

As of 5 September 2019

Australia Bangladesh Trade Conference, Sydney, 2019

Date: 14 November 2019
Session: 15:30 hours ó 17:30 hours
Theme: Industry Session: Power and Energy; Minerals and Metals

A. Background

As Bangladesh continues to grow rapidly with fascinating GDP growth of over 7.5%, sustainable supply of energy is needed for the desired economic development of the country. The two primary fuels that Bangladesh possesses for generating electricity are natural gas and coal. Currently, Bangladesh's electricity generation capacity is about 20,000 MW, of which a significant portion is gas-field and about half is from the private sector. The Government of Bangladesh has adopted a well-rounded and robust reform programme to increase the supply of electricity involving substantial investment, sector reforms and regional trade. The key elements of the Government's power sector strategy are:

- Mobilizing private and joint venture investment in the power sector
- Diversification of primary fuel for electricity generation
- Use LNG and coal as the primary sources of energy for power generation
- Use of alternative sources of energy
- Use of nuclear energy for power generation
- Use of alternative sources of financing (Export Credit Agency, etc.)
- Exploring electricity-trading options with neighbouring countries (India, Nepal, Bhutan and Myanmar).

To reach the ambitious goal of doubling power generation to 40,000 MW, GOB has formulated 'Power Sector Master Plan (PSMP) 2016', which emphasizes on diversification of energy mix including clean coal technology. Bangladesh has one the least carbon footprint in the world and uses the least unit of carbon for per unit of GDP. Despite her commitment to mitigation, Bangladesh is compelled to balance the energy mix with natural gas and coal have given limitations to get nuclear and solar power and other renewables.

Coal for power

Under this, an array of new power generation units are planned. Coal-fired power plants are new in Bangladesh.

Major coal-fired power plants

Name and place	capacity	Owner	Remarks
Rampal Project	2640 MW	BPDB and NTPC Ltd. India	By 2021
Payra, 1320 MW	1320 MW	NW PGCL	By 2023
	700 MW	Sembcorp Singapore and CPGCBL	By 2025
Maheshkhali	1200 MW	BPDB	By 2025
Patuakhali	1320 MW	JV with China	By 2025
Pekua	1320	JV with Japan, Mitsui	By 2025
Maheshkhali	1200	JV with Malaysia, TNB-PTB	By 2026
Maheshkhani	1200	JV with China	By 2026

Matarbari	1200	JV with Japan- Sumitomo	By 2026
maheshkhali	1320	JV with China	
Maheshkhali	1200	JV with ROK, KEPCO	
	13.300 MG		

Bangladesh imports a limited amount of coal mostly from Indonesia, India and South Africa and recently has started importing from Russia and Malaysia. Coal demand by 2026 may stand at 80 million tons. As such, there is a clear imperative for sourcing coal from other countries, in particular, Australia.

Coal (HS Code 2701) Imported by Bangladesh

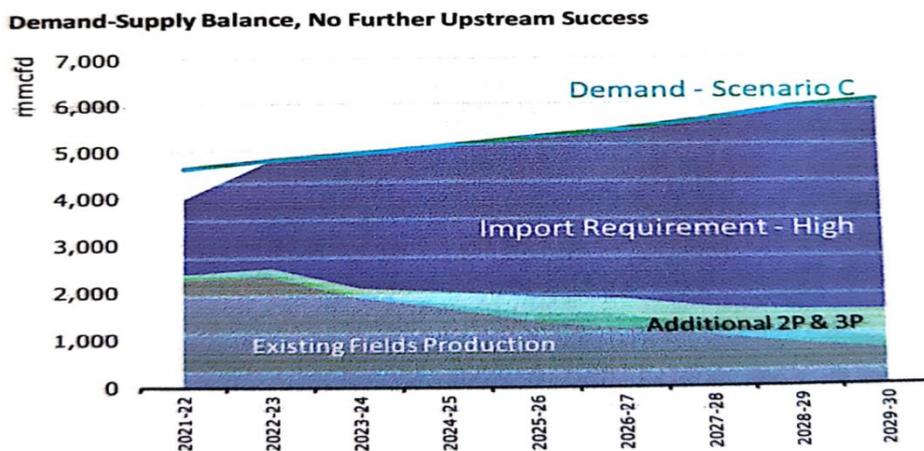
Exporters	2014	2016	2018
	Imported quantity, Tons	Imported quantity, Tons	Imported quantity, Tons
Total	792,752	2,851,916	4,075,511
Indonesia	159,065	1,537,298	2,613,237
South Africa	84,067	630,125	750,168
India	549,563	640,377	525,358
Russian Federation		30,114	110,028
Malaysia		13,835	66,900
China	38	154	9,820
Australia	19		

Data Source: The International Trade Centre (ITC)

Similarly, demand for coking coal is bound to increase for a fast developing steel industry (that has attained an annual capacity of 9 million tonnes).

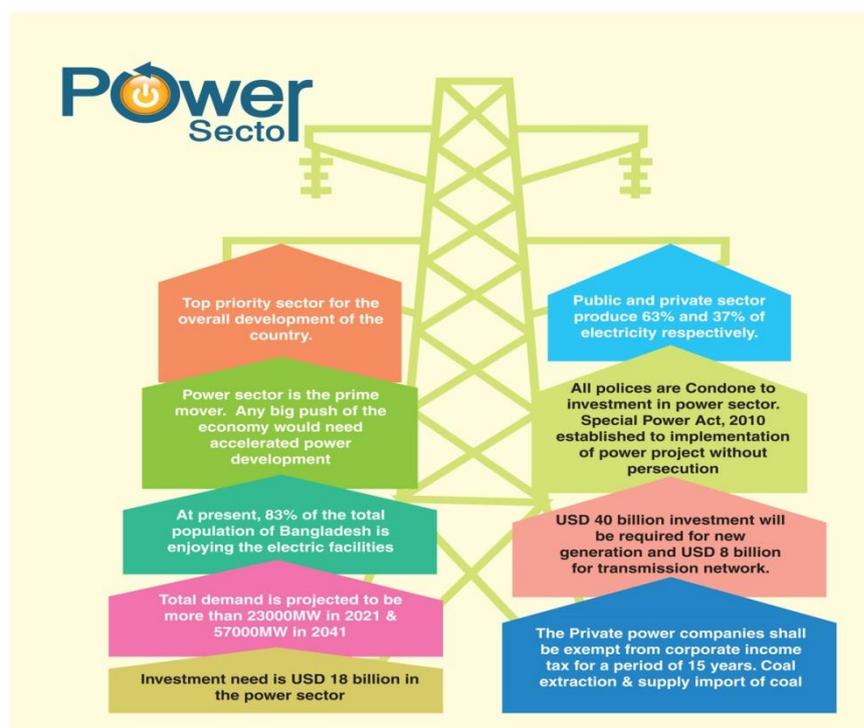
Furthermore, the Government plans to develop the Matarbari Island area to build ports and facilities which allow imports of coals and liquefied natural gas (LNG) for power generations from after 2021 and 2022, respectively. A 500 mmcf/d LNG capacity FSRU is already operational. Another one is in the pipeline. However, the country will need about 4,000 mmcf/d of LNG by 2025.

Figure 79: Medium-term Supply and Demand balance



Bangladesh LNG import forecast

Simultaneously, to meet the increasing gas demand, necessary steps have been undertaken to import Liquefied Natural Gas (LNG) within the shortest possible time. Bangladesh expects to diversify sourcing of LNG beyond Middle-East.



Source- BIDA

B. Bangladesh’s potential to import coal, LNG and other metals from Australia:

Australia is the world’s fifth-largest producer of black coal, producing over 430Mt in 2018, behind only China, India, the USA and Indonesia. It is the world’s biggest coal exporter. In 2015, Australia’s export volumes overtook those of Indonesia, regaining its position as a world leader. As forecasted, Australia will earn \$165 billion by exporting coal between 2016-2017 to 2020-2021.

Coal (HS Code 2701) Exported by Australia

Unit: Million Tons

	2008	2013	2018	2025 (estimate)
Total	254.380	353.912	382.230	400.000
Japan	117.737 (46.3%)	121.781 (34.41%)	116.84 (30.57%)	120.000 (30%)
China	3.543 (4.38%)	88.189 (24.92%)	87.69 (22.94%)	80.000 (20%)
India	22.440 (8.8%)	32.225 (9.11%)	48.73 (12.75%)	70.000 (17.5%)
Korea, Republic of	38.202 (15%)	50.450 (14.25%)	47.77 (12.50%)	45.000 (11.25%)
Bangladesh	-	-	-	25.000 (5.00%)

Data Source: The International Trade Centre (ITC)

It is also expected that Australia will export 400 million tonnes of coal by 2025. But major markets in Japan, China and ROK are stabilising. There is potential for Bangladesh to import significant quantum (say 25-30 million tonnes) of coal from Australia by that period considering the high quality of Australian coal in regards of calorific value, moisture and ash content. Australian coal contains relatively low levels of sulphur and moisture. They also have low levels of arsenic, boron, mercury, selenium and other trace elements.

Similarly, Australia is one of the largest LNG exporters globally. Japan and China are the leading destinations for Australian LNG. Australia may challenge Qatar as the world's largest LNG exporter if domestic energy challenges are addressed. Australia is exporting 57 million mt of LNG at present, which will stand at 70 million mt in 2025. Major gas producers like INPEX are tied to foreign markets (Japan in particular) for the long term. However, there could be greater production in the offshore projects in the reserves in the Timor Sea and Arafura Sea (beyond existing Bayu-Udan project by ConocoPhillips in the Bonaparte Basin, Ichthys by INPEX, and Greater Sunfire by Woodside etc). Some more fields may be developed for gas in the mid-term.

LNG (HS Code 271111) exported by Australia

	2008	2013	2016	2018	2025(estimate)
Total	15.225	22.161	28.378	67.113	120
Japan	11.98 (78.71%)	17.92(80.86%)	22.42 (78.90%)	28.70 (42.77%)	50 (41.67%)
China	2.718 (17.85%)	3.56 (16.05%)	11.98 (42.21%)	23.50 (35.01%)	40 (33.33%)
Korea, Republic of	0.398 (2.61%)	0.62 (2.82%)	4.69 (16.52%)	7.88 (11.74%)	15 (12.5%)
India	0.126 (0.83%)	-	0.92 (3.22%)	1.47 (2.19%)	10 (8.33%)
Bangladesh	.	-	.		6-10 (5-8%)

Data Source: The International Trade Centre (ITC)

There is a prospect for Bangladesh to import 6-10 million mt of LNG from Australia by 2025. Australia's leading independent oil and gas company, Woodside could be the potential partner to export LNG to Bangladesh beyond exploration in off-shore blocs in the Bay of Bengal. The company has visited Bangladesh in 2016 and 2017.

Similarly, Bangladesh has been emerging as an essential market for minerals and metals in particular for iron and steel. Steel production has already reached about 9 million tonnes annually and may go further in the next few years to meet increasing demand from the infrastructure sector. Such a vibrant steel industry will look far beyond ship-breaking industry to secure iron ores and billets. (Bangladesh is expected to import US\$ 3,000 million worth of steel and iron in 2022 from the world, projection from Australia is US\$ 100 million). At the same time, demand for coking coal will enhance significantly for the steel industries, which is following a robust growth in recent times.

Likewise, there is a growing demand for other metals such as copper, aluminium, zinc and lead. In 2017 Australia's non-ferrous metals trade with Bangladesh was in copper with a value of 45 million USD, zinc valued at 34.5 million USD and lead with an amount of around 7.5 million USD, Aluminium with an amount of 2.88 million USD. Though growths are increasing fast, Australia may also focus on Bangladesh market.

Australia's export of metals to Bangladesh:

Unit: US Dollar Million

Particulars	Bangladesh's Import from World		Bangladesh's Import from Australia	
	in 2013	in 2018 (increase in time)	in 2013	in 2018 (increase in time)
Copper	127	199.2 (1.56)	0.081	34.4 (425)
Iron and Steel	1,714	2759 (1.60)	2.088	44.1 (21.12)
Aluminium	223	409 (1.83)	0.01	1.2 (120)
Zinc	104	163.4 (1.57)	0	34.8
Lead	39	61 (1.56)	0	3.7

Data Source: The International Trade Centre (ITC)

C. Prospects of Renewables

Bangladesh also seeking to increase power from renewables. The government did not attain its goal of generating five per cent of country's electricity from renewable sources by 2015. Bangladesh is currently generating around 560 MW of electricity from renewables, which is just 2.95% of total power generation. About 325 MW comes from solar power. As such, generating 2,000 MW of power ó about 10% of the total- by 2020 will be challenging. With a 41.1% stake, hydropower is the second high contributor to the renewable energy sector; followed by wind power at 0.5%, and biomass and biogas adding 1% each. Prospect of hydro-power is limited for flat nature of the territory, except for some hilly areas.

There are initiatives for at least eight solar parks- with a 100MW ócapacity each and a 200MW capacity solar power project in the planning process; while two 200MW ócapacity solar parks are now under construction. Last year in Taknaf a 20 MG solar power plant is a genuine limitation. Bangladesh has about million Solar Home Systems (SHS's) in off-grid area and adding about 40,000 per month.

There is a good opportunity on the island and coastal areas for the application of windmills for pumping and electrification. Some estimate the potential from wind power at over 10,000 MW. With an average tidal range of was found 4-5 meter, there is possibility of tidal power at suitable sides at Cox's Bazar, Maheshkhali, Kutubdia and other places. There are limited prospects of biogas. Geothermal potential of Bangladesh is yet to be determined. In 2011, Anglo MGH Energy, a private company announced the construction of 200 MW geothermal plant in Thakurgaon district, but there is no development on that.

Access to soft loan and confessional financing as well as access to technology on renewables can help increase generation of renewable power in Bangladesh. This is an area where Australia can provide assistance and thus help reduce carbon emission.

D. The organisation of the session on Power and Energy; Minerals and Metals: 15:30 hours – 17:30 hours

1. Moderator/ speaker to introduce the topic and discussants's names 5 Minutes
(Aided by Rapporteur)
2. Lead Discussants (names or entities represented)
 - a) Designated Bangladesh officials

	1+1+1 (coal/gas/renewables)	20 Minutes
	b) Mr George E. Edwards, Chairman Australian Mining Association	10 Minutes
	c) Woodside/Inpex	8+8 minutes
3.	Strategic perspectives from Bangladesh on energy-Energy Adviser or Secretary	15 minutes
4.	Open discussion	40 Minutes
	In the open discussion, the discussants may deliberate on the above or other relevant points and difficulties, but not exclusive to:	
	<ul style="list-style-type: none"> • Potential of Australia-Bangladesh cooperation in power and energy sector; • Australia-Bangladesh partnership in exporting coal and LNG to Bangladesh; • Comparative analysis of importing coal from Australia; • Comparative analysis of importing LNG from Australia; • Alternative sources of financing 	
5.	Summation by the Moderator/ Chair	5 Minutes
