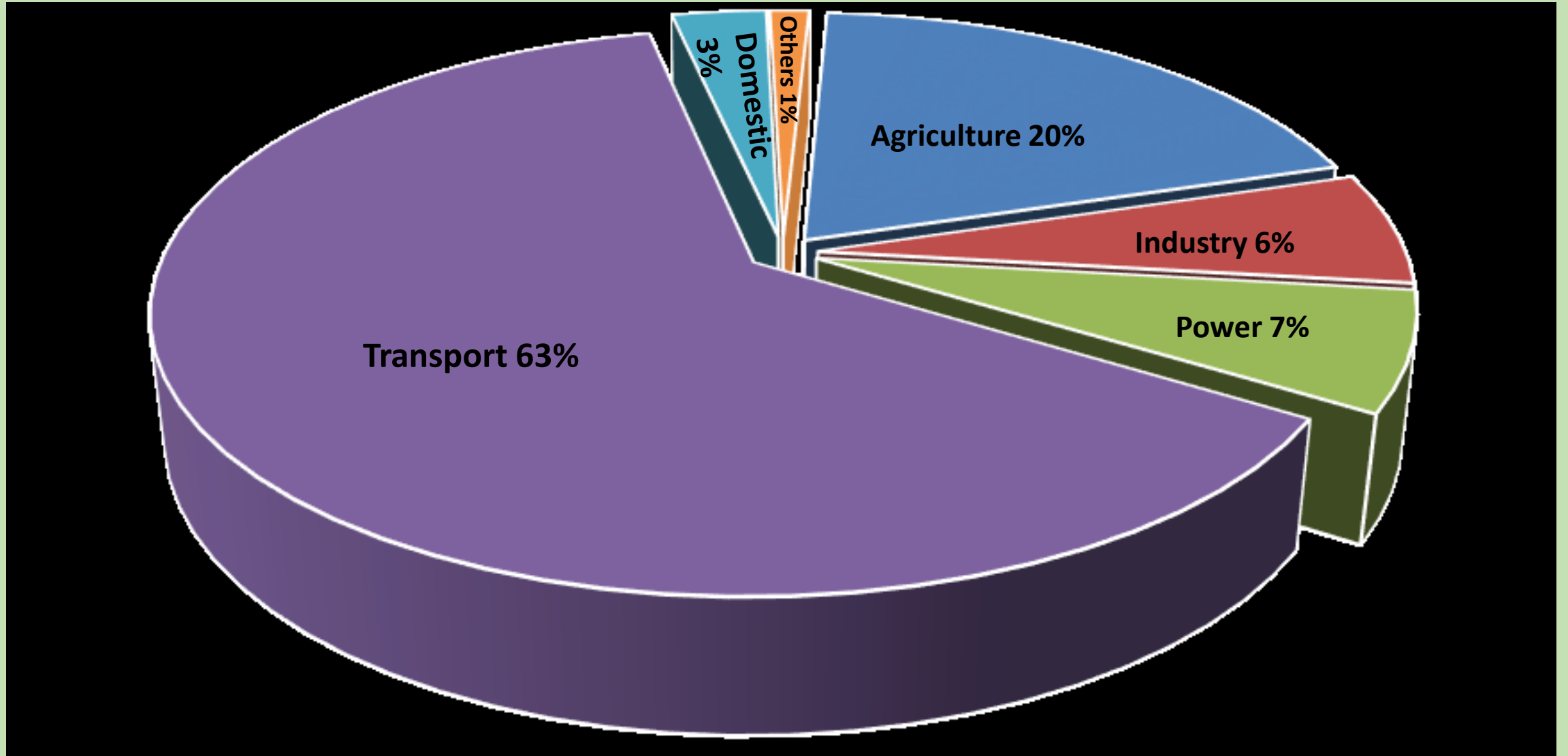




# Sector wise Gas Consumption in Bangladesh (2019-20)

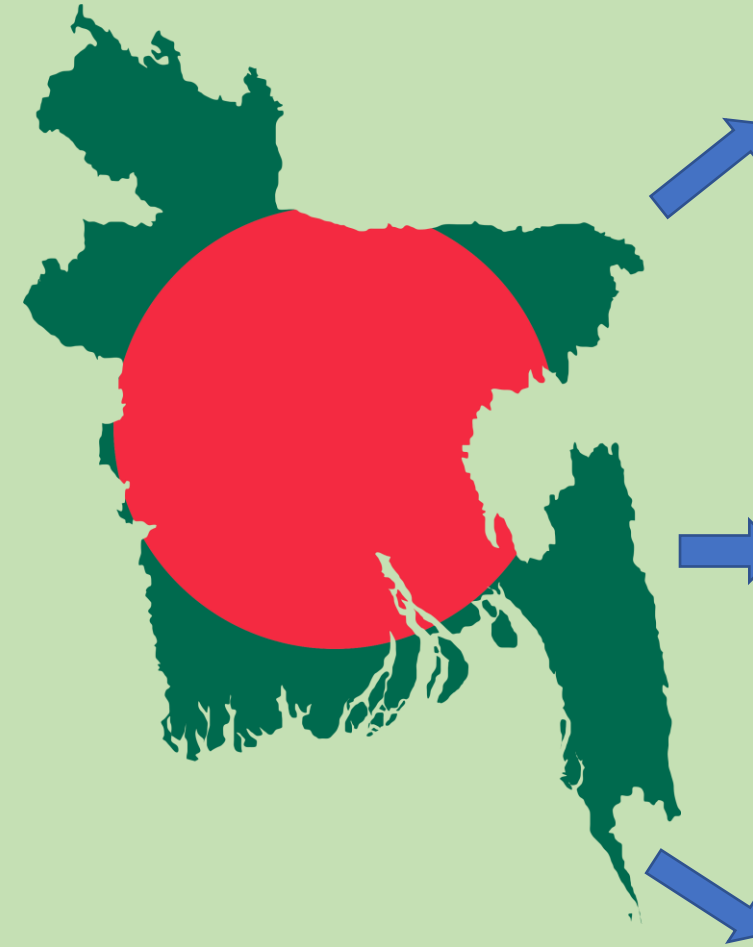


# Sector wise Liquid Fuel Consumption in Bangladesh (2019-20)



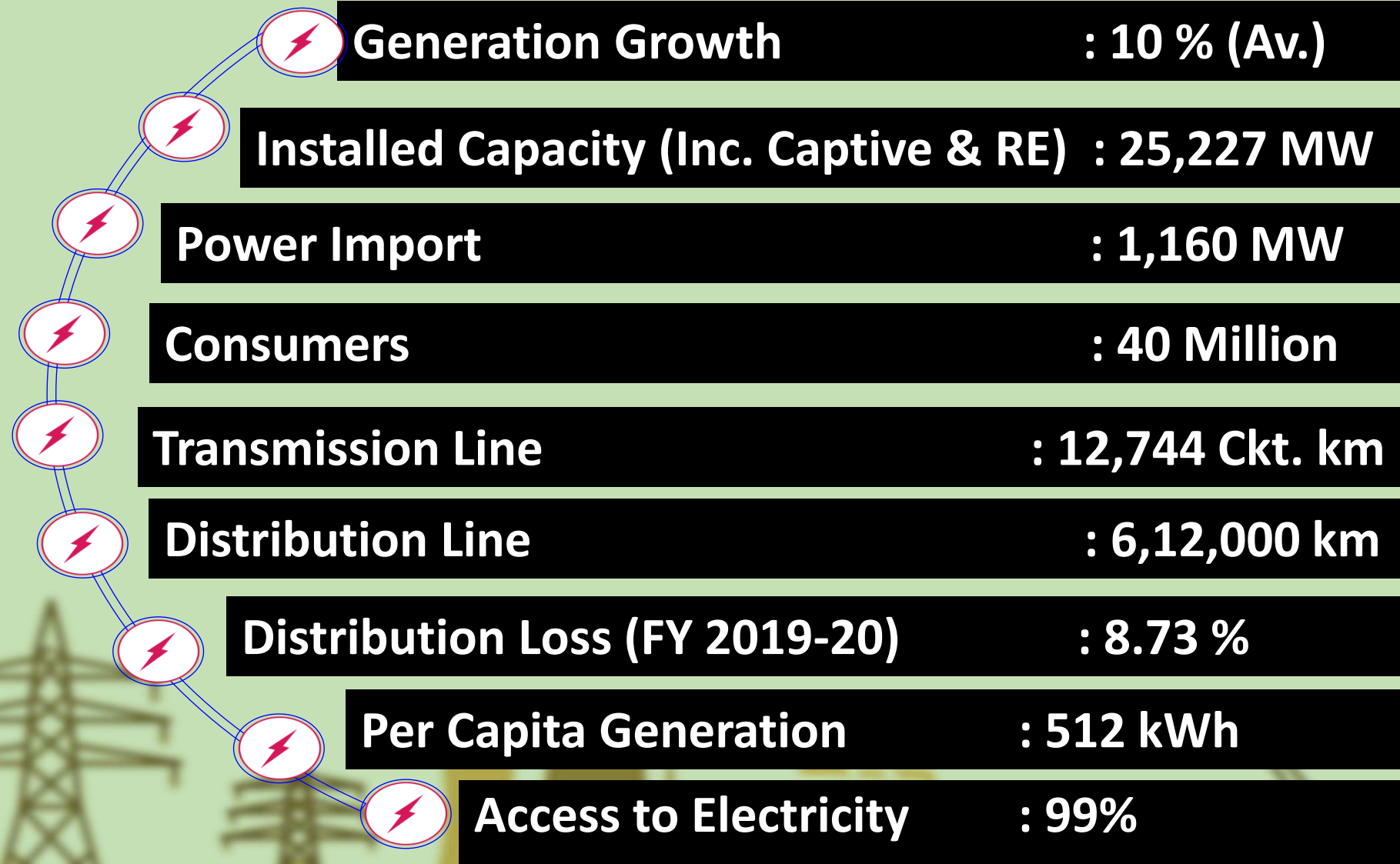


# Bangladesh Power Sector





# Power Sector: At a Glance



# Power Sector



Particulars	2009	2020	Achievement
Power Plants (No)	27	149	(+) 122
Installed Capacity (MW)	4,942	25,227*	(+) 20,285
Highest Generation (MW)	3,268 (6 Jan 2009)	13,792 (27 April 2021)	(+) 9,662
Power Import (MW)	-	1,160	(+) 1,160
Consumers (million)	10.8	40.0	(+) 29.2
Transmission Line (Ckt Km)	8,000	12,744	(+) 4,744
Distribution Line (Km)	2,60,000	6,12,000	(+) 3,52,000
Grid sub-station capacity (MVA)	15,870	50,074	(+) 34,204
Access to Electricity (%)	47	99	(+) 52
Per Capita Generation (KWh)	220	512	(+) 292
Distribution System Loss (%)	14.33 (FY 2008-09)	8.73 (FY 2019-20)	(-) 5.60

\* Captive & RE Include

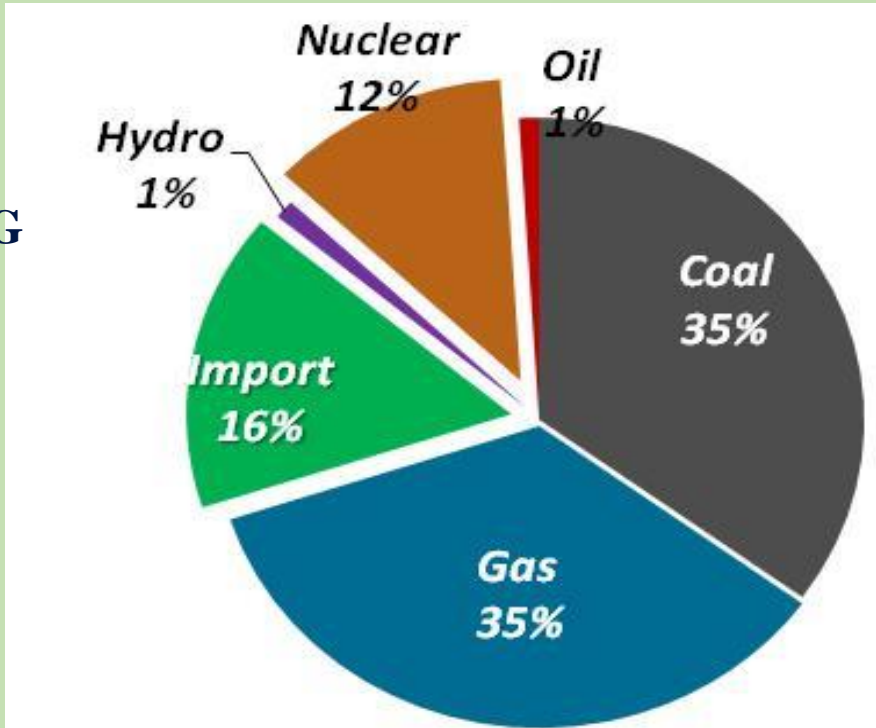
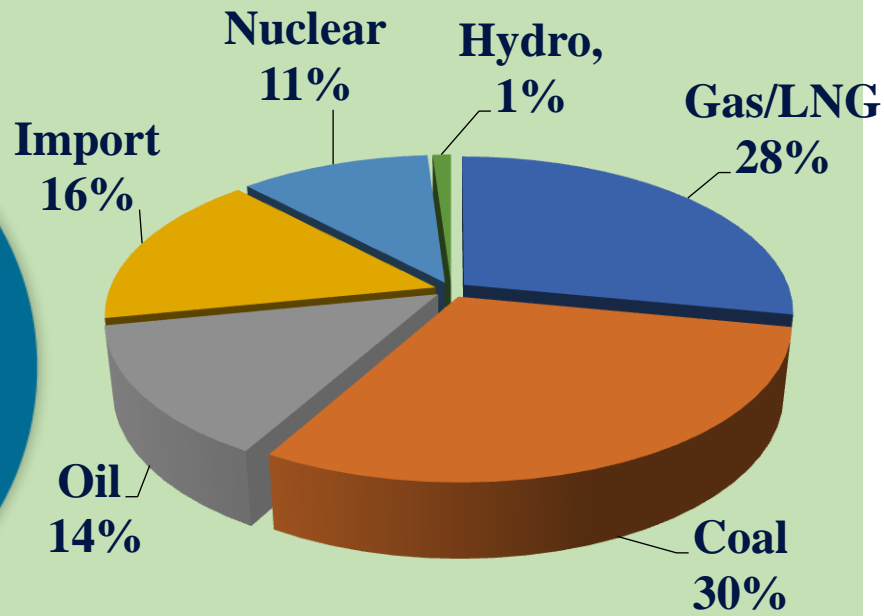
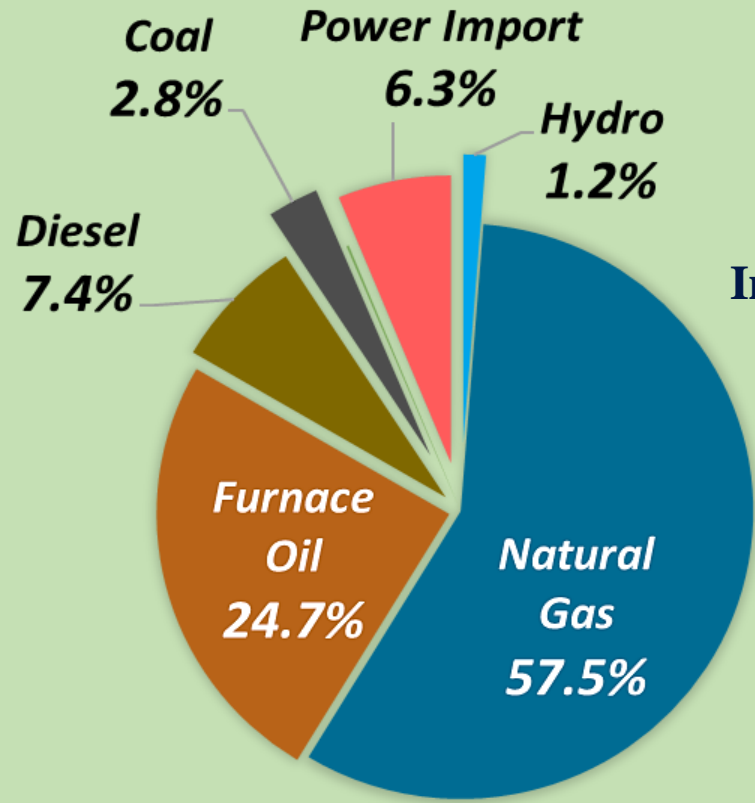


# Fuel Mix: Generation Capacity (Grid)

**19,630 MW**

**40,000 MW**

**60,000 MW**



**2020**

**2030**

**2041**



# Renewable Energy

(3.25% of total Electricity Generation)



**Metering Solar System:**  
1376 (24.68 MW) connected

6.02 million SHSs installed (262.55 MW)

Solar Park: 6 (94.53 MW)

Solar Mini-grid: 26 (5.65 MW)

**RE**

Wind Power Plant: 3 MW

Biomass & Biogas: 1 MW

Hydro: 230 MW

Total: 730.49 MW (with hydro)

# Action Plan to Realize Vision 2041



- Immediate, short, mid & long term power generation plans.
- Fuel diversification (Gas/LNG, Coal, Liquid, RE, Nuclear, Import etc.)
- Continuation and quick implementation of ongoing projects.
- Power import from neighboring countries.
- Renewable energy & Nuclear power plant.
- LNG import to meet gas demand.
- Implementation of PSMP-2016.







# Vision 2041: Options for Bangladesh

- Domestic or Imported Coal for Power Generation
- LNG Import for Addressing Gas Demand as well as Installation of LNG based Power Plants
- Harnessing Hydro Power Potential in South Asian region.
- 6,000 MW Power Generation from Nuclear Energy.
- 10% Power Generation from Renewable Energy.
- 20% Energy Savings of the Total Energy Consumption.



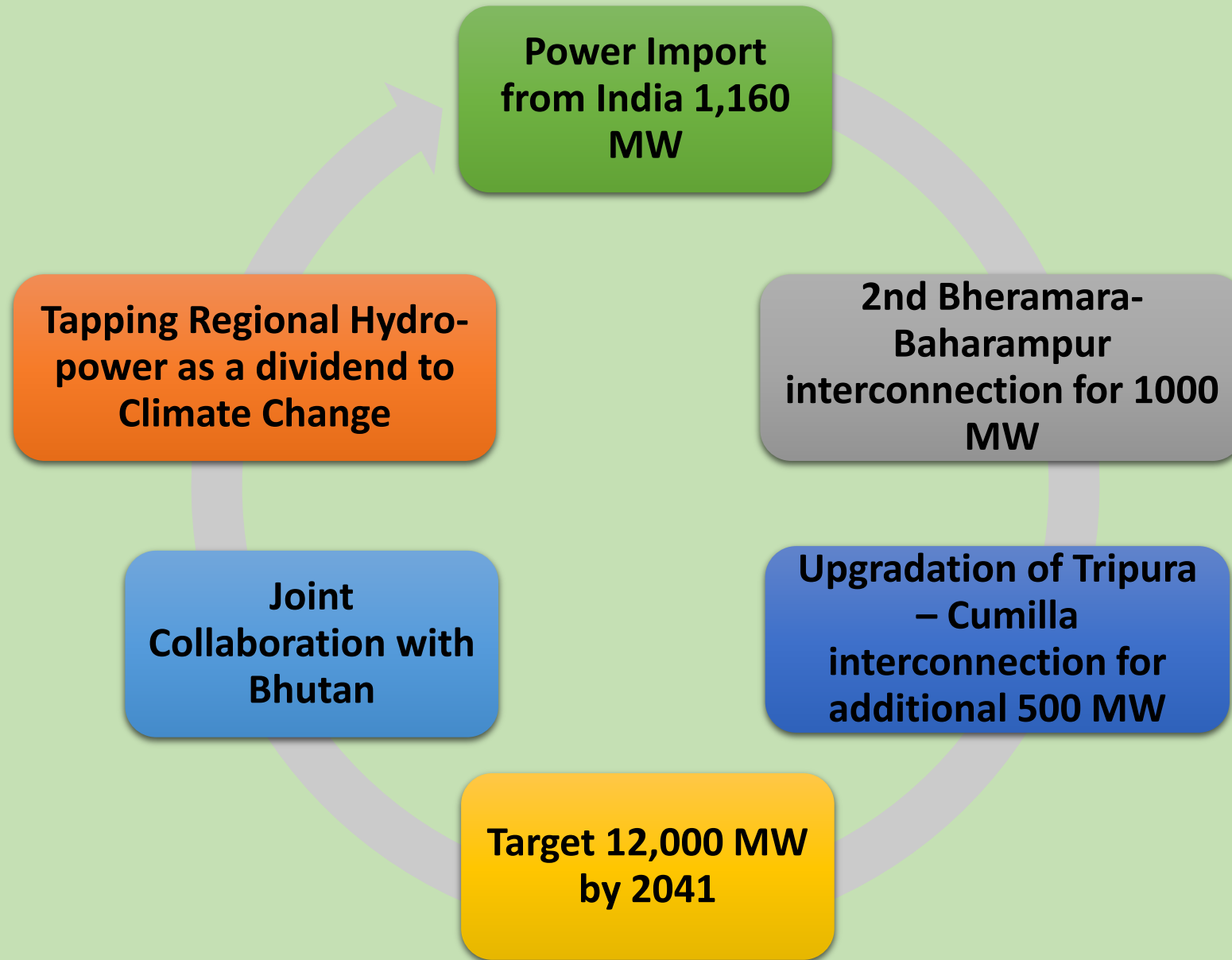


# Upcoming important Projects

Name	Capacity (MW)	Executing Agency	Completion Date
Moitri Super Thermal Power Project	1,320	Bangladesh -India JV	2021
Matarbari Coal Based Power Pant	1,200	CPGCBL	2024
Paira Coal Based Power Plant	1,320	NWPGCL- China JV	2020
Moheshkhali Power Hub	8,600	JV and EPC	-
Ashuganj 2x660 MW Power Plant Paira	1,320	APSCL	2031
1200 MW Coal Based Power Plant	1,200	CPGCL- SEMCORP	2023
LNG Base CCPP	750	NWPGCL	2023
Rooppur Nuclear Power Plant	4,000	MOST (Ministry of Science & Technology)	2024,2030
Paira 3,600 MW LNG to Power	3,600	NWPGCL & Siemens	2025
Moheshkhali 3,000 MW LNG to Power	3,000	BPDB & GE	2030



# Regional Cooperation





# Act & Policy

**Bangladesh Energy  
Regulatory Commission Act,  
2003**

**Bangladesh Gas Act, 2010**

**Bangladesh Petroleum  
Corporation Act, 2016**

**LPG Act, 2016**

**Petroleum Law 2016**

**The Mines and Minerals  
Rules, 2012**

**Granite Marketing Rules,  
2018**

**LNG Infrastructure  
Formation, Importing &  
Distribution in Private  
Sector Policy, 2019**

**Natural Gas Allocation  
Policy, 2019**

**Natural Gas Exploration  
Policy, 2019**



# Act and Policy

**Private Sector Power  
Generation Policy, 1996**

**BERC Act, 2003**

**Quick Enhancement of  
Electricity(Special  
Provision) Act, 2010**

**Electricity Grid Code, 2018**

**Electricity  
Act, 2018**

**RE Policy, 2008**

**SREDA Act 2012**

**'Energy Efficiency and  
Conservation Rules 2016'**

**Energy Audit Regulation 2018'**

**Net Metering Guideline, 2019**



# Challenges & Way Forward

Matarbari 2<sup>nd</sup> Phase



Coal Transshipment terminal



Renewable Energy



Grid Reliability

Smart Grid



Tariff

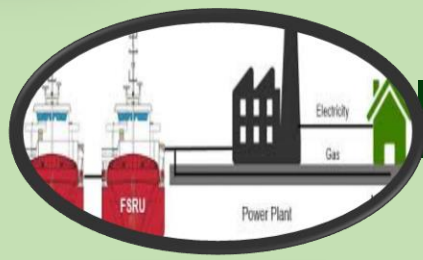


Capacity Building  
BPMI & BEPRC

PPP in Transmission



Under Ground Distribution System



LNG to Power

Energy Efficiency & Conservation



# Major difficulties and bottlenecks

- **Restructuring the sector**
- **Efficiency standards**
- **Fuel mix**
- **Obligation to supply energy from renewable sources**
- **Attracting investment (RE)**
- **Phasing out subsidies**
- **Strengthening regulations**
- **Supporting energy sector innovation**
- **Accelerating the deployment of sustainable energy technologies**
- **Promoting energy efficiency**
- **Building institutional and human capacity in sustainable energy**
- **Improving international cooperation and linkages between trade and the environment**

# Subjects of priority



Energy, economy and environment

EE&C

Sustainable Energy mix

Renewable Energy

Hydrogen

Energy Storage

Government of Bangladesh has initiated for a new integrated energy & power master plan project, with a vision to promote a low or zero-carbon transformation of the total energy supply and demand system, and ensuring economic viability. This is particularly important when Bangladesh is in the process of the energy transition with a view to scaling down the use of fossil fuel and boosting the use of renewable energy.

