



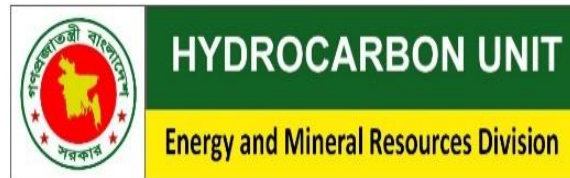
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JAICA KCCP Energy Policy A

Country Report on Bangladesh

20 June, 2022





Prepared by,

M. Alauddin Al Azad

Assistant Director (Operation)

Hydrocarbon Unit

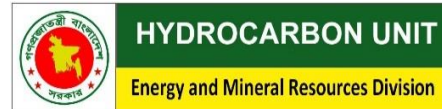
Energy and Mineral Resources Division

Md. Nazmul Haque

Assistant Director (Planning)

Hydrocarbon Unit

Energy and Mineral Resources Division





General Information



1.1 Country Profile

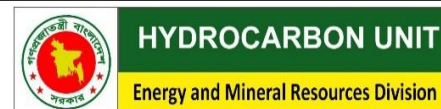
People's Republic of Bangladesh

Independence	1971
Capital	Dhaka
Official & national language	Bengali
Area	147,570 sq.km. (56,977 sq. miles)
Literacy rate of population (7+ years)	74.7%
Life Expectancy Yr. 2020	72.6
Household	32,173,630
Principal Minerals	Natural gas, Coal, Lime, White clay, Glass sand.

1.2 Economic Indicator

Economic Indicator	Status
GDP at current market price (billion tk.) (2019-20)	27,964.00
GDP at constant market price (billion tk.) (2019-20)	11,637.00
Per capita GDP in current market price (US \$) (2019-20)	1970
Per capita GNI in current market price (US \$) (2019-20)	2064
Population (Million) at Yr. 2020	166.50
Growth Rate (Population) at Yr. 2020	1.37%

Source: BBS (Bangladesh Bureau of Statistics)



Source: BBS



1.3 Organizational Structure:

Power Division

Org/Cell	Generation	Transmission	Distribution
EPRC	BPDB	PGCB	BPDB
SREDA	APSCCL		BREB
CEI	EGCB		DESCO
Power Cell	NWPGCL		DPDC
BPMI	RPCL		WZPDCO
	CPGCBL		NESCO
	B-R Powergen Ltd		

Source: <http://www.powerdivision.gov.bd/>

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Petrobangla

Bangladesh
Petroleum
Corporation (BPC)

Geological Survey of
Bangladesh

Bangladesh
Petroleum Institute
(BPI)

Bureau of Mineral
Development

Hydrocarban Unit

Department of
Explosives

BERC

Company List of Petrobangla

Bapex

BGFCL

Sylhet Gas Fields
Limited

GTCL

TGTDCL

BGDCL

JGTDSL

PGCL

KGDCCL

SGCL

rpgcl

bcmcl

mgmcl

Company of BPC

POCL

jamunaoil

mpl

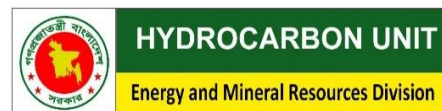
lpgl

Eastern

saocl

ERL

Source: <http://www.emrd.gov.bd/>





1.4 Reserves :

Description	Amount
Total number of gas fields	26
Number of gas fields in production	20
Number of producing wells	112
Total recoverable (Proven + Probable) reserve	40.09 Tcf
Cumulative Production (June,2021)	18.68 Tcf
Annual Production by NOC in 2020-21	307.27 Bcf (34%)
Annual Production by IOC in 2020-21	554.43 Bcf (66%)
Remaining Reserve (Proven + Probable)	11.37 Tcf
Number of Customer	43 Lakh (Appx.)
Production of Condensate (2020-21)	457,980.46
LPG Production (2020-21)	13,461.00
Coal Reserves in 5 Coal Fields	3,139 Million MT
Coal Production in 2020-21	753,973 MT



2.1 Primary Energy Supply (by source- Production, Import, Export):

Year	Natural Gas (in BCF)		Coal (in Metric Ton)		LPG (in Metric Ton)		Oil (in K Ton)	
	Gas (Production)	LNG (Import)	Production	Import	Production	Import	Production	Import
2014-15	890	-	675,776	1,812,030	17,574	110,000	-	6,900
2015-16	971	-	1,021,638	3,812,060	14,000	172,792	-	6,400
2016-17	972	-	1,160,658	2,801,407	16,382	307,000	-	7,300
2017-18	961	-	923,276	3,394,534	15,936	537,686	-	6,948
2018-19	965	116	803,315	5,754,025	19,228	681,036	-	8,650
2019-20	887	203	808,358	6,828,032	13,414	835,027	-	8,234
2020-21	892	216	753,973	6,751,000	13,461	1,427,826	-	8,805

Source: Petrobangla Annual Report

2.2 Primary Energy Supply by Energy Source:

Year	Natural Gas	LNG	Oil	Coal	LPG	RE	Biomass
2014-15	20,650	-	6,900	1,600	128	670	12,750
2015-16	22,600	-	6,400	2,900	187	500	13,300
2016-17	22,500	-	7,300	2,500	323	300	13,300
2017-18	22,300	-	6,948	2,700	500	500	13,600
2018-19	22,370	2,690	8,650	4,150	700	440	14,750
2019-20	20,560	4,700	8,234	4,830	854	480	14,990
2020-21	20,700	5,010	8,805	4,750	1,440	570	14,800

Source: HCU Data Bank



2.3 Final Energy Consumption (by sector)

Name of Specification	Natural Gas, KTOE (in 2020-21)	Oil, KTOE (in 2020-21)
Power	9,869.77	652.07
Industry	4,213.83	450.44
Captive	3,919.42	-
Fertilizer	1,498.90	-
Commercial/Others	139.52	160.30
Domestic	3,110.33	97.60
CNG/ Transport	813.00	3,963.73
Tea estate/ Agriculture	23.40	975.60

2.4 Final Energy Consumption by Energy Source

Year-wise	Commercial Energy (MTOE)	Primary Energy (MTOE)
2014-15	29.82	42.53
2015-16	32.8	46.1
2016-17	33.1	46.43
2017-18	33.4	47
2018-19	39.85	54.6
2019-20	40.52	55.5
2020-21	42.12	56.92

Source: Petrobangla Annual Report & HCU Data Bank



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2.5 Electricity Generation by Energy Source:

Net energy	GWh
2005-06	22978
2006-07	23268
2007-08	24946
2008-09	26533
2009-10	29247
2010-11	31355
2011-12	35118
2012-13	38229
2013-14	42195
2014-15	45836
2015-16	52193
2016-17	57276
2017-18	62678
2018-19	70533
2019-20	71419
2020-21	80,423

Fuel Type	GWh in 2020-21	%
Hydro	655.00	0.82%
Coal	4997.00	6.23%
Import	8104.00	10.10%
Diesel	609.00	0.76%
Furnace Oil	17497.00	21.80%
Natural Gas	48403.00	60.30%
Total	80265.00	100.00%



Fuel wise power generation, 2020-21

Sector wise power consumption, 2020-21

Sector	GWh	%
Domestic	40,324	56.42%
Industrial	20,298	28.40%
Commercial	7,562	10.58%
Others	1,551	2.17%
Agriculture	1,737	2.43%
Total	71,471	100.00%



3.1 Natural Gas

3.0 Outlook of Energy Demand vs. Supply



Year	* Power	Fertilizer	Cap. Power	Industry	Domestic	CNG	Commercial & Tea	Total Demand	Total Supply
2019	1284	316	480	710	425	139	38	3392	3331
2020	1334	316	480	776	425	139	38	3508	3477
2021	1384	316	480	842	425	139	38	3624	3500
2022	1662	316	432	908	425	130	38	3911	3769
2023	1786	316	389	974	420	125	38	4048	3915
2024	1780	316	350	1040	431	120	38	4075	4061
2025	1803	316	315	1106	442	110	38	4130	4300
2026	1844	317	283	1172	453	100	38	4207	4350
2027	1958	319	255	1238	465	100	38	4373	4400
2028	2087	321	230	1304	476	75	38	4531	4450
2029	2060	323	207	1370	488	75	38	4561	4500
2030	2058	325	186	1440	500	75	38	4622	4600

Source: EMRD

[Unit: mmcfd]

3.2 Power Generation Per Capita and Consumption Projection up to 2041 [High, Base & Low case]

	Year	2020	2025	2030	2035	2041
	Population (Million)	170	179	186	193	198
	Average growth rate (p.a.)	1.1	1.0	0.8	0.6	0.5
High Case	Energy Generation Demand (MkWh)	90,367	152,417	237,113	340,961	473,359
	Per Capita Generation (kWh)	532	851	1,275	1,767	2,391
	Energy Consumption Demand (MkWh)	79,885	136,032	212,928	307,103	426,638
	Per Capita Consumption (kWh)	470	760	1,145	1,591	2,155
Base Case	Energy Generation Demand (MkWh)	83,962	144,319	224,507	322,841	446,025
	Per Capita Generation (kWh)	494	806	1,207	1,673	2,253
	Energy Consumption Demand (MkWh)	74,223	128,805	201,608	290,783	402,002
	Per Capita Consumption (kWh)	437	720	1,084	1,507	2,030
Low Case	Energy Generation Demand (MkWh)	78,375	134,714	209,570	301,351	416,338
	Per Capita Generation (kWh)	461	753	1,127	1,561	2,103
	Energy Consumption Demand (MkWh)	69,284	120,232	188,194	271,427	375,245
	Per Capita Consumption (kWh)	408	672	1,012	1,406	1,895

[Source: Revisiting PSMP 2016- JICA Study Team]



4.0 Carbon Emission: Bangladesh Context

CO ₂ Emission (Mt of CO ₂)	CO ₂ /GDP (PPP) (kgCO ₂ /2015 USD)
89.3	0.12

Source: Key World Energy Statistics 2021, IEA



4.1 Current Energy policy of Bangladesh

- ✓ Developing renewable energy sources to meet 5% of total power demand by 2015 and 10% by 2020 though it couldn't be achieved due to some factual causes
- ✓ Energy subsidy is already addressed every financial year (thru the clean fuel as LNG) to reduce carbon emission
- ✓ LNG business: 2 FSRU of (500 mmcf/d per FSRU) is under operation and more private entity is interested in this segment
- ✓ LPG market is dominant by private sector
- ✓ 100% electricity connection is established in this financial year. Transmission and distribution system should be more effective and to contain minimum system loss.
- ✓ More emphasize on clean, modern and affordable *energy*
- ✓ Cross border energy is already functional



4.2 Current Challenges:

- ✓ Affordable and Reliable Electricity for all
- ✓ Clean Fuel and Technology
- ✓ On-shore and Off-shore exploration of gas
- ✓ Development of domestic Coal field
- ✓ Increase share of Renewable Energy
- ✓ LNG import
- ✓ Energy pricing and subsidies
- ✓ Huge financing of project related to SDG
- ✓ Energy Efficiency and conservation issue



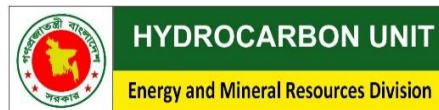
5.0 Intend to Learn from the JICA Energy Policy A

To formulate

- ✓ Comprehensive energy policy on Carbon Neutrality
- ✓ Mid-term and Long term comprehensive Energy Policy
- ✓ Energy Demand Forecasting, Optimum Energy Mix and Scenario Analysis in the World/ Asia
- ✓ Energy Market Trend
- ✓ Energy Policy in Japan
- ✓ Decision-Making Process in Japan
- ✓ Approach to Global Environmental Issues
- ✓ Survey and management methodology for energy statistics data, Energy Database Construction, Understanding/ Formulation of energy balance table etc.



Thank You



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Energy and Mineral Resources Division

Contact: report@tky.ieej.or.jp