হাইড্রোকার্বন ইউনিট
জ্বালানি ও খনিজ সম্পদ বিভাগ

Think Tank of EMRD

Annual Report On Gas Production, Distribution and Consumption FY 2016-2017

HYDROCARBON UNIT

Energy and Mineral Resources Division
Ministry of Power, Energy and Mineral Resources

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Preface

Annual Report entitled Gas Production and Consumption was prepared and published by Hydrocarbon Unit for the first time in October 2005. The present one is the issue of Annual Report on Gas Production and Consumption for the period of July 2016 to June 2017. In this report, gas production by State-owned Enterprise (SoE), International Oil Companies (IOC) and Joint Venture Undertakings in Bangladesh have been reflected. Daily average gas production rate and Condensate-Gas ratio have been included in the report as well. Moreover, sector-wise gas supply and consumption along with Unaccounted for Gas (UFG) have been illustrated with a monthly graphical presentation.

This report has been prepared based on the data available from the Monthly Reserve and Gas Production Report of HCU and Monthly Information System (MIS) of Petrobangla.

It is expected that the report will be helpful as reference book and elements of interest for the concerned.

The report will also be available at HCU's website: www.hcu.org.bd

Date: 16 November 2017

Md. Harun-or-Rashid Khan

Director General

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1.0 Background:

First exploration in Bangladesh is recorded at the beginning of 1908. It was BOC (Burmah Oil Col Co). BOC conducted surface geological mapping in Chittagong area. During 1910 to 1914 exploratory wells were drilled in Staked and presence gas was recorded. These wells were drilled by BOC and IPPC (Indian Petroleum Prospecting Company). Due to First World War exploration activities ceased. After the 1st World exploration activities resumed and during 1923-33 two wells were drilled by BOC in Path aria structure in Baralekha Bazar. Both the wells had oil and gas shows. After the Second World War due to political reason exploration activity remained suspended. However after end of World War II, due to political reason exploration activity remained suspended.

After Independence of India and Pakistan in 1947, exploration activities resumed in 1951. Pakistan Petroleum Limited (PPL), a subsidiary of Burmah Oil Company (BOC), started exploration in greater Sylhet area. This resulted in first discovery of gas in Sylhet (1951-55). Four years later in 1959 gas was discovered in Chattack. Pakistan Petroleum Limited (PPL) was the operator for of these two gas fields. Pakistan Shell Oil Company (PSOC), a subsidiary of Shell Oil started exploration and discovered gas in Rashidpur (1960), Titas (1962), Kailas Tila (1962) and Habiganj (1963).

Gas Production in this part of the world started in 1960-61 fiscal year when Sylhet and Chattack, both the gas fields were open for production. Production from Titas and Habiganj gas fields started in 1968. State participation in petroleum exploration started in 1960 when Oil & Gas Development Corporation was created with technical assistance from former Soviet Union. Semutang Gas Field was discovered in 1970-71.

After independence of Bangladesh, technical assistance from former USSR (former) reestablished and exploration activity picked up momentum. Begumganj, Feni, Kamta gas fields were discovered during this period. Offshore area of the country was awarded to international companies. During last decades new gas discoveries were made by both national and international companies. Updated estimate placed GIIP at 35.80 Tcf and reserve at 28.53 Tcf (Updated Report on Gas Reserve Estimation 2010, Gustavson Associates LLC, USA).

2.0 Summary:

Annual gas production report is based on gas and condensate production data received from gas production companies. Information on gas sales and purchase by the producers and distributers is collected from MIS report of Petrobangla. In 2016-17 fiscal years total production of gas logged 972.06 Bcf and daily average production was 2663.19 MMcfd. During the year well wise maximum daily gas production was 1197.73 MMcfd and well wise minimum gas production was 1.17 MMcfd. During the two Eid holidays gas consumption is significantly reduced. During the year some of the wells were shut down. At the same time a number of new wells were open for production rate of increase in production over the year was quite low. In 2015-16 fiscal years total gas production was 971.54 Bcf and daily average production 2661.76 MMcfd.

In 2016-17 increase of annual gas production was 0.52 Bcf and daily gas production was 1.43 MMcfd. Total producing gas field was 21. Gas production is largely depended on Bibiyana, Titas, Jalalabad and

Habiganj gas fields. This four gas fields provided 82.95 percent (2209 MMcfd out of total daily gas production is 2663.19 MMcfd)

During the year 111 wells in 19 gas fields were flowing. However during the year a number of wells were shut down. On the other hand new wells were added to the production stream. At the end of the year 111 wells were flowing. During this year National Companies produced 389.28 Bcf gas from 68 wells which equals to 1066.5 MMcfd. Minimum gas production was recorded from Rupgonj gas field (1.8 MMcfd). Rupgonj gas field was open for production in the middle of March, 2017. During the year average daily production from Srikail gas field was 41.06 MMcfd.

Chevron and Tullow Oil these two international companies remained active during the period. IOCs production logged 582.78 Bcf which equals to 1596.63 MMcfd. .

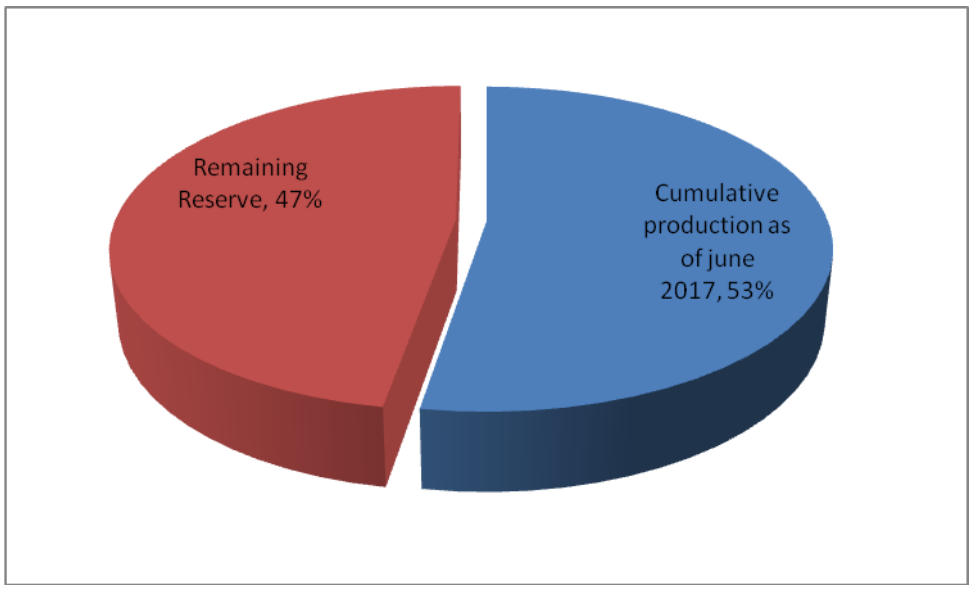
Report on annual gas production of this year 2016-17 is prepared using daily gas and condensate production data. Information on gas and condensate production was received from the gas production companies. Information on gas purchase and sales is collected from MIS report (June 2017) of Petrobangla.

In the current year four gas fields, Bibiyana, Titas, Jalalabad and Habiganj gas fields produced 806.28 Bcf gas and average gas production was 2208.99 MMcfd. Remaining 165.78 Bcf gas is produced by 15 gas fields which equals to 454.19 MMcfd.

Reserve and Production up to 2017 at a glance

Gas Initially in Place (Proven + Probable)	35,796.19 Bcf	35.80 Tcf
Recoverable (Proven + Probable)	28,523.40 Bcf	28.52 Tcf
Cumulative Production as of June 2017	15002.61 Bcf	15.00 Tcf
Remaining Reserve	13520.79 Bcf	13.52 Tcf

Figure 1 : Gas already Consumed & the Remainder



3.0 Gas Productions: (National Gas Producing Companies)

Three national and two international companies produced 972.06 Bcf gas and well wise average daily gas production was 2663.19 MMcfd. During this year increase in gas production was 0.52 Bcf and daily average gas production was 1.43 MMcfd.

Out of total production national companies share was 1066.5 MMcfd. Total production of national companies during the year was 389.28 Bcf. In the past year total production by national companies was 1081.21 MMcfd. 68 wells were open for production during the year.

Out of total production IOCs share was 1596.63 MMcfd. Total production of IOCs during the year was 582.78 Bcf. IOCs produced this volume of gas using 43 wells. During this year maximum gas production was recorded from Bibiyana Gas field. Table (Below) compares company wise gas production for 2016-17.

MMcfd	SGFL	BGFCL	BAPEX	Chevron	Tullow	Total
2016-17	140.60	825.5	100.4	1500.5	96.14	2663.13

During the year maximum condensate recovery was 8844.16 bbl/day from Bibiyana gas field. Jalalabad gas field occupied second position and daily condensate recovery was 1330.85 bbl/day. Condensate recovery from Kailas Tila gas field was 586.53 bbl/day. In addition to condensate, NGL, Kerosene, HSD, and MS are recovered. Condensate recovery arranged according to volume.

Table below shows volume of liquid products in 1000 liter from well stream.

FY	MS	HSD	NGL	Condensate	SKO
2016-17	125478.74	53071.58	24881	690794.38	12511.93

In 2016-17 fiscal year Bangladesh Petroleum Exploration and Production Company (BAPEX) and two gas producing companies (BGFCL and SGFL) operating 20 gas fields in the country. Among them 17 fields are in production and 3 fields are suspended. During the year total production of national companies logged 389.28 Bcf, which equals to 1066.5 MMcfd. National companies produced through 68 wells i.e., average well wise production was 15.68 MMcfd. Well wise maximum production was 100.87 MMcfd (Bibiyana 1) and minimum production was 10.2 MMcfd (Begumganj).

3.1. Bangladesh Petroleum Exploration and Production Company Ltd. (BAPEX):

BAPEX is the Exploration and Production Company of Petrobangla. During the year this company operated 9 gas fields i.e. Begumganj, Shahbazpur, Salda, Fenchuganj, Semutang, Sundalpur , Srikail,Rupgonj and Feni gas fields. Among them Feni is suspended for a long time. Rupganj,

Sundalpur and Srikail are three discoveries by BAPEX. Geologically Bangura and Srikail could be a single anticline. During the year the company produced 36.65 Bcf gas and daily average gas production rate of 100.4 MMcfd. During the year 41.21 thousand bbl condensate was recovered.

3.1.1 Begumganj Gas Field:

During the year this field gas produced 0.006 Bcf and daily average gas production rate of 0.017 MMcfd and no condensate was recovered from this field. This gas field is gas production suspended at August 2016.

3.1.2 Fenchuganj Gas Field:

Fenchuganj Gas Field is the main gas producer of the company. During the year this field produced 8.77 Bcf gas and daily average gas production rate of 24.03 MMcfd. In addition to gas, from this field during the year 3819.45 bbl condensate was recovered.

3.1.3 Salda Nadi Gas Field:

During the year two wells were producing. During the year this field gas produced 1.89 Bcf and daily average gas production rate of 5.19 MMcfd. In addition to gas, from this field during the year 280 bbl condensate was recovered. Salda Nadi gas field is a small gas field. This gas field is producing for quite some time.

3.1.4 Shahbazpur Gas Field:

Shahbazpur gas field in located in Shahbazpur i.e. Bhola island because of this gas supply is limited within the island. During the year this field gas produced 9.78 Bcf and daily average gas production rate of 26.8 MMcfd. In addition to gas, from this field during the year 1158.1 bbl condensate was recovered.

3.1.5 Semutang Gas Field:

This gas field was discovered in 1970-71 Oil & Gas Development Corporation. After independence the area, including the discovered gas pool was awarded Shell Oil. Shell drilled another well. Shell left the country as the reward was not attractive for them. This field was awarded to BAPEX. This well was completed as a gas producer in December 2011. During the year this field gas produced 0.78 Bcf and daily average gas production rate of 2.14 MMcfd. In addition to gas, from this field during the year 187.62 bbl condensate was also recovered.

3.1.6 Sundalpur Gas Field:

This gas field was discovered by BAPEX in 2011-12. In the same year this gas field was brought into production in March 2011-12. During the year this field gas was not in production.

3.1.7 Srikail Gas Field:

Srikail gas field was discovery of BAPEX. This field was brought into production in on 14 May, 2002. During the year this field gas produced 14.99 Bcf and daily average gas production rate of 41.07 MMcfd. In addition to gas, from this field during the year 34.91 thousand bbl condensate was

also recovered. It may be mentioned here that geologically Srikail is part of Bangura structure. Tulllow is producing from this structure. A joint study on Srikail and Bangura can be initiated for better understanding of the structure.

3.1.8 Rupgonj Gas Field:

During the year this field gas produced 0.43 Bcf and daily average gas production rate of 1.18 MMcfd. In addition to gas, from this field during the year 0.85 bbl condensate was also recovered.

3.1.9 Feni Gas Field

Feni gas field was handed over to NIKO Resources (Bangladesh) Ltd. and BAPEX for operation as per order of Ministry of Energy and Mineral Resources, Government of the People's Republic of Bangladesh. This gas field is suspended for a long time.

3.2 Bangladesh Gas Fields Company Ltd (BGFCL):

This is the second largest gas producer of the country after chevron. The company operates Titas, Habiganj, Bakhrabad, Narshingdi, Meghna and Kamta gas fields. Among them Kamta is suspended for a long period. During the year this company gas produced 301.31 Bcf and daily average gas production rate of 825.5 MMcfd. In term of gas reserve, Titas is the largest gas field of the country. During the year 177.91 thousand bbl condensate was recovered.

3.2.1 Titas Gas Field:

Titas gas field is the largest gas field of the country and second largest gas producer. During the year this field gas produced 191.13 Bcf and daily average gas production rate 523.64 MMcfd. In addition to gas, from this field during the year 141.9 thousand bbl condensate was recovered.

3.2.2 Habiganj Gas Field:

Habiganj Gas Field is the third largest gas field of the country. During the year Habiganj field gas produced 81.17 Bcf and daily average gas production rate of 222.38 MMcfd. In addition to gas, from this field during the year 3.88 thousand bbl condensate was recovered.

3.2.3 Bakhrabad Gas Field:

During the year this field gas produced 14.26 Bcf and daily average gas production rate of 39.07 MMcfd. In addition to gas, from this field during the year 7.36 thousand bbl condensate was recovered.

3.2.4 Narshingdi:

During the year this field gas produced 10.32 Bcf and daily average gas production rate of 28.27 MMcfd. In addition to gas, from this field during the year 17.06 thousand bbl condensate was recovered.

3.2.5 Meghna Gas Field:

During the year this field gas produced 4.43 Bcf and daily average gas production rate 12.14 MMcfd. Gas production rate was quite stable. In addition to gas, from this field during the year 7.7 thousand bbl condensate was recovered.

3.2.6 Kamta Gas Field:

This Gas field is suspended for a long time.

3.3 Sylhet Gas Fields Ltd:

This company operatesfive gas fields i.e. Kailas tila, Rashidpur, Beani bazar , Sylhet and Chatak. Chatak is suspended for a long time. During the year this company gas produced 51.32 Bcf and average daily gas production rate of 140.60 MMcfd. During the year 312.98 thousand bbl condensate was recovered. Brief description of the gas fields are provided below. It may be mention here that gas production stated in this part of the world from Sylhet gas field.

3.3.1 Kailas Tila gas field:

This is the main producer of SGFL. During the year this field gas produced 23.72 Bcf and average gas production rate of 64.99 MMcfd. During the year four wells were producing. In addition to gas, liquid product is also recovered. This gas field is quite wet and maximum recovery of liquid was achieved from this gas field. In addition to gas, from this field during the year 214.08 thousand bbl condensate was recovered.

3.3.2 Rashidpur Gas Field:

During the year this field gas produced 20.61 Bcf and average gas production rate of 56.47 MMcfd. In addition to gas, from this field during the year 11.45 thousand bbl condensate was recovered.

3.3.3 Beani Bazar Gas Field:

During the year this field gas produced 4.19 Bcf and average gas production rate of 11.48 MMcfd. In addition to gas, from this field during the year 68.15 thousand liter condensate was recovered.

3.3.4 Sylhet Gas Field:

This is the oldest producing gas field of the country. Sylhet structure is known for first oil discovery of the country. During the year this field gas produced 2.80 Bcf and average gas production rate of 7.67 MMcfd. In addition to gas, from this field during the year 19.29 thousand bbl condensate was also recovered.

3.3.5 Chatak Gas Field:

This gas field is suspended for a long time.

4.0 Gas Productions (International Companies):

Chevron, Tullow and Santos are three international oil and gas companies (IOCs) operating in the country. During the year Chevron and Tullow gas produced 582.78 Bcf and average daily gas production rate of 1596.63 MMcfd and Santos was not in operation since October 2013. In average per well gas production of IOCs wells is much higher than that of the national companies. IOCs produce 1596.63 MMcfd using 43 wells and average per well production of IOCs well is 37.13 MMcfd. During the year 3818.88 thousand bbl condensate was recovered by the IOCs and average daily recovery of condensate was 10.46 thousand bbl per day.

4.1 Chevron Bangladesh:

This company is the largest producer of gas of the country. Chevron operates three gas fields i.e. Bibiyana, Jalalabad and Moulavi Bazar. It may be mentioned that Bibiyana is the second largest gas field of the country and it is also the largest gas producer of the country. During the year Chevron gas produced 547.69 Bcf and average daily gas production was 1500.49 MMcfd. In addition to gas, this company producer 3715.38 thousand bbl condensate was recovered.

4.1.1 Bibiyana Gas field:

During the year Bibiyana Gas field gas Produced 437.17 Bcf and average daily gas production rate of 1197.7 MMcfd. In addition to gas, from this field during the year 3228.11 thousand bbl condensate was also recovered.

4.1.2 Jalalabad Gas field:

Jalalabad is the second gas field operated by Chevron. During the year Jalalabad gas field gas produced 96.81 Bcf and average daily gas production rate of 265.23 MMcfd. In addition to gas, from this field during the year 485.8 thousand bbl condensate was also recovered.

4.1.3 Moulavi Bazar gas field:

During the year Moulavi Bazar gas field gas produced 13.71 Bcf and average daily gas production rate of 37.56 MMcfd. In addition to gas, from this field during the year 1.51 thousand bbl condensate was also recovered.

4.2 Tullow Bangladesh Limited:

4.2.1 Bangura gas field:

Tullow Oil operates Bangura gas field. During the year Bangura gas field gas produced 35.09 Bcf and average daily gas production rate of 96.14 MMcfd. In addition to gas, from this field during the year 103.5 thousand bbl condensate was also recovered.

4.3 Santos Bangladesh Limited

4.3.1 Sangu gas field:

Sangu is the lone offshore gas field operated by Santos from Australia. This gas field is is suspended at October 2013.

5.0 Gas Production:

During the year gas production has been recorded 972.06 Bcf and average daily gas production was 2663.1 MMcfd. Sector wise gas consumption during the year 987.27 Bcf and average daily gas supply rate of 2704.86 MMcfd is shown in Table 27 and Figure 22. The consumption was higher than production (972.06-987.27=15.21 Bcf) due to system gain.

Table 2 : Company wise Gas Production in FY 2016-2017

SI No.	Name of Company	Total well	Production well	Suspended well	Bcf	MMcfd
1.	BAPEX	**25**	**14**	11	**36.65**	**100.40**
2.	BGFCL	**52**	**42**	**10**	**301.31**	**825.499**
3.	SGFL	**22**	**13**	**09**	**51.32**	**140.602**
4.	Chevron	**40**	**38**	**02**	547.69	1500.49
5.	Tullow	**5**	**5**	**0**	35.09	96.137
6	Santos	**9**	**0**	**9**	Suspended	Suspended
Total		**153**	**112**	**41**	972.06	2663.1

Source: HCU Data bank

Figure 2 : Company wise Gas Production

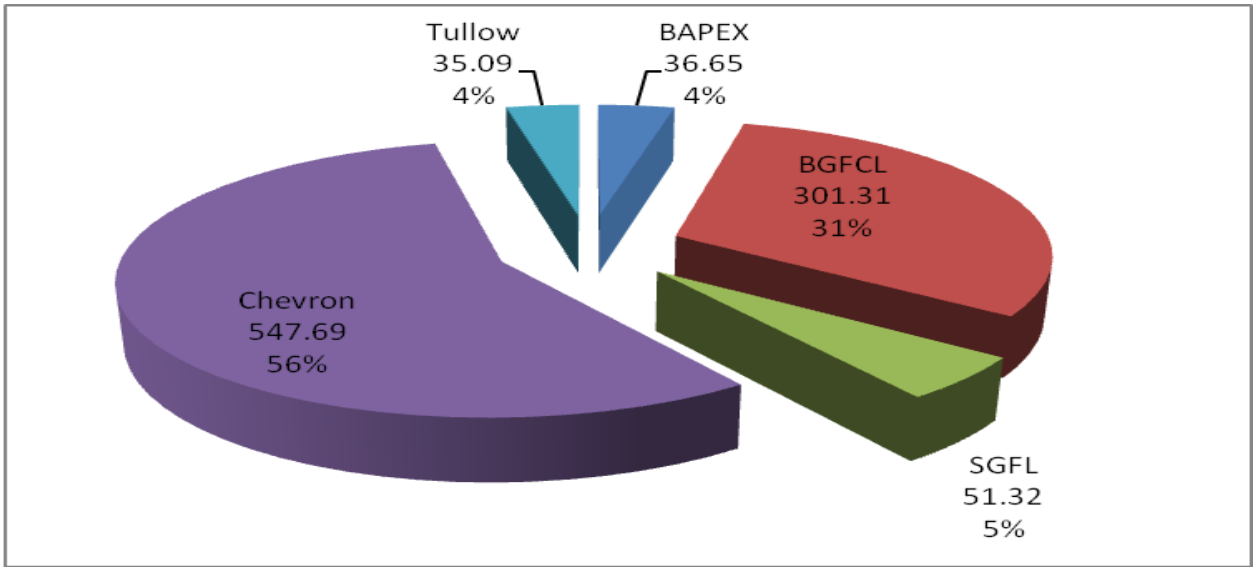


Table 3 : Field wise Gas Production in FY 2016-2017

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Begumganj	1	1	-	0.006	0.0164
2.	Shahbazpur	4	4	-	9.78	26.795
3.	Semutang	2	1	1	0.78	2.137
4.	Fenchuganj	3	2	1	8.77	24.027
5.	Salda Nadi	4	2	2	1.89	5.1781
6.	Srikail	3	3	-	14.99	41.068
7.	Sundalpur	2	0	2	0	0
8.	Rupgonj	1	1	-	0.43	1.1781
9.	Feni	5	0	5	Suspended	Suspended
10.	Meghna	1	1	-	4.43	12.137
11.	Narshingdi	2	2	-	10.32	28.274
12.	Habiganj Gas field	11	7	4	81.17	222.38
13.	Bakhrabad	10	6	4	14.26	39.068
14.	Titas Gas field	27	26	1	191.13	523.64
15.	Kamta	1	0	1	Suspended	Suspended
16.	Bibiyana Gas field	26	26	-	437.17	1197.7
17.	Moulavi Bazar	7	5	2	13.71	37.562
18	Jalalabad Gas field	7	7	-	96.81	265.23
19.	Kailas Tila	7	4	3	23.72	64.986
20.	Sylhet	4	2	2	2.80	7.6712
21.	Rashidpur	8	5	3	20.61	56.466
22.	Beani Bazar	2	2	-	4.19	11.479
23	Chatak	1	0	1	Suspended	Suspended
24	Bangura	5	5	-	35.09	96.137
25	Sangu	9	0	9	Suspended	Suspended
Total		**153**	**112**	**41**	972.065	**2663.2**

Source: HCU Data bank

Figure 3 : Field wise Gas Productions

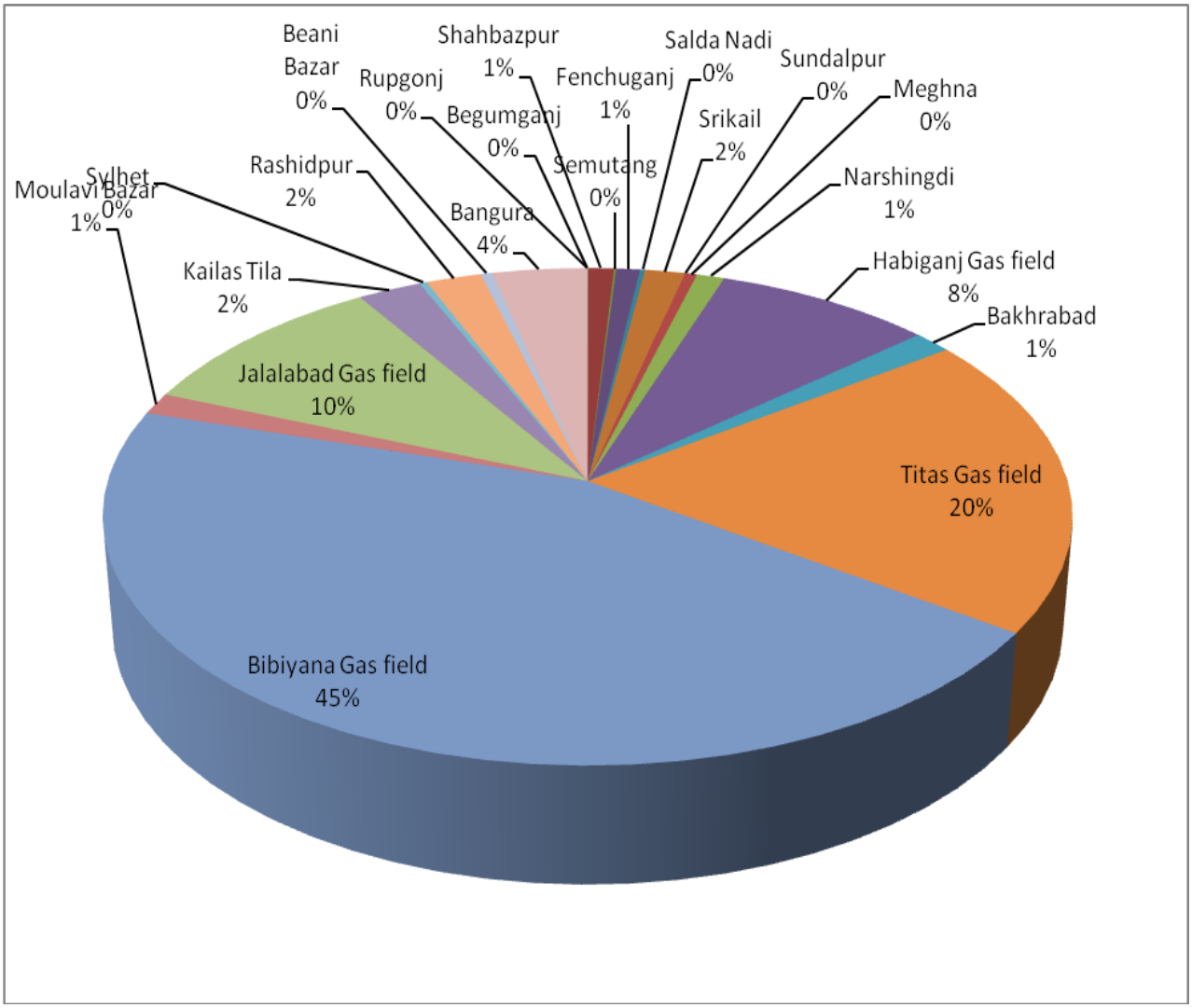


Table 4: Major four (4) Gas producing fields in FY 2016-2017

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Habiganj Gas field	11	7	4	81.17	222.384
2.	Titas Gas field	27	26	1	191.13	523.644
3.	Bibiyana Gas field	26	26	0	437.17	1197.73
4.	Jalalabad Gas field	7	7	0	96.81	265.233
Total		71	66	5	806.28	2209

Source: HCU Data bank

Figure 4 : Major four (4) Gas producing fields

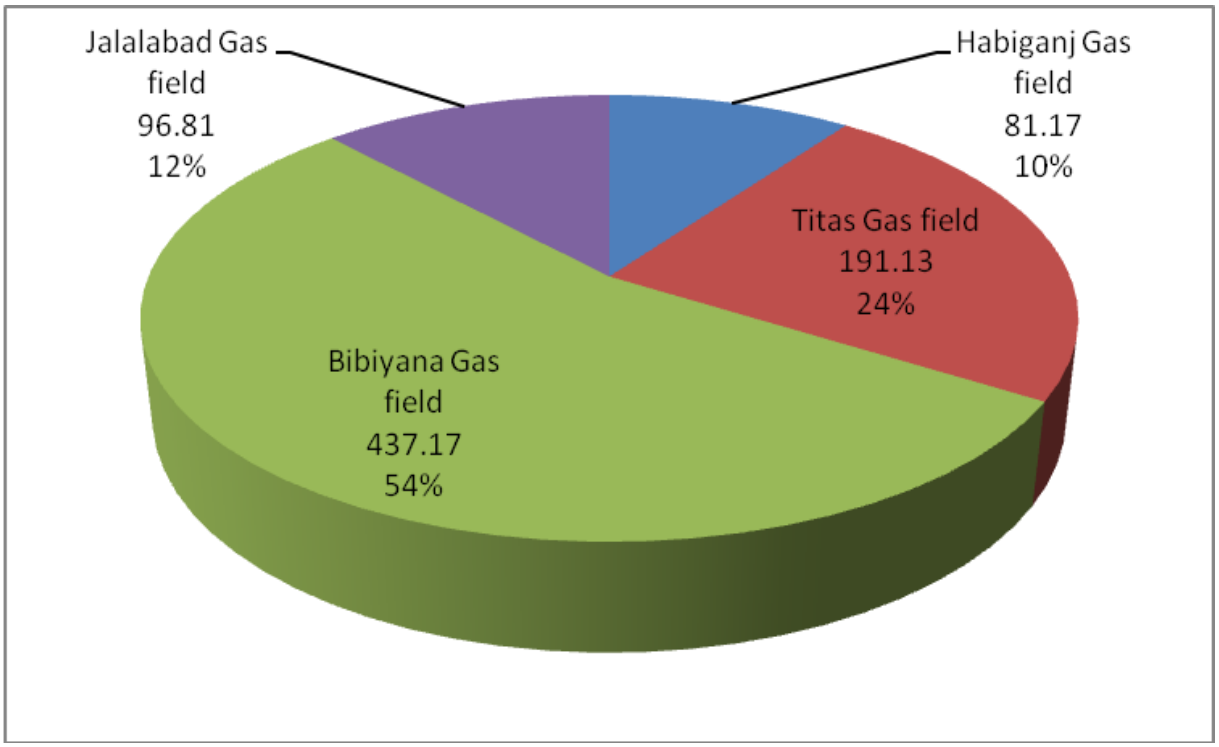


Table 5 : Comparison of Annual Gas Production by National Companies in FY 2016-2017

SI No.	Name of National Company	Total well	Production well	Suspended well	Bcf	MMcfd
1.	BAPEX	**25**	**14**	**11**	**36.65**	**100.40**
2.	BGFCL	**52**	**42**	**10**	**301.31**	**825.499**
3.	SGFL	**22**	**13**	**09**	**51.32**	**140.602**
Total		**99**	**68**	**31**	**389.28**	**1066.5**

Source: HCU Data bank

Figure 5 : Comparison of Annual Gas production by National Companies

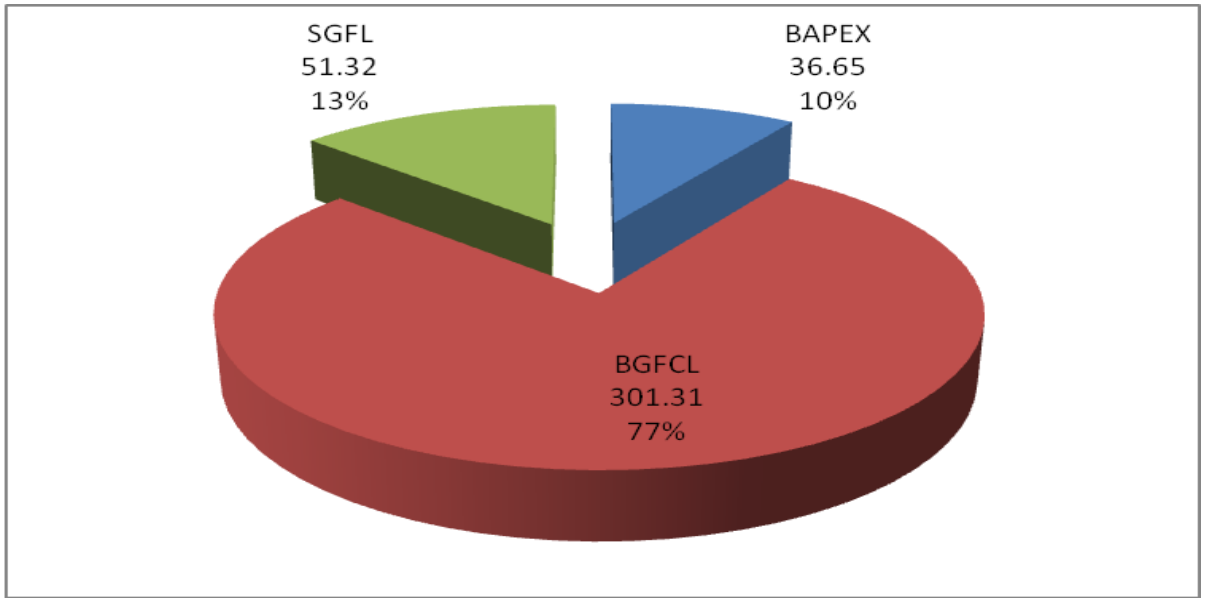


Table 6 : Field wise Annual Gas Production of Gas Fields Under National Companies, FY 2016-17

Sl No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Begumganj	1	1	-	0.006	0.0164
2.	Shahbazpur	4	4	-	9.78	26.795
3.	Semutang	2	1	1	0.78	2.137
4.	Fenchuganj	3	2	1	8.77	24.027
5.	Salda Nadi	4	2	2	1.89	5.1781
6.	Srikail	3	3	-	14.99	41.068
7.	Sundalpur	2	0	2	0	0
8.	Rupgonj	1	1	-	0.43	1.1781
9.	Feni	5	0	5	Suspended	Suspended
10.	Meghna	1	1	-	4.43	12.137
11.	Narshingdi	2	2	-	10.32	28.274
12.	Habiganj Gas field	11	7	4	81.17	222.38
13.	Bakhrabad	10	6	4	14.26	39.068
14	Titas Gas field	27	26	1	191.13	523.64
15.	Kamta	1	0	1	Suspended	Suspended
16	Kailas Tila	7	4	3	23.72	64.986
17	Sylhet	4	2	2	2.80	7.6712
18	Rashidpur	8	5	3	20.61	56.466
19	Beani Bazar	2	2	-	4.19	11.479
20	Chatak	1	0	1	Suspended	Suspended
Total		**99**	**69**	**30**	**389.276**	**1066.5**

Source: HCU Data bank

Figure 6 : Field wise Annual Gas production of National Companies

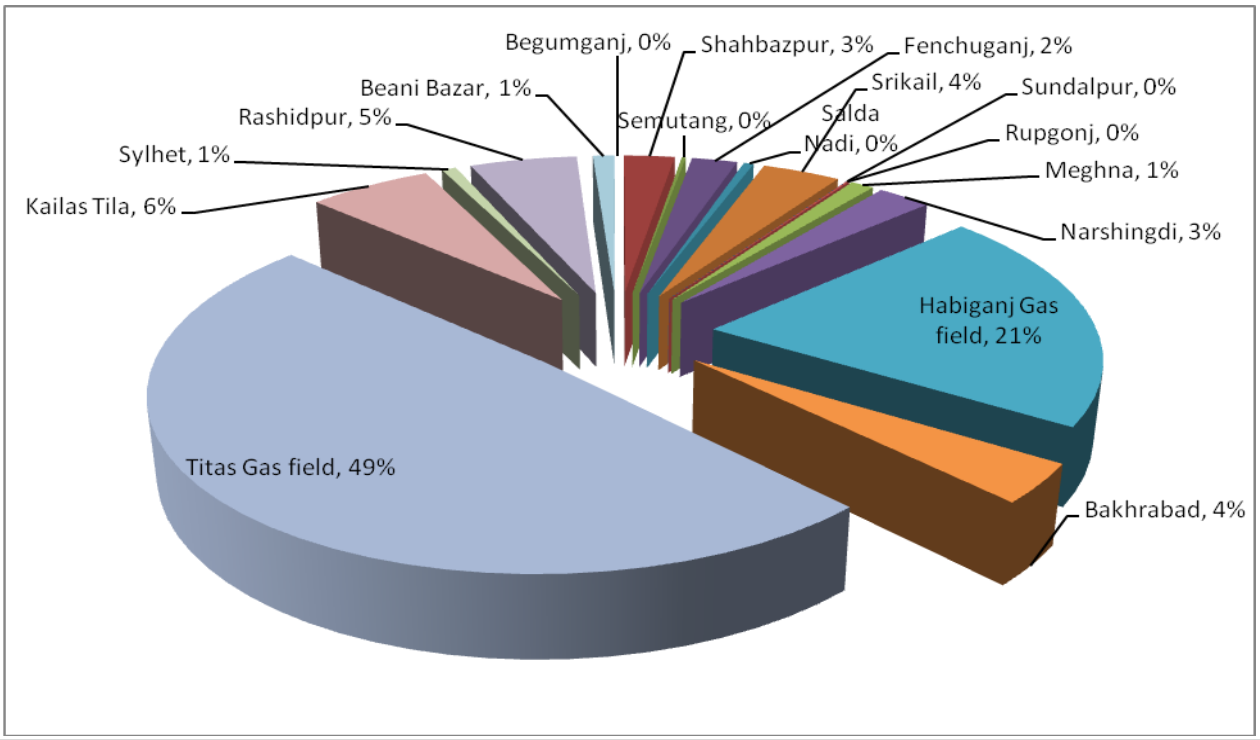


Table 7 : Field wise Gas Production in BAPEX in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Begumganj	1	1	-	0.006	0.0164
2.	Shahbazpur	4	4	-	9.78	26.795
3.	Semutang	2	1	1	0.78	2.137
4.	Fenchuganj	3	2	1	8.77	24.027
5.	Salda Nadi	4	2	2	1.89	5.1781
6.	Srikail	3	3	-	14.99	41.068
7.	Sundalpur	2	0	2	0	0
8.	Rupgonj	1	1	-	0.43	1.1781
9	Feni	5	0	5	Suspended	Suspended
		25	**14**	**11**	**36.65**	**100.40**

Source: HCU Data bank

Figure 7 : Field wise Gas Production in BAPEX

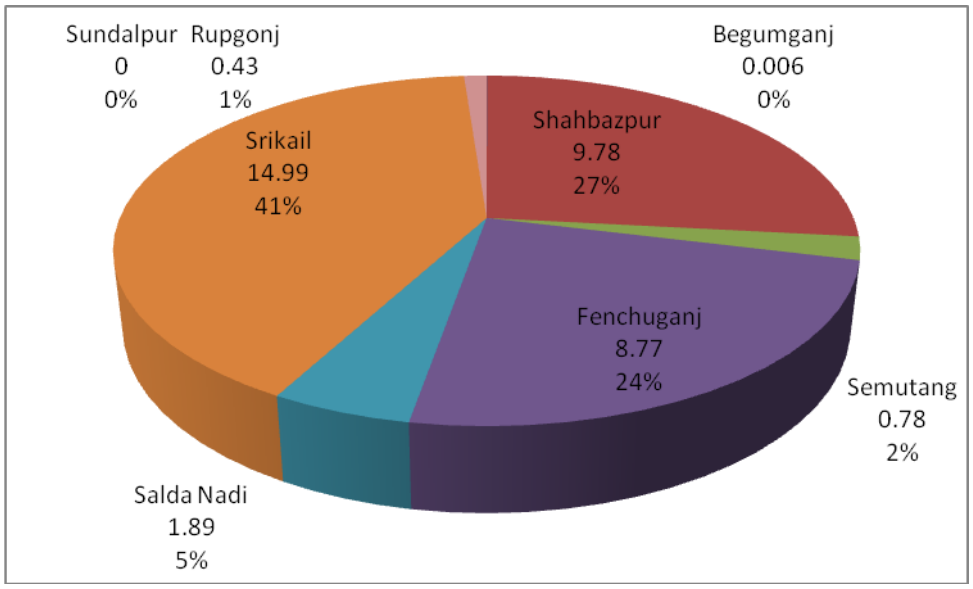


Table 8 : Field wise Gas Production in BGFCL in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Meghna	1	1	0	4.43	12.137
2.	Narshingdi	2	2	0	10.32	28.274
3.	Habiganj Gas field	11	7	4	81.17	222.38
4.	Bakhrabad	10	6	4	14.26	39.068
5.	Titas Gas field	27	26	1	191.13	523.64
6.	Kamta	1	0	1	Suspended	Suspended
		52	42	10	301.31	825.499

Source: HCU Data bank

Figure 8 : Field wise Gas Production in BGFCL

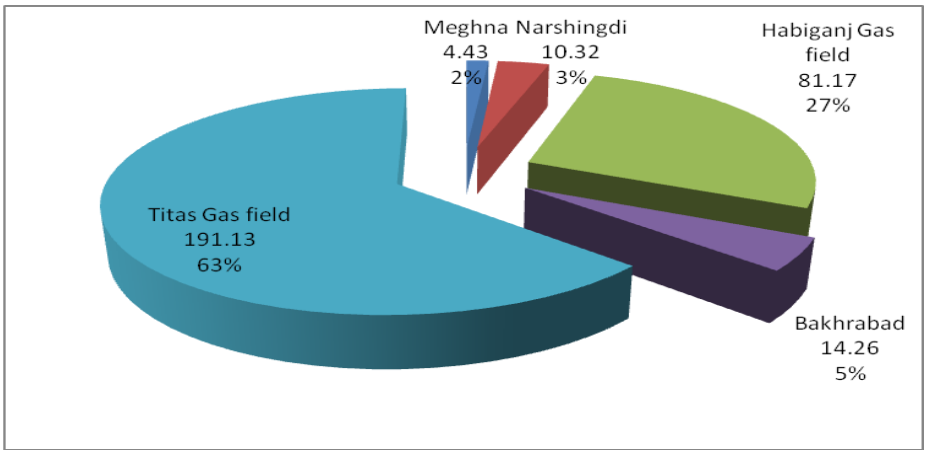


Table 9 : Field wise Gas Production in SGFL in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Kailas Tila	7	4	3	23.72	64.986
2.	Sylhet	4	2	2	2.80	7.6712
3.	Rashidpur	8	5	3	20.61	56.466
4.	Beani Bazar	2	2	0	4.19	11.479
5.	Chatak	1	0	1	Suspended	Suspended
	Total	**22**	**13**	**9**	**51.32**	**140.602**

Source: HCU Data bank

Figure 9 : Field wise Gas Production in SGFL

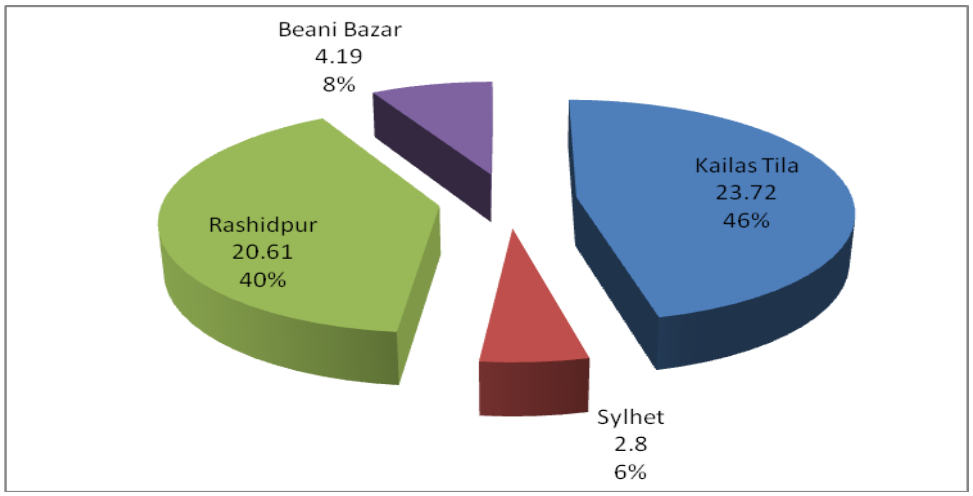


Table 10 : Comparison of Annual Gas Production by International Companies in FY 2016-2017

SI No.	Name of Company	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Chevron	40	38	2	547.69	1500.49
2.	Tullow	5	5	0	35.09	96.137
3.	Santos	9	0	9	Suspended	Suspended
Total		54	43	11	582.78	1596.63

Source: HCU Data bank

Figure 10 : Comparison of Annual Gas Production by International Companies

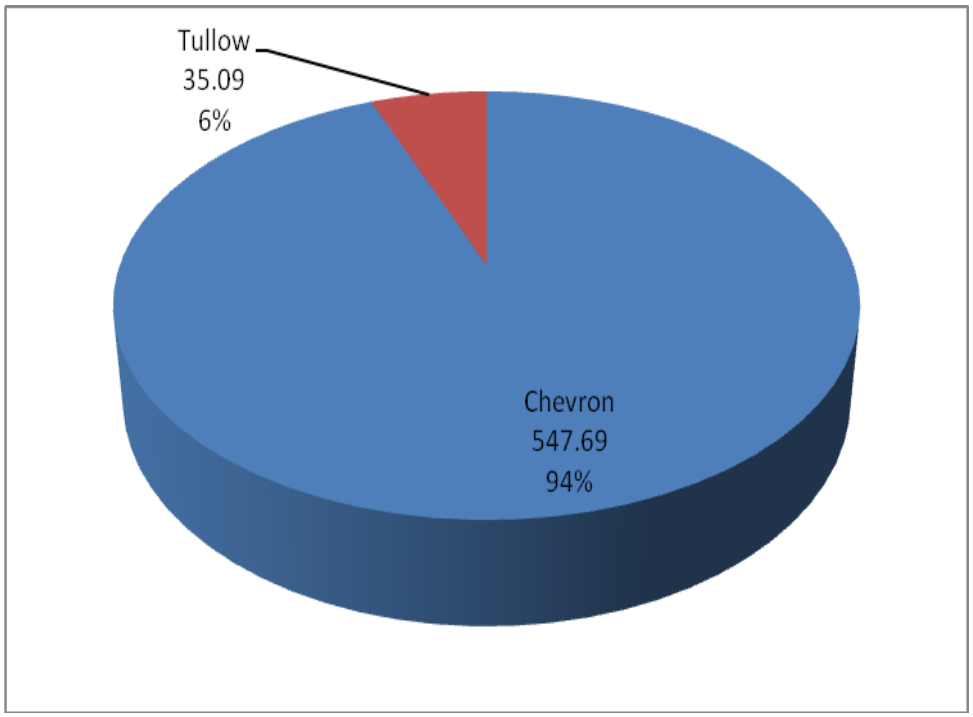


Table 11 : Field wise Gas Production by IOCs in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Bibiyana Gas field	26	26	0	437.17	1197.7
2.	Moulavi Bazar	7	5	2	13.71	37.562
3.	Jalalabad Gas field	7	7	0	96.81	265.23
4.	Bangura	5	5	0	35.09	96.137
5.	Sangu	9	0	9	Suspended	Suspended
	Total	54	43	11	582.78	1596.63

Source: HCU Data bank

Figure 11 : Field wise Gas Production of IOCs

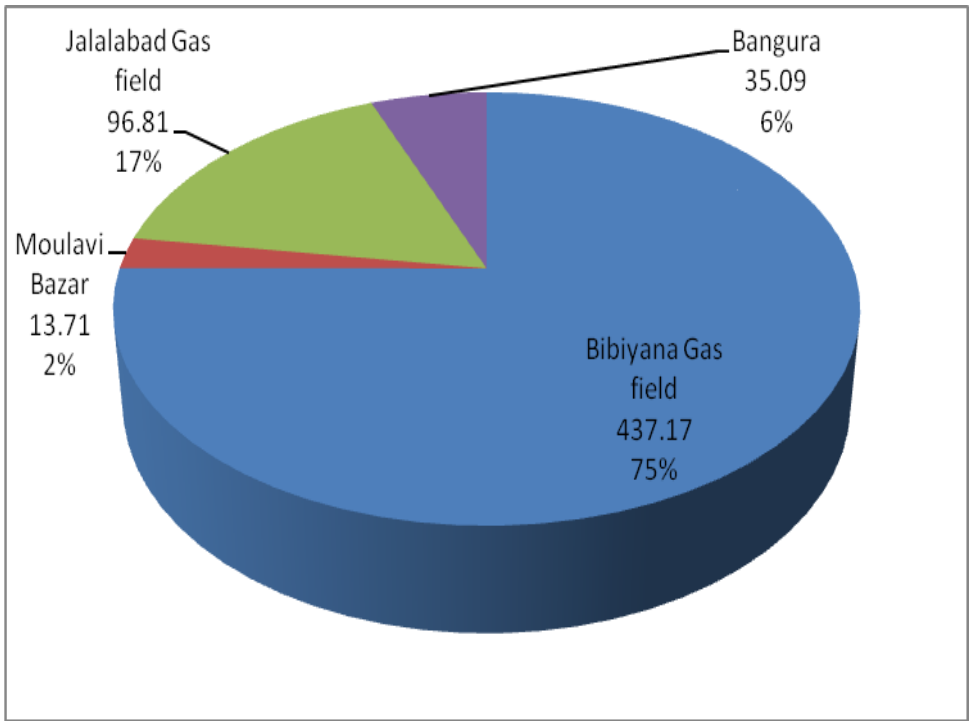


Table 12 : Field wise Gas Production by Chevron Operated Gad Fields in FY 2016-2017

[

SI No.	Name of Gas field	Total well	Production well	Suspended well	Bcf	MMcfd
1.	Bibiyana Gas field	26	26	0	437.17	1197.7
2.	Moulavi Bazar	7	5	2	13.71	37.562
3.	Jalalabad Gas field	7	7	0	96.81	265.23
	Total	40	38	2	547.69	1500.49

Source: HCU Data bank

Figure 12 : Field wise Gas Production by Chevron operated Gas Fields

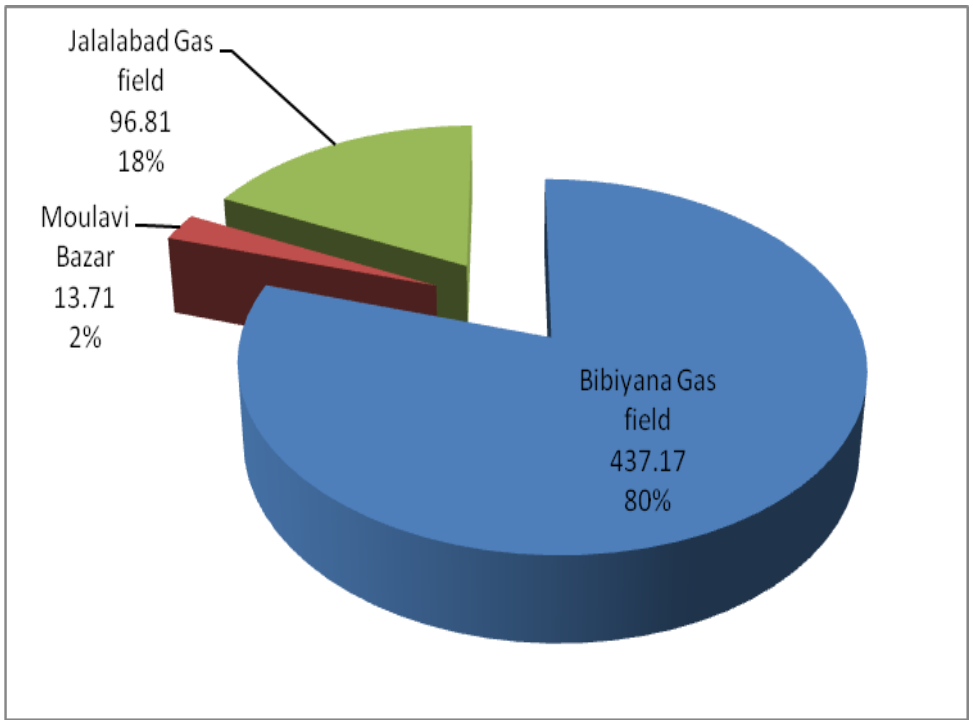


Table 13 : Field wise Condensate Recovery in FY 2016-2017

SI No.	Name of Gas field	Total well	Production well	Suspended well	bbl/year	bbl/month	bbl/day
1.	Begumganj	1	1	0	0	0	0
2.	Shahbazpur	4	4	0	1158.1	96.508333	3.17287
3.	Semutang	2	1	1	187.62	15.635	0.51402
4.	Fenchuganj	3	2	1	3819.45	318.2875	10.4642
5.	Salda Nadi	4	2	2	279.99	23.3325	0.76709
6.	Srikail	3	3	0	34914.35	2909.5292	95.6557
7.	Sundalpur	2	0	2	0	0	0
8.	Rupgonj	1	1	0	853	71.083333	2.33698
9.	Feni	5	0	5	Suspende	Suspended	Suspen
10	Meghna	1	1	0	7709.42	642.45167	21.1216
11	Narshingdi	2	2	0	17066.46	1422.205	46.7574
12	Habiganj Gas field	11	7	4	3882.25	323.52083	10.6363
13	Bakhrabad	10	6	4	7356	613	20.1534
14	Titas Gas field	27	26	1	141896.5	11824.708	388.757
15.	Kamta	1	0	1	Suspende	Suspended	Suspen
16	Bibiyana Gas field	26	26	0	3228116.8	269009.73	8844.15
.17	Moulavi Bazar	7	5	2	1507.7	125.64167	4.13068
.18	Jalalabad Gas field	7	7	0	485759.25	40479.938	1330.84
.19	Kailas Tila	7	4	3	214083.59	17840.299	586.530
20	Sylhet	4	2	2	19292.22	1607.685	52.8553
.21	Rashidpur	8	5	3	11452.93	954.41083	31.3778
.22	Beani Bazar	2	2	0	68151.32	5679.2767	186.715
23	Chatak	1	0	1	Suspende	Suspended	Suspen
.24	Bangura	5	5	0	103503	8625.25	283.569
25	Sangu	9	0	9	Suspende	Suspended	Suspen
Total		153	112	41	4350989.9	362582.49	11920.5

Source: HCU Data bank

Figure 13 : Field wise Condensate Recovery in BBL/Day

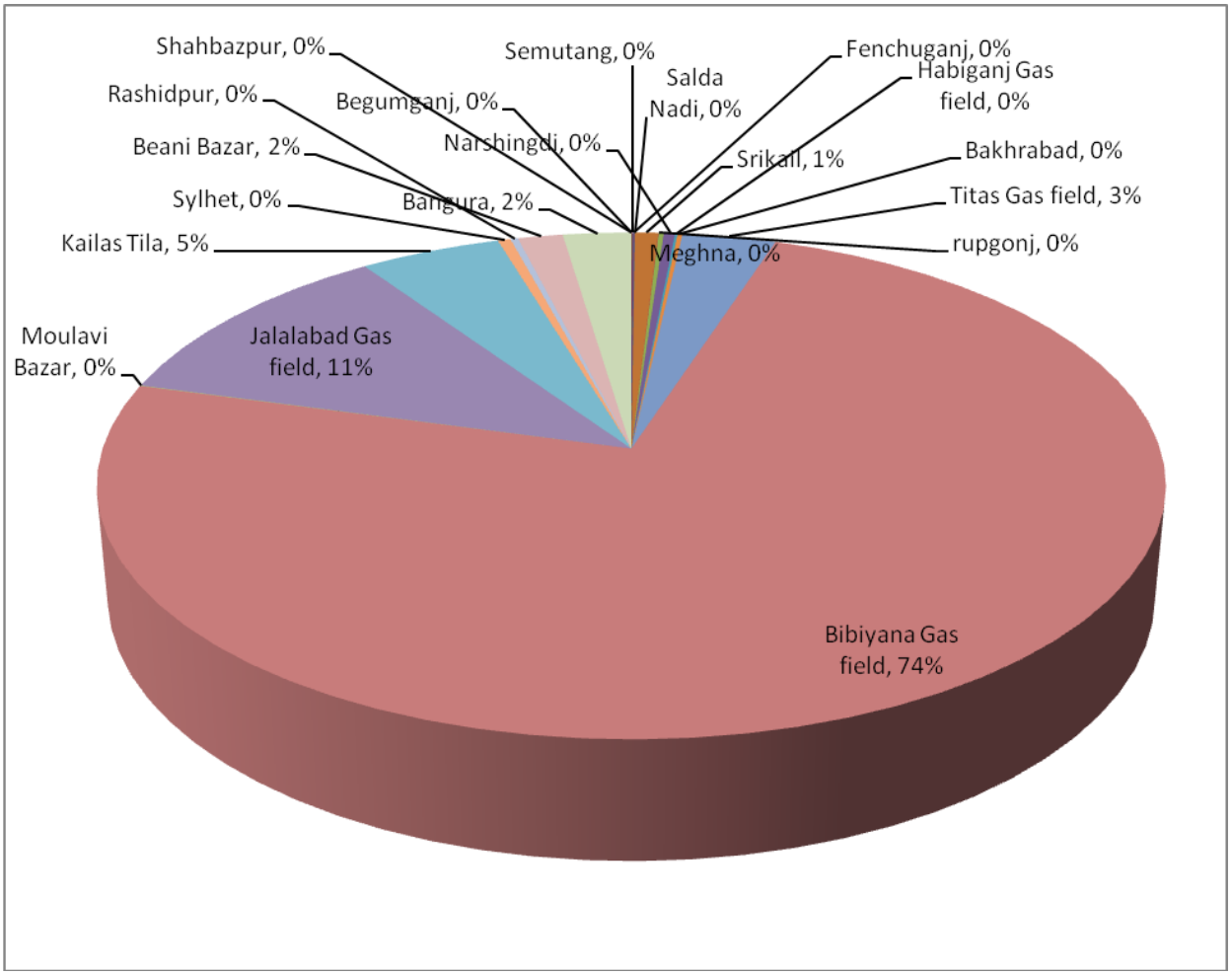


Table 14 : Comparison of Condensate Production by National Companies in FY 2016-2017

SI No.	Name of National Company	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	BAPEX	25	14	11	41212.51	3434.3759	112.91099
2.	BGFCL	52	42	10	177910.63	14825.89	487.43
3.	SGFL	22	13	9	312980.1	26081.672	857.47962
Total		99	69	30	532103.24	44341.938	1457.8206

Source: HCU Data bank

Figure 14 : Comparison of Condensate production by National Companies

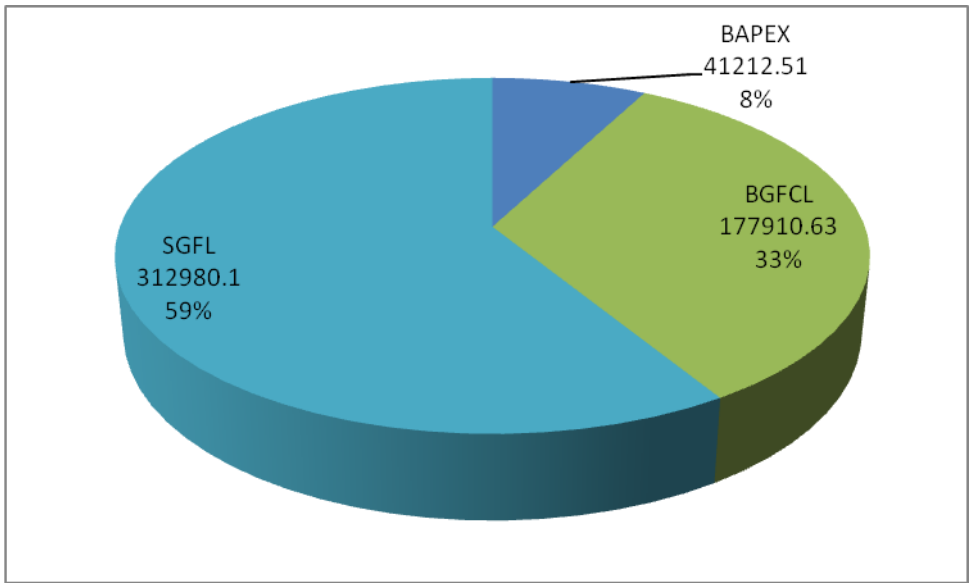


Table 15 : Comparison of Condensate Production by IOCs in FY 2016-2017

SI No.	Name of Company	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	Chevron	40	38	2	3715383.8	309615.31	10179.13
2.	Tullow	5	5	0	103503	8625.25	283.56986
3.	Santos	9	0	9	Suspended	Suspended	Suspended
Total		54	43	11	3818886.8	318240.56	10462.703

Source: HCU Data bank

Figure 15 : Comparison of Condensate production by International Companies

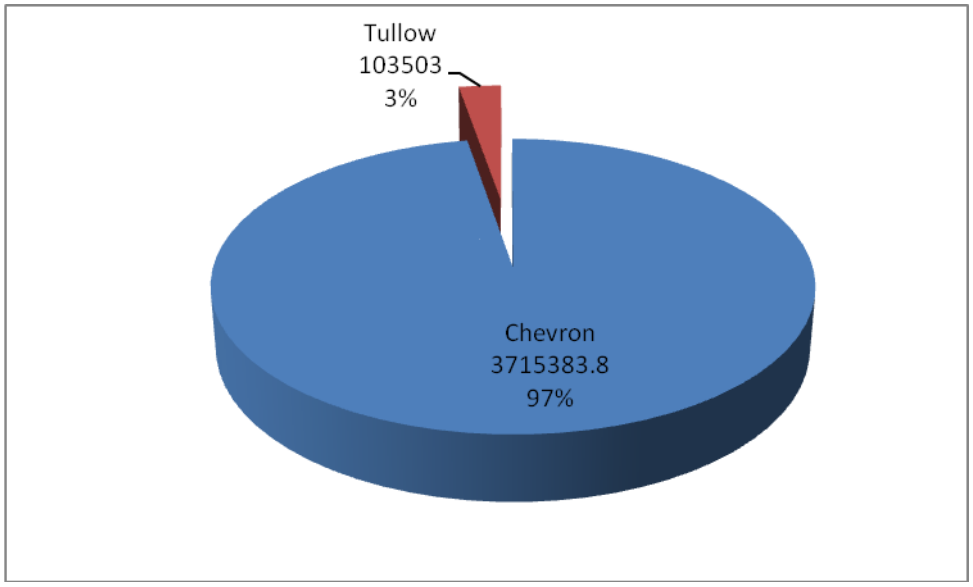


Table 16 : Field wise Condensate Production in BAPEX in FY 2016-2017

SI No.	Name of Gas field	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	Begumganj	1	1	0	0	0	0
2.	Shahbazpur	4	4	0	1158.1	96.508333	3.1728767
3.	Semutang	2	1	1	187.62	15.635	0.5140274
4.	Fenchuganj	3	2	1	3819.45	318.2875	10.464247
5.	Salda Nadi	4	2	2	279.99	23.3325	0.7670959
6.	Srikail	3	3	0	34914.35	2909.5292	95.655753
7.	Sundalpur	2	0	2	0	0	0
8.	Rupgonj	1	1	0	853	71.083333	2.3369863
9	Feni	5	0	5	Suspended	Suspended	Suspended
Total		**25**	**14**	**11**	41212.51	3434.3759	112.91099

Source: HCU Data bank

Figure 16 : Field wise Condensate Production in BAPEX

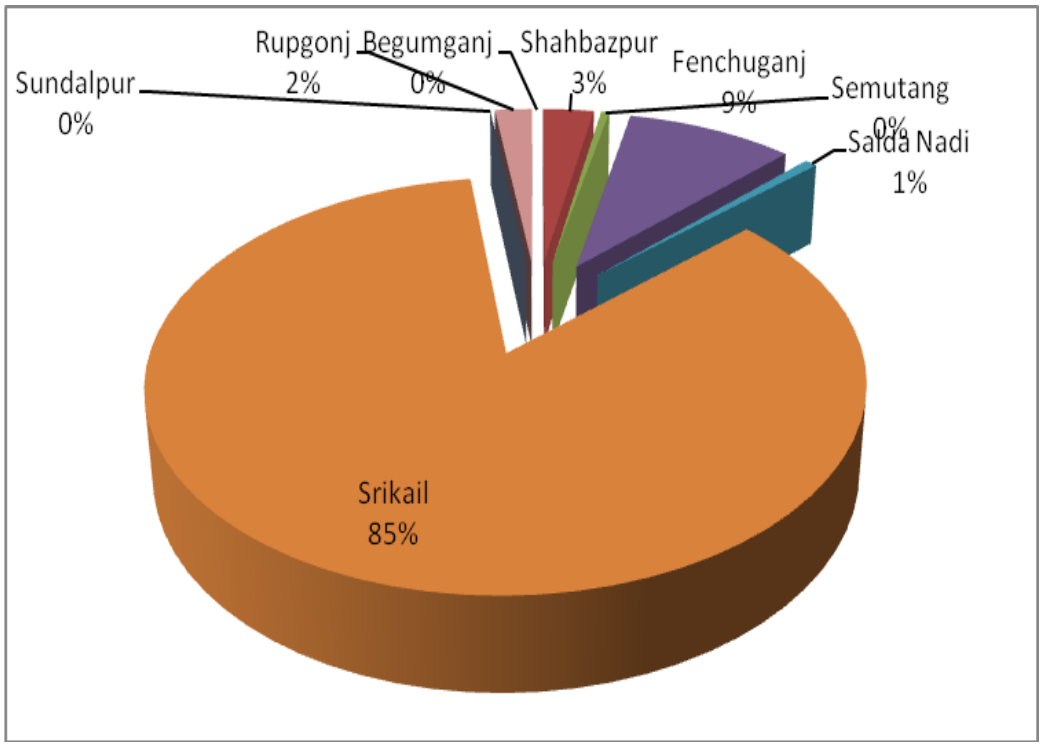


Table 17 : Field wise Condensate Production in BGFCL in FY 2016-2017

SI No.	Name of Gas field	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	Meghna	1	1	0	7709.42	642.45167	21.121699
2.	Narshingdi	2	2	0	17066.46	1422.205	46.757425
3.	Habiganj field	11	7	4	3882.25	323.52083	10.636301
4.	Bakhrabad	10	6	4	7356	613	20.153425
5.	Titas Gas field	27	26	1	141896.5	11824.708	388.75753
6.	Kamta	1	0	1	Suspended	Suspended	Suspended
Total		52	42	10	177910.63	14825.89	487.43

Source: HCU Data bank

Figure 17 : Field wise Condensate Production in BGFCL

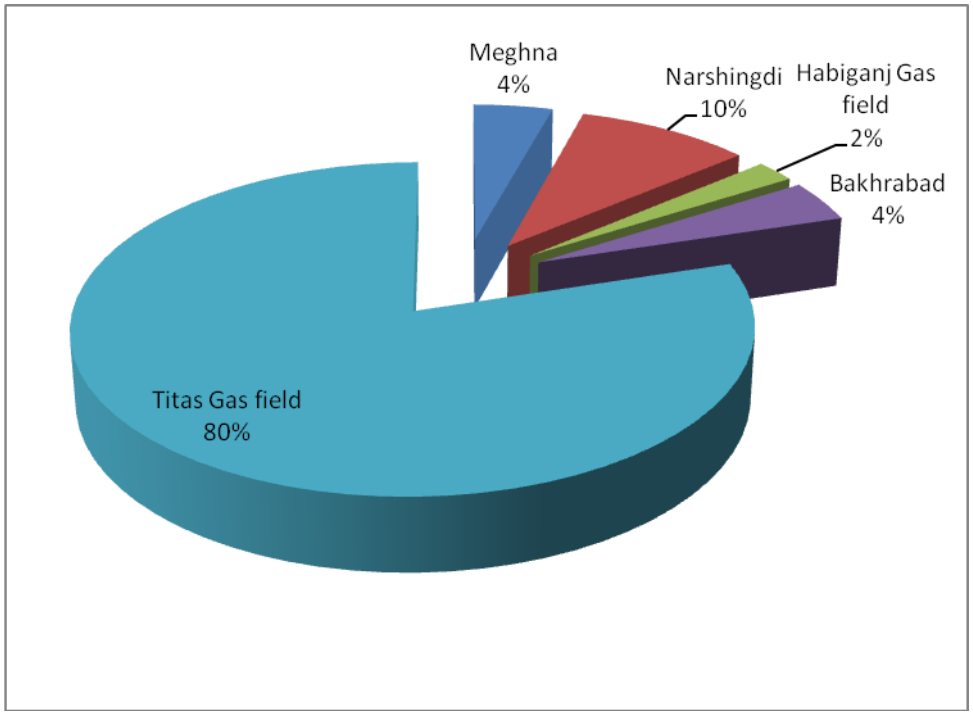


Table 18 : Field wise Condensate Productions in SGFL in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	Kailas Tila	7	4	3	214083.59	17840.299	586.53038
2.	Sylhet	4	2	2	19292.22	1607.685	52.855397
3.	Rashidpur	8	5	3	11452.93	954.41083	31.37789
4.	Beani Bazar	2	2	0	68151.32	5679.2767	186.71595
5.	Chatak	1	0	1	Suspended	Suspended	Suspended
Total		**22**	**13**	**9**	312980.06	26081.672	857.47962

Source: HCU Data bank

Figure 18 : Field wise Condensate Productions in SGFL

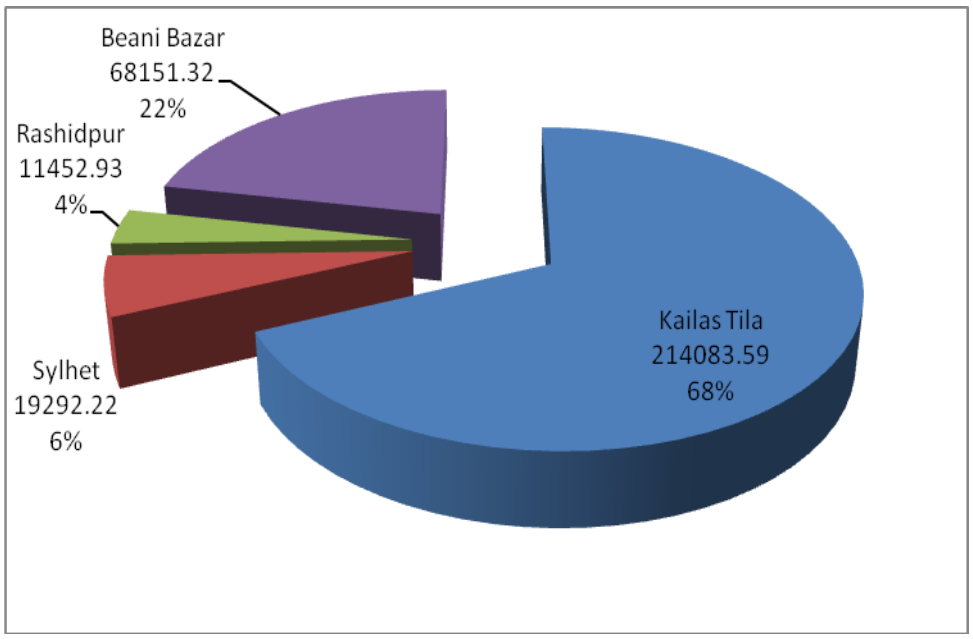


Table 19 : Field wise Condensate Production by IOCs in FY 2016-17

SI No.	Name of Gas field	Total well	Production well	Suspended well	BBL/Year	BBL/Month	BBL/Day
1.	Bibiyana	26	26	0	3228116.8	269009.73	8844.1555
2.	Moulavi Bazar	7	5	2	1507.7	125.64167	4.1306849
3.	Jalalabad Gas field	7	7	0	485759.25	40479.938	1330.8473
4.	Bangura	5	5	0	103503	8625.25	283.56986
5.	Sangu	9	0	9	Suspended	Suspended	Suspended
Total		54	43	12	3818886.8	318240.56	10462.703

Source: HCU Data bank

Figure 19 : Field wise Condensate Production by IOCs

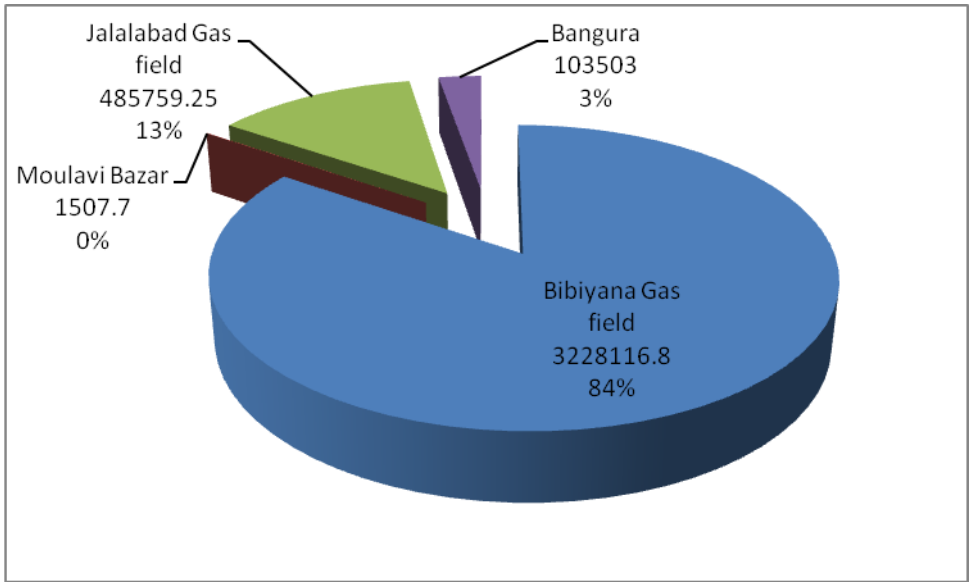
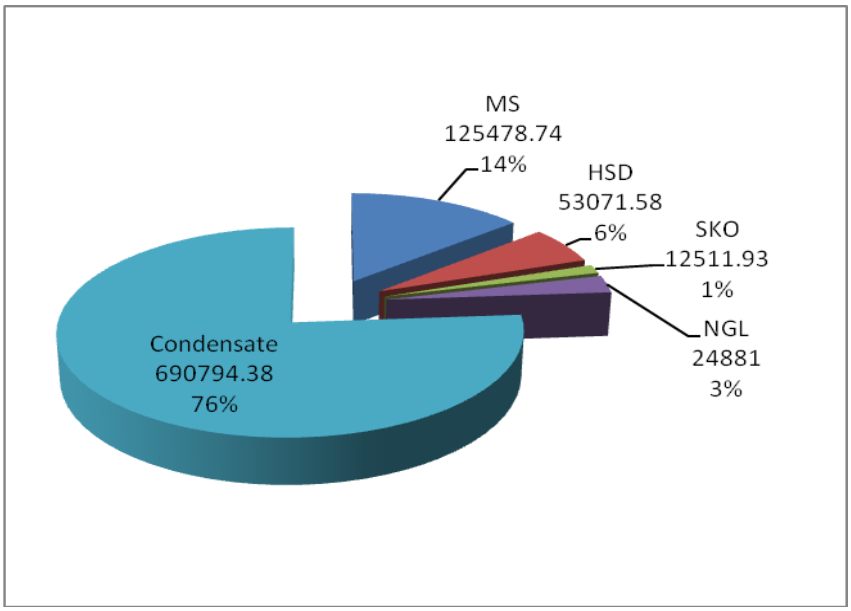


Table 20 : Annual Recovery of Liquid in 1000 Liter FY 2016-2017

SI	Name of Product	Liter
1.	MS	125478.74
2.	HSD	53071.58
3.	SKO	12511.93
4.	NGL	24881
5.	Condensate	690794.38
Total		**906737.63**

Source: MIS Report, Petrobangla

Figure 20 : Annual Recovery of Liquid in 1000 liter



6.0 Gas distribution scenario in the FY 2016-17

The following distribution companies purchase gas from the different production companies of Petrobangla & IOCs and sell to the end-users in different sectors.

- Titas Gas Transmission & Distribution Company Limited (TGTDCL)
- Bakhrabad Gas Distribution Company Limited (BGDCL)
- Jalalabad Gas Transmission and Distribution System Limited (JGTDSL)
- Pashchimanchal Gas Company Limited
- Karnaphuli Gas Distribution Company Ltd. (KGDCL)
- Sundarban Gas Company Limited (SGCL)

6.1 Gas purchase from production companies by distribution companies:

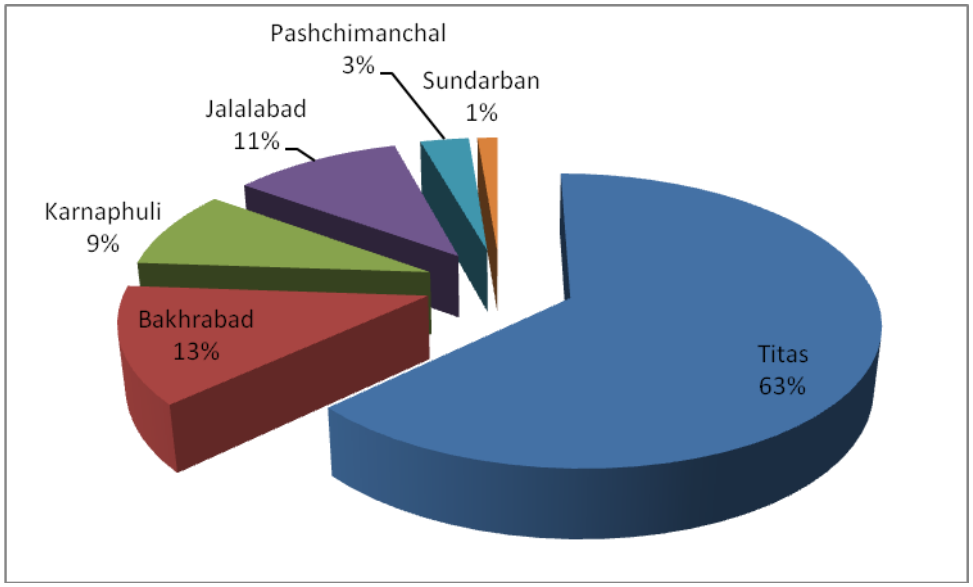
Amount of Gas purchase by different distribution companies from the production companies of Petrobangla & IOCs is shown below:

Table 21 : Amount of Gas Purchase by Distribution companies

Name	Titas	Bakhrabad	Karnaphuli	Jalalabad	Pashchimanchal	Sundarban	Total
MMCM	**17282.68**	3569.92	2432.64	2922.82	845.76	347.48	**27401.3**
BCF	610.25143	126.05388	85.896518	103.20477	29.863786	12.269519	967.5399

Source: Petrobangla MIS Report

Figure 21 : Gas Purchase by Distribution Companies



6.2 Gas distribution in different sectors by distribution companies:

The purchased gas is sold to end-users in variety of sectors (e.g., electricity producing companies, fertilizer companies etc.).

Table 22 : Gas sale by Titas Gas Transmission & Distribution Company Limited (TGTDCL)

Consumer	Electricity		Fertilizer factory		Captive Power		Industries		Commercial	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	72.48	5635.91	17.97	1325.4	0	0	1.85	94.14	0.12747	23.8
Non-Govt. organization	109.87	12045.58	0	0	135.08	31619.77	132.59	25631.41	4.61364	1661.23
Total	**182.34**	**17681.49**	**17.97**	**1325.4**	**135.08**	**31619.48**	**134.44**	**25725.55**	**4.74107**	**1685.03**

Consumer	Brick fields		CNG		Households		Total	
	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)
Govt. organization	0	0	0.2161	51.78	1.38239	609.96	94.02417	7741.00
Non-Govt. organization	0	0	27.70317	22119.75	97.10462	21156.34	506.95662	114234.08
Total	**0**	**0**	**27.91927**	**22171.53**	**98.48701**	**21766.30**	**600.98079**	**121975.08**

Source: Petrobangla MIS Report

Table 23 : Gas sale by Bakhrabad Gas Distribution Company Limited (BGDCL)

Consumer	Electricity		Fertilizer factory		Captive Power		Industries		Commercial	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	75.03975	6158.18	6.16265	452.50	0.00777	3.87	0	0.17	0	0.09
Non-Govt. organization	27.09654	2200.26	1.52257	111.26	3.55713	901.9	2.12178	460.69	1.56494	193.33
Total	**102.13629**	**8358.44**	**7.68522**	**563.76**	**3.5649**	**905.77**	**2.12178**	**460.86**	**1.56494**	**193.42**

Consumer	Brick fields		Households		Tea		CNG		Total	
	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)
Govt. organization	0	0	0.53389	118.8	0	0	0	0	81.74406	6733.52
Non-Govt. organization	0	0	18.47914	4017.15	0	0	6.33108	5065.84	60.67317	13368.33
Total	**0**	**0**	**19.01303**	**4135.95**	**0**	**0**	**6.33108**	**5065.84**	**142.41723**	**20101.85**

Souce: Petrobangla MIS Report

Table 24 : Gas sell by Karnaphuli Gas Distribution Company Ltd. (KGDCL)

Consumer	Electricity		Fertilizer factory		Captive Power		Industries		Commercial	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	18.79022	1551.52	1.62214	121.58	0.95266	234.68	1.59637	321.84	0.00424	0.45
Non-Govt. organization	5.82403	466.12	9.22085	2488.39	13.20488	3442.74	14.47145	3291.24	1.30259	500.59
Total	**24.61425**	**2017.64**	**10.84299**	**2609.97**	**14.15754**	**3677.42**	**16.06782**	**3613.08**	**1.30682**	**501.04**

Consumer	Brick fields		Households		Tea		CNG		Total	
	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)
Govt. organization	0	0	1.17229	266.97	0	0	0.05614	44.30	24.19406	2541.34
Non-Govt. organization	0	0	22.31274	4883.29	0.02083	4.12	5.26931	4212.03	71.27359	19288.52
Total	**0**	**0**	**23.48503**	**5150.26**	**0.02083**	**4.12**	**5.32545**	**4256.33**	**95.46765**	**21829.86**

Source: Petrobangla MIS Report

Table 25 : Gas sell by Jalalabad Gas Transmission and Distribution System Limited (JGTDSL)

Consumer	Electricity		Fertilizer factory		Captive Power		Industries		Commercial	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	49.93576	3344.10	11.43126	781.34	0.31638	61.76	0.38629	59.45	0	0
Non-Govt. organization	11.39842	1691	1.16982	89.8	5.82438	1326.96	8.59375	1576.66	0.78247	253.32
Total	**61.33418**	**5035.1**	**12.60108**	**871.14**	**6.14076**	**1388.72**	**8.98004**	**1636.11**	**0.78247**	**253.32**

Consumer	Brick fields		Households		Tea		CNG		Total	
	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)	Amount (Bcf)	Price (million taka)
Govt. organization	0	0	0.51235	77.35	0	0	0	0	62.58221	4324
Non-Govt. organization	0	0	8.02384	1658.22	0.9516	169.26	4.53532	3337.27	41.29257	10102.49
Total	**0**	**0**	**8.53619**	1735.57	**0.9516**	**169.26**	**4.53532**	**3337.27**	**103.87478**	**14426.49**

Source: Petrobangla MIS Report

Table 26 : Gas sell by Pashchimanchal Gas Company Limited

Consumer	Electricity		Captive Power		Industries		Commercial		CNG		Households		Total	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	18.66239	1530.93	0	0	0.1268	27.37	0.00042	0.25	0	0	0.19855	46.72	18.98795	1605.27
Non-Govt. organization	2.30031	194.36	1.54269	399.94	1.33299	275.35	0.25536	95.73	2.83949	2268.49	4.90756	1091.93	13.17836	4325.8
Total	**20.9627**	**1725.29**	**1.54269**	**399.94**	**1.45979**	**302.72**	**0.25578**	**95.98**	**2.83949**	**2268.49**	**5.10611**	**1138.65**	**32.16631**	**5931.07**

Source: Petrobangla MIS Report

Table 27 : Gas sell by Sundarban Gas Company Limited (SGCL)

Consumer	Electricity		Captive Power		Industries		Commercial		CNG		Households		Total	
	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)	Amount (Bcf)	Price (million Tk)
Govt. organization	12.11649	1006.55	0	0	0.00353	0.67	0	0	0	0	0	0	12.12002	1007.22
Non-Govt. organization	0	0	0	0	0.02436	4.88	0.00357	1.26	0	0	0.12164	26.99	0.14957	33.13
Total	**12.11649**	**1006.55**	**0**	**0**	**0.02789**	**5.55**	**0.00357**	**1.26**	**0**	**0**	**0.12164**	**26.99**	**12.26959**	**1040.35**

Source: Petrobangla MIS Report

7.0 Gas consumption scenario in the FY 2016-17

Natural gas consumed in different sectors for the purpose of end-user usage are summarized below:

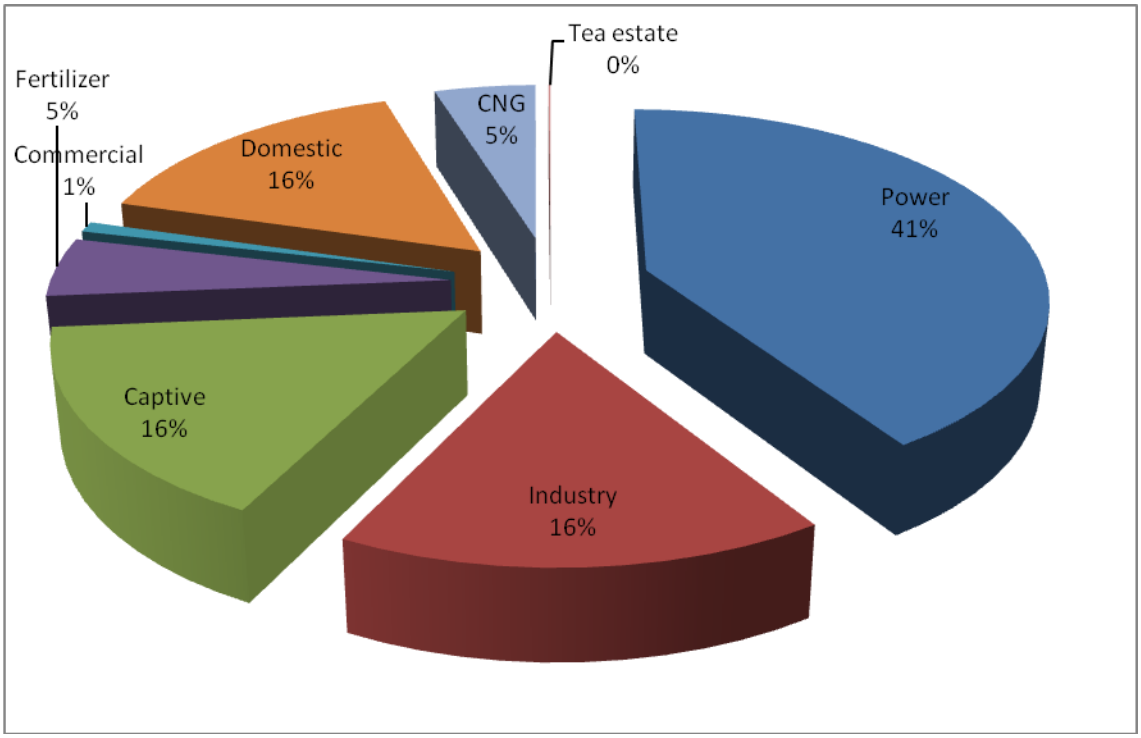
Table 28 : Sector wise Gas Consumption in FY 2016-17

(1CM=35.31CF)

SI No.	Name of Specification	MMCM	Bcf	MMcfd
1.	Power	11427.58	403.51	1105.51
2.	Industry	4619.09	163.10	446.84
3.	Captive	4544.99	160.48	439.67
4.	Fertilizer	1390.5	49.10	134.52
5.	Commercial	245.11	8.65	23.70
6.	Domestic	4372.58	154.40	423.01
7.	CNG	1329.67	46.95	128.63
8.	Tea estate	27.541	0.97	2.66
Total		**27957.05**	**987.16**	**2704.54**

Source: MIS Report, Petrobangla

Figure 22 : Sector wise Gas Consumption

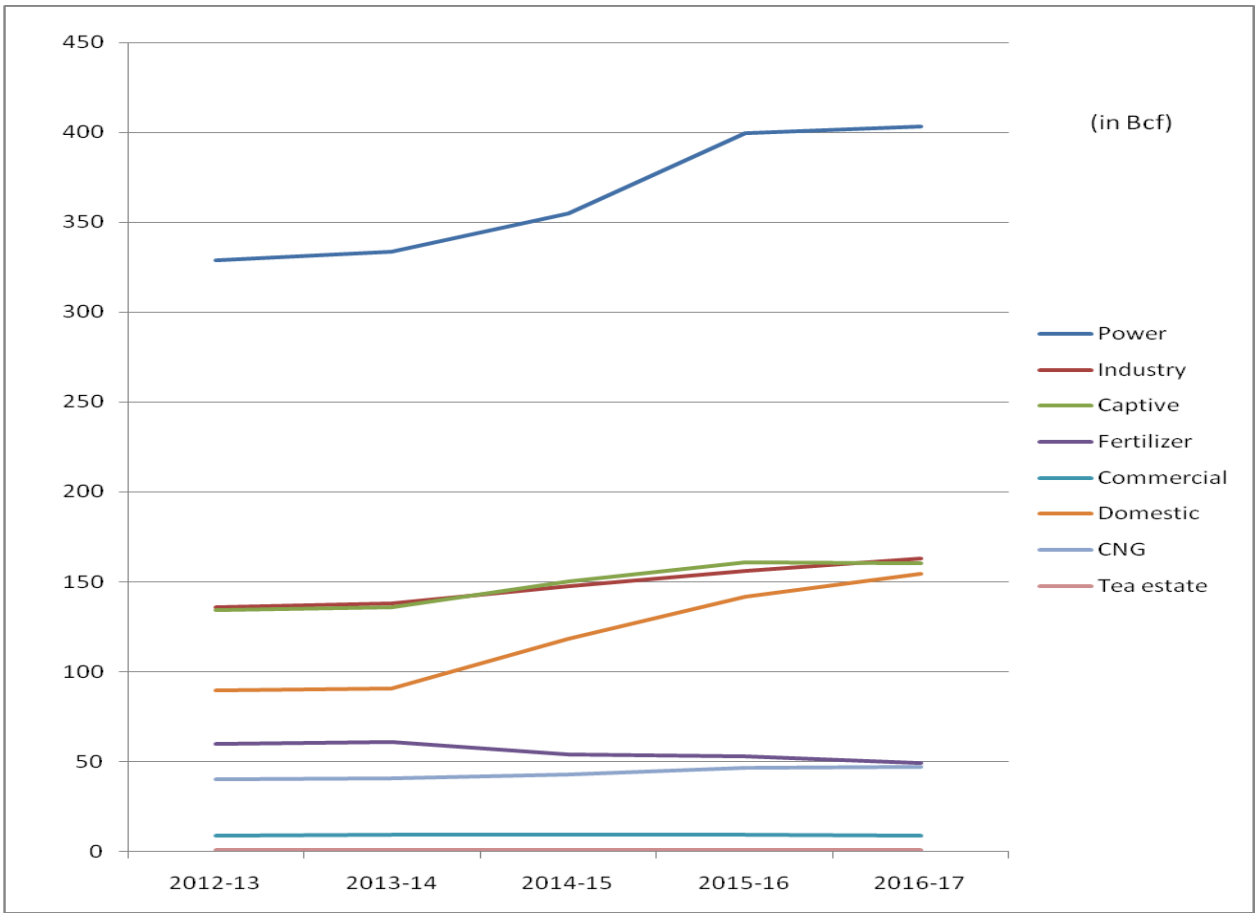


Fiscal Year Wise Gas Consumption Pattern:

Table 29 : Fiscal Year Sector wise Gas Consumption (in Bcf)

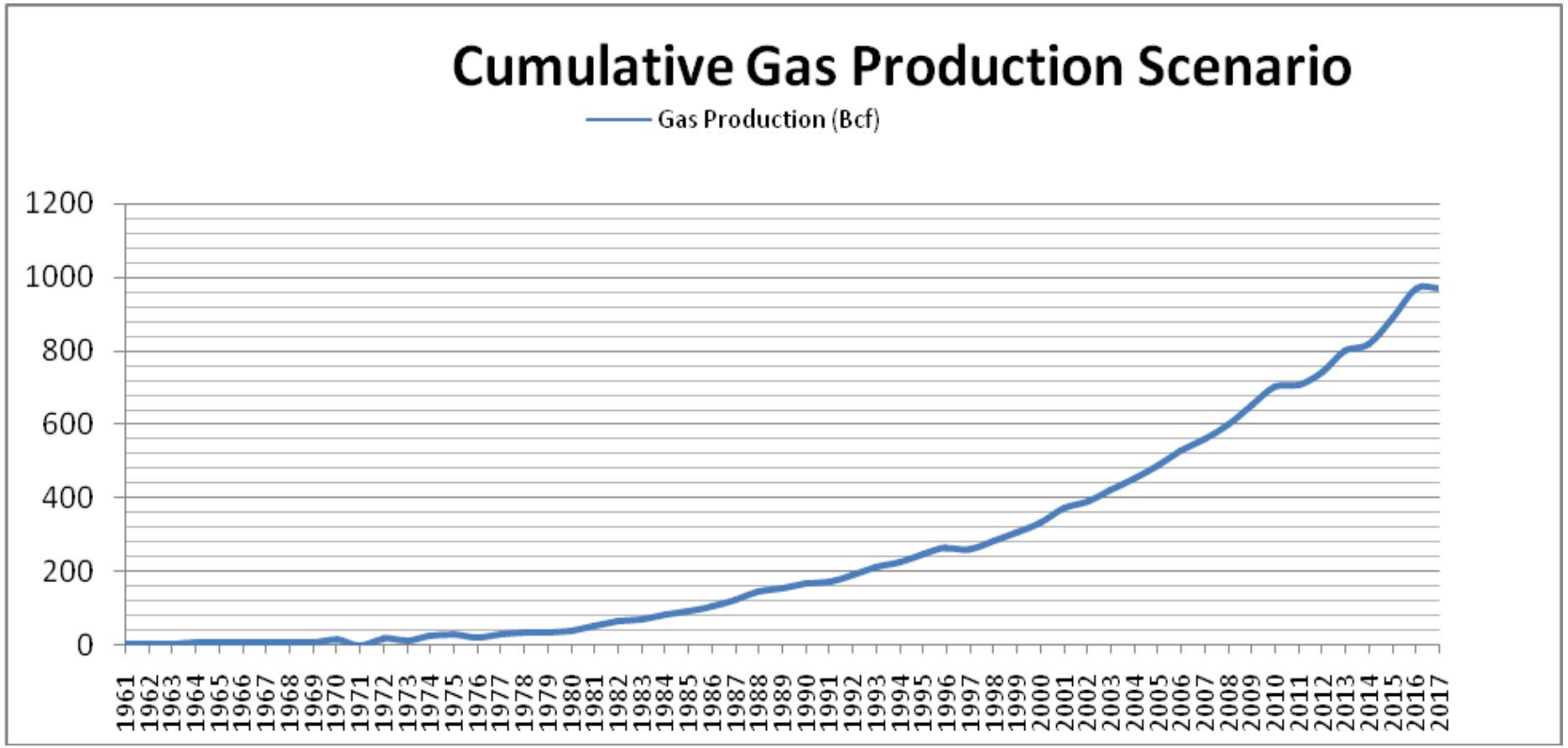
Fiscal Year	Power	Industry	Captive	Fertilizer	Commercial	Domestic	CNG	Tea estate	**Total**
2012-13	328.80	135.72	134.12	59.94	8.80	89.73	40.15	0.79	**798.05**
2013-14	333.37	137.61	135.98	60.78	8.93	90.98	40.70	0.80	**809.15**
2014-15	354.71	147.70	150.02	53.81	9.09	118.17	42.92	0.80	**877.22**
2015-16	399.59	155.98	160.83	52.62	8.98	141.44	46.46	0.91	**966.81**
2016-17	403.51	163.10	160.48	49.10	8.65	154.40	46.95	0.97	**987.16**

Figure23: Fiscal Year Sector wise Gas Consumption



8.0 Cumulative Gas Production Scenario

Figure24 : Gas production from the beginning till now



9.0 Gas production against the demand of Bangladesh From 2009 to 2017

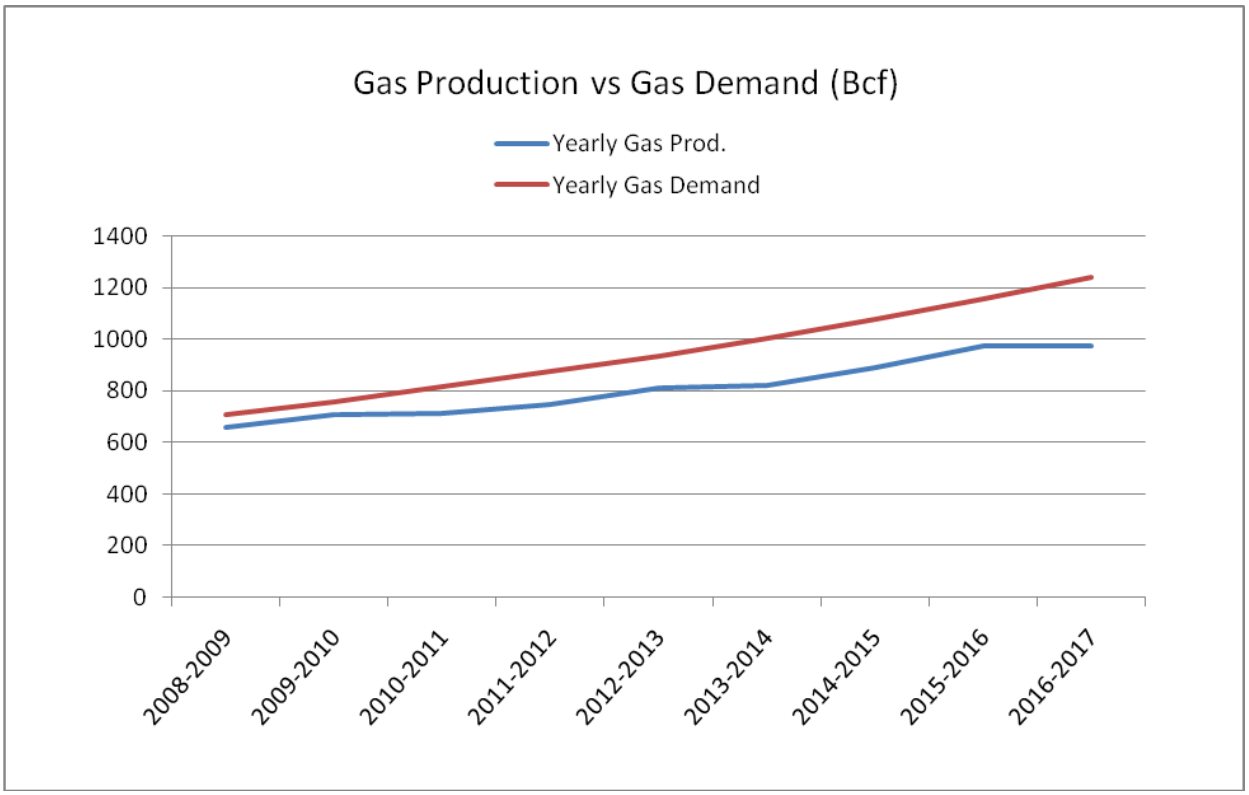
Table 30 : Production vs Demand

Fiscal Year	Yearly Gas Production (Bcf) *	Daily Average Gas Production (MMcfd)*	Yearly Gas Demand (Bcf) **	Daily Average Gas Demand (MMcfd)**
2008-2009	656.63	1799.00	706.28	1935
2009-2010	703.68	1927.90	757.74	2076
2010-2011	708.47	1941.00	813.22	2228
2011-2012	746.42	2045.00	872.72	2391
2012-2013	811.03	2222.00	936.23	2565
2013-2014	820.50	2279.16	1004.5	2752
2014-2015	890.60	2440.00	1077.85	2953
2015-2016	971.54	2661.75	1156.69	3169
2016-2017	972.06	2663.20	1241.00	3400

(*) Source : HCU Data Bank

(**) Source: Report on Future Scenarios for the Bangladesh Petroleum Sector Development, Gustavson, LLC 2011 Bangladesh Gas Demand Forecast Scenarios (Base Case)

Figure 25 : Production vs Demand from 2009-2017

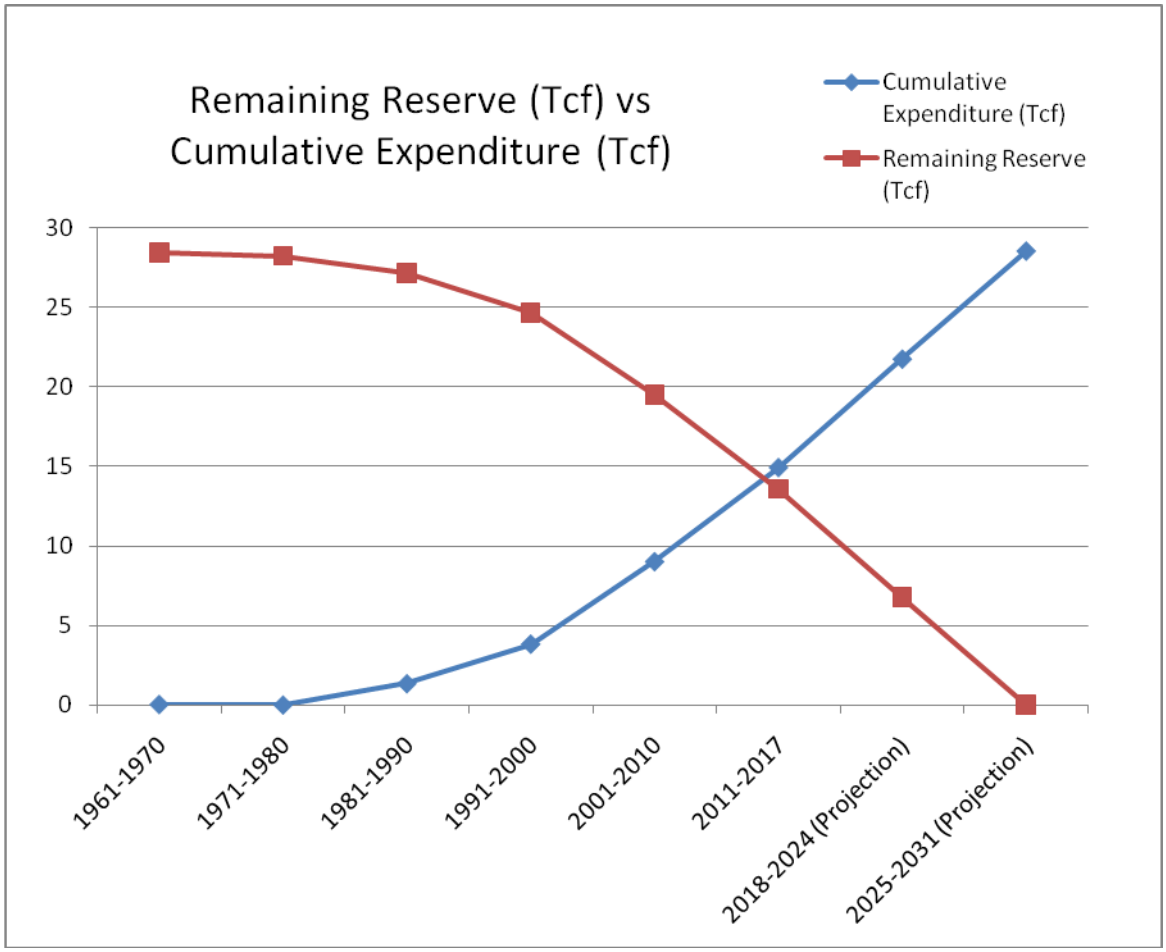


10. Gas remaining reserve against expenditure of Bangladesh from 1961-2031

Table 30: Gas remaining Reserve vs Expenditure

Year	Expenditure (Tcf)	Remaining (Tcf)
Recoverable(Proven+Probable)	0.000	28.52
1961-1970	0.066	28.45
1971-1980	0.235	28.22
1981-1990	1.063	27.16
1991-2000	2.489	24.67
2001-2010	5.175	19.49
2011-2017	5.909	13.58
2018-2024 (Projection)	6.804 (Projection)	6.78
2025-2031 (Projection)	6.779 (Projection)	0.00

Figure 26: Remaining Reserve (Tcf) vs Cumulative Expenditure (Tcf)



আসুন, যানবাহনসমূহকে অটোগ্যাসে রূপান্তর করি...
জাতীয় সম্পদ প্রাকৃতিক গ্যাস সাশ্রয় করি...

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"Energy misused, cannot be excused"

-আমাদের ঘরে যদি এখনো কয়েল স্টার্টার যুক্ত টিউবলাইট থেকে থাকে, আসুন আজই LED টিউবলাইট দ্বারা প্রতিস্থাপন করি।

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১। LPG ব্যবহার করুন..

অবৈধ গ্যাস সংযোগ থেকে বিরত থাকুন

২। CNG নয়, অকটেন দিয়ে গাড়ি চালান...

গাড়ির ইঞ্জিনের আয়ুষ্কাল বাড়ান

চলুন আজই যানবাহনসমূহ AUTO GAS (LPG) এ রূপান্তর করি...

* CNG এর তুলনায় LPG কনভার্শনে ৫০% কম খরচ হয়
* ৩-৫ মিনিটে ট্যাংকে ফুয়েল ভর্তি হয়, লম্বা লাইনে দাঁড়িয়ে অপেক্ষা করার প্রয়োজন পরে না
* CNG এর তুলনায় সিলিন্ডারে জায়গা, ওজন ও প্রেশার কম দরকার
* রক্ষণাবেক্ষণের খরচ কম
* পেট্রোলের তুলনায় AUTO GAS -এ খরচ প্রায় ৫০% কম
* গ্যাসোলিন ও ডিজেলের তুলনায় নিঃসরণ কম

Hydrocarbon Unit

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