



Public Consultation Document

(Ref: No. PNGRB/M(C)/65-Vol-II dated 18.10.2018)

Subject	Final initial unit natural gas pipeline tariff under the provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008.
Entity	GAIL (India) Limited [GAIL]
Pipeline Network	A) HVJ-GREP-DVPL [HVJ] B) DVPL/GREP Upgradation [HVJ Upgradation]
Acceptance of Central Government Authorisation	For HVJ:- Infra/PL/Exis/17/HVJ-GREP-DVPL/GAIL/01/10 dated 19.04.10 For HVJ Upgradation: - Infra/PL/Exis/17/DVPL-GREP-UPGR/GAIL/01/10 dated 14.02.11
Capacity	HVJ: - In terms of PNGRB order no MI/NGPL/GGG/Capacity/GAIL dated 14.11.2012, 53 MMSCMD, from 20.11.2008 to 31.03.2012. Final Capacity from 01.04.2012 onwards is yet to be determined. HVJ Upgradation: - In terms of provisional acceptance of central government authorisation vide no. Infra/PL/Exis/17/DVPL-GREP-UPGR/GAIL/01/10 dated 14.02.11, 54 MMSCMD
As per acceptance of Central Government Authorisation Length	HVJ: - A) HVJ-GREP line 3452 Km, B) Dahej Vijaypur Pipeline including spur lines 770 Km HVJ Upgradation: - 1280 Km as per Authorisation letter dated 14.02.2011
Existing economic life	HVJ: - till 14 th August 2022 HVJ Upgradation: - From 27.03.2010 to 26.03.2035

1. Regulatory Framework

- 1.1. In terms of Section 22 of the Petroleum and Natural Gas Regulatory Board (**PNGRB**) Act, 2006, the Board is entrusted with the responsibility of determining the natural gas pipeline tariff to be charged by the entities laying, building, operating or expanding a natural gas pipeline before the appointed day.
- 1.2. The methodology for determination of pipeline tariff has been specified in the relevant provisions of the PNGRB (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 (hereinafter referred to as “Tariff Regulations”) notified on 20.11.2008. Under the provisions of these regulations, PNGRB is to determine the initial unit natural gas pipeline tariff on a provisional basis first and then finalize the same considering the actual costs and data at the end of the financial year on the basis of audited accounts. The transportation tariff is determined using the Discounted Cash Flow (DCF) method using actual and projected pipeline Capital Expenditure (Capex) and Operating Expenditure (Opex) costs (in line with provisions of Tariff Regulations) over the entire economic life of the pipeline thus arriving at a single levelized transportation tariff. If the length of the pipeline is more than 300 km, the recovery of the transportation tariff is apportioned across such zones of 300 km each resulting in zonal tariff where the zonal tariff of a later zone is higher than that of an earlier zone.

2. Provisional Transportation Tariff Orders

- 2.1. PNGRB issued the provisional initial unit natural gas pipeline tariff (“**provisional tariff**”) for HVJ & HVJ Upgradation vide tariff order no. TO/02/2010 dated 19.04.2010 (“**provisional tariff order**”), which is available on PNGRB’s website.
- 2.2. The provisional transportation tariff as proposed by GAIL and as determined by PNGRB are as follows:
 - 2.2.1. Proposed by GAIL

2.2.1.1.HVJ GREP DVPL + Spurlines upto 50 KM: - Rs.35.39/mmbtu, upto March 2010

2.2.1.2.Tariff for combined system including the DVPL/GREP Upgradation: - Rs.62.12/mmbtu, from April 2010.

2.2.2. Levelized provisional tariff determined by PNGRB: -

(Rs. / MMBTU on GCV basis)

Pipeline System	Levelized provisional tariff determined by PNGRB
HVJ	25.46
HVJ Upgradation	53.65

2.3. PNGRB issued Zonal Tariff Apportionment of provisional tariff for HVJ and HVJ Upgradation pipeline network vide order no. TO/03/2010 dated 09.06.2010. Zone-wise tariff notified by Board for both the networks are as follows:

(Rs. / MMBTU on GCV basis)

Levelized	25.46	53.65
Provisional Zonal Tariff approved by PNGRB		
Zones	HVJ	HVJ Upgradation
Zone 1	19.83	42.46
Zone 2	22.48	48.14
Zone 3	25.10	53.76
Zone 4	27.70	59.32

3. Details of final tariff filing by GAIL

3.1. GAIL vide its letter no. GAIL/RA/HVJ-Upgradation/Final Tariff/352283/2018/2049 dated 17.05.2018, submitted final tariff for HVJ and HVJ Upgradation based on actual financial data upto FY 2016-17. In view of completion of FY 2017-18, PNGRB vide letter no. PNGRB/M(C)/65 dated 19.09.2018 asked GAIL to submit its tariff filing considering actual data upto FY 2017-18.

3.2. In response, GAIL vide its email/letter dated 12.10.2018 submitted the tariff for GAIL's HVJ and HVJ upgradation pipeline (“**integrated network**”) considering the pipelines as integrated (including combined spreadsheet). Subsequently, PNGRB vide email dated 12.10.2018 asked GAIL to submit the separate spreadsheet for both the networks. In response, GAIL vide its email dated 16.10.2018 submitted separate spreadsheet for both the networks i.e. for HVJ and for HVJ Upgradation.

3.3. Salient features of GAIL's tariff filing are as follows:

Particulars	Integrated	HVJ	HVJ Upgradation
Tariff from 20.11.2008 to FY 2018-19 (Rs. mmbtu/GCV)	34.70*	25.46	53.65
Final Tariff as per GAIL (Rs. mmbtu/GCV) w.e.f 01.04.2019 onwards	97.04	175.20	88.09
Economic life considered upto	26-03-35	14-08-22	26-03-35
Number of working days in a year	345	345	345
Annual inflation rate	4.58%	4.58%	4.58%
Capex (including CWIP) (Rs. in Crores) over economic life.	24,708.42	9,399.24#	13,524.18
Opex (Rs. in Crores) over economic life	73,959.93	13,988.98#	36,904.94
Unaccounted gas loss (0.30% of the throughput) (Rs. in Crores) over economic life	5,563.94	1,121.69#	2,642.68
Working Capital (Rs. in Crores) over economic life	960.83	561.73#	457.26
Line pack (Rs. in Crores)	85.18	47.74	37.44
Terminal Value (Capex + Working Capital) at the end of economic life (Rs. in Crores)	7,957.49	6,240.98#	5,578.24

*Weighted Average Tariff

In case of Integrated tariff filing GAIL has considered future Capex, future Opex, Unaccounted gas loss, Working Capital and Terminal Value of HVJ till 26.03.2035, however in standalone filing the same is considered till 14.08.2022.

The entity has submitted copy of audited trial balances for ten Business Areas i.e. Auraiya, Vijaipur, Hazira, Vadodara, Jhabua, Vagodia, Khera, NCR, Kailaras & Agra and Chainsa for the period from 20.11.2008 to FY 2017-18 for HVJ and HVJ

Upgradation Network duly certified by Chartered Accountant and also submitted CA certificate for year wise actual expenses for the period 2008-09 to 2017-18.

4. The various details of final tariff filing submitted by GAIL are as follows:

4.1. Economic Life of Pipeline

GAIL in the tariff filing, has considered economic life of integrated network from 20.11.2008 to 26.03.2035, for HVJ from 20.11.2008 to 14.08.2022 and for HVJ Upgradation from 27.03.2010 to 26.03.2035.

4.2. Capital Expenditure (Capex)

GAIL, in its tariff submission, has considered total Capex outgo of Rs. 24,708.42 Crore (Including CWIP & Corporate Capex, excluding Line Pack) from 30.09.2008 till the end of the economic life of the pipeline in FY 2034-35 for integrated network. Total Capex outgo for HVJ and HVJ Upgradation network during the economic life considered is Rs.9,399.23 Crore and Rs.13,524.18 Crore respectively. The head-wise breakup of total Capex considered are as follows:

(Rs. in Crore)

S No.	Particulars	Integrated	HVJ	HVJ Upgradation
1	Net Fixed Assets (NFA) as on 30.09.2008 [based on 30 years life of pipeline]	4,010.64	4,010.64	
2	CWIP as on 30.09.2008	69.67	52.92	16.75
3	Net Block of Common Corporate Asset allocated as on 30.09.08	29.51	29.51	
4	Actual Capex outgo including CWIP from 01.10.2008 to FY 2017-18	9,636.83	1,971.15	7665.68
5	Common corporate assets allocated from 01.10.08 to FY 17-18	159.30	47.03	112.27
6	Future Capex outgo projections from FY 2018-19 till the end of economic life considered	10,802.47	3,287.98#	5729.49
	Total	24,708.42	9,399.23	13,524.19

In case of Integrated tariff filing GAIL has considered future Capex of HVJ till 26.03.2035, however in standalone filing the same is considered till 14.08.2022.

4.2.1. NFA, CWIP and Net Block of common corporate assets as on 30.09.2008

NFA as on 30.09.2008 as per tariff filing and CA certificates submitted by the entity for Integrated Network, HVJ and HVJ Upgradation Network is as follows:

(Rs. in Crore)				
S No.	Particulars	Integrated	HVJ	HVJ Upgradation
1	Net Fixed Assets (NFA) as on 30.09.2008 based on Re-casted depreciation.	4,010.64	4,010.64	-
2	CWIP as on 30.09.2008	69.67	52.92	16.75
3	Net Block of Common Corporate Asset allocated as on 30.09.08	29.51	29.51	-

4.2.2. Actual Capex (including CWIP) outgo from 01.10.2008 to FY 2017-18

GAIL in its tariff filing, has claimed total actual Capex outgo (including CWIP, excluding Line Pack) of Rs.9,636.83 Crore for integrated network and Rs.1,971.15 Crore and Rs.7,665.68 Crore for HVJ and HVJ Upgradation respectively. GAIL has provided additions in Capex and CWIP with bifurcation of Interest During Construction (IDC). GAIL in tariff filing has considered IDC upto FY 2015-16 and thereafter IDC is not a part of net addition in Capex and CWIP. Year-wise breakup of Capex claimed in tariff filing are as follows:

(Rs. in Crore)

Year	Integrated Network		HVJ Network		HVJ Upgradation Network	
	Capex including IDC	IDC	Capex including IDC	IDC	Capex including IDC	IDC
01.10.08 to 31.03.09	1,696.67	0.00	141.74	0.00	1,554.93	0.00
2009-10	2,146.35	0.00	467.68	0.00	1,678.67	0.00
2010-11	2,869.86	0.00	409.78	0.00	2,460.08	0.00
2011-12	1,162.84	9.47	463.88	3.82	698.96	5.65
2012-13	286.50	7.81	579.50	5.36	-293.00	2.44
2013-14	286.03	39.84	-399.09	7.03	685.11	32.82
2014-15	145.74	5.61	-636.73	4.54	782.47	1.07
2015-16	174.84	10.02	121.90	10.02	52.94	0.00
2016-17	502.12	0.00	269.49	0.00	232.63	0.00
2017-18	365.89	0.00	552.99	0.00	-187.11	0.00
Total	9,636.83	72.75	1,971.15	30.77	7,665.68	41.98

4.2.3. Common Corporate Assets from 01.10.08 to FY 2017-18

4.2.3.1. GAIL in its tariff filing, has claimed common corporate assets of Rs.159.29 Crore from 01.10.08 to FY 2017-18. Year wise common corporate assets allocated to the integrated network are as follows:

(Rs in Crore)

Year	Integrated Network	HVJ	HVJ Upgradation
01-10-08 to 31-03-09	-0.19	-0.19	0.00
2009-2010	10.28	10.28	0.00
2010-2011	-4.38	-4.38	0.00
2011-2012	51.19	39.95	11.24
2012-2013	18.84	11.00	7.84
2013-2014	24.22	11.63	12.59
2014-2015	26.64	11.65	14.99
2015-2016	6.16	-10.28	16.44
2016-2017	6.63	-11.87	18.51
2017-2018	19.89	-10.77	30.66
TOTAL	159.29	47.02	112.27

4.2.3.2. Basis/justification of allocation of Common Corporate Assets and expenses:

During the processing of various tariff order for GAIL's Natural Gas Pipeline Networks, GAIL has inter alia provided following basis for allocation of Common Corporate Assets and Expenses as detailed below:

Corporate common expenses are those expenses which are incurred by the various corporate departments of GAIL (like, Corporate HR, Finance & Accounts, Marketing, Contracts & Procurement, Training etc.) in order to provide day-to-day services to all business segments across GAIL. These expenses are common in nature and are not directly identifiable to any particular business segment. As Corporate Department is providing services to Gas Transmission, Gas Trading, Petrochemical, Liquid Hydrocarbon & other business segments also, therefore, all common expenses & assets are allocated to all business segments.

GAIL is predominantly a gas transmission company, having over 11,000 km of pipelines network for transmission across the length and breadth of the country. Gas Transmission business is one of the major activities of GAIL. As it is known that NGPL business is very capital intensive and it requires much more attention and day-to day supervision in order to transport/handle gas safely across the all pipelines networks up to consumers' premises.

For a capital-intensive company, return is generally linked to the amount of capital employed in the business. Therefore, a business entity having multiple segment of business, should give more weightage to those business segments having a higher capital employed in allocation of any common corporate expense. Considering this, Gross block of various business segments as most appropriate & suitable method of allocation of common corporate Opex and Capex. Accordingly, GAIL has allocated the Corporate Common Opex and

Capex based on the Gross Block of the respective business segment. Further, the same is being consistently followed for the all the financial years since 2008-09 for submission of tariff proposal and this was accepted by PNGRB while issuing final tariff orders of other pipelines in the past.

In case, any basis other than Gross Block is considered, then, same shall not provide correct basis of allocation of corporate common expenses. For example, if revenue generation instead of Gross Block of the respective business is considered, then same shall be inappropriate as it is submitted that revenue from Gas marketing constitutes around 71% of total revenue of GAIL. Moreover, natural gas marketing, comparatively less efforts are required as the price of domestic gas is decided by Government of India, whereas, in transmission segments much more efforts are required considering the length and breadth of the pipelines across India. Further, GAIL has no control over the prices of the various products such as RLNG, Petro Chemicals and LPG which are largely market driven/ based on import parity prices etc and any change in product price needs to substantial change in turnover. Further, gas prices being linked to USD, therefore, any change in exchange rate also leads to a change in turnover. It may also be mentioned that any change in turnover due to market forces as mentioned above does not lead to a corresponding change in corporate common expenses.

Corporate services being common to all business segments, therefore, it is also not possible to identify the directly allocable manpower for allocation of common expenses and hence this also cannot be used as a basis for allocation of expenses.

Capex and Opex allocated to business segment i.e. NG Transmission is then allocated to all the pipelines including dedicated pipelines on the basis of actual throughput in that particular pipeline system in the corresponding previous year.

4.2.4. **Future Capex Outgo from FY 2018-19 onwards till the end of economic life**

GAIL in its tariff filing, has claimed total future Capex outgo of Rs.10,802.47 Crore escalated @ 4.58% per annum (Rs.8,654.90 Crore without escalation) for integrated network and Rs.3287.98 Crore (Rs.2776.50 Crore without escalation) and Rs.5,729.49 Crore (Rs.4,858.40 Crore without escalation) for HVJ and HVJ Upgradation networks respectively, under following heads:

- 4.2.4.1. **Project Development (PD) Capex:** Under this head, entity has claimed Rs.934.72 Crore, (Rs.650.00 Crore without escalation) i.e. @ Rs 50 Crore / year for 9 years from FY 2018-19 to FY 2026-27 and @ Rs 25 Crore / year for 8 years from FY 2027-28 to 2035-36 with annual escalation @ 4.58% from FY 2018-19 onwards, in the tariff filing for future last mile connectivity (LMC). Further, expenditure considered under this head is only w.r.t. HVJ Upgradation network.
- 4.2.4.2. **Project Execution (PE) Capex:** Under this head, GAIL has claimed future capex for integrated network of Rs. 4,106.58 Crore (Rs.3,781.40 Crore without escalation) to be incurred in FY 2018-19 to FY 2021-22. However, the expenditure considered under this head is only w.r.t. HVJ Upgradation network. Various projects under which the expenditure (without escalation) has been claimed are as under:
- a) Vijaipur Auraiya Pipeline project Rs.2,739.00 Crore
 - b) Auraiya Phulpur project Rs.882.00 Crore
 - c) Connectivity to CFCL Rs.75.00 Crore
 - d) Rich lean gas corridor Rs.33.92 Crore
 - e) LMC of Rs 51.48 Crore
- 4.2.4.3. **Operation & Maintenance (O&M) Capex:** Under this head, GAIL has claimed future Capex for integrated network of Rs.5,761.17 Crore (Rs.4,223.50 Crore without escalation), Rs. 3,287.98 Crore (Rs.2,776.50 Crore without escalation), Rs. 688.19 Crore (Rs.427.40 Crore without escalation) for HVJ and HVJ Upgradation networks respectively with escalation @ 4.58 % p.a. from FY 2018-

19 onwards. To support these claims, entity has submitted year wise future Capex projection up to FY 2034-35 under various heads viz., Gas generators Rs 995.00 Crore [without escalation], replacement of GT compressors for Rs 2,100 Crore [without escalation] and in pipelines Rs.1,128.50 Crore [without escalation] which includes expenditure on account of conversion of non piggable line to piggable, insurance spares, modifications for operational requirement, installation of CCTV, new GC's, new metering system, upgradation of field mounted instrument & system software/hardware upgradation, etc.

Year wise and head wise future Capex (with escalation) claimed by GAIL are as follows:

(Rs. in Crore)

Year	Integrated			HVJ	HVJ Upgradation		
	PD	PE	O&M	O&M#	PD	PE	O&M
2018-19	52.29	1,717.66	120.27	104.58	52.29	1,717.66	15.69
2019-20	54.68	1,531.13	371.86	365.30	54.68	1,531.13	6.56
2020-21	57.19	571.89	860.13	844.12	57.19	571.89	16.01
2021-22	59.81	285.89	742.23	724.28	59.81	285.89	17.94
2022-23	62.55	0.00	1,307.25	1,249.71	62.55	0.00	57.54
2023-24	65.41	0.00	105.97	0.00	65.41	0.00	57.56
2024-25	68.41	0.00	112.19	0.00	68.41	0.00	82.09
2025-26	71.54	0.00	105.88	0.00	71.54	0.00	5.72
2026-27	74.82	0.00	216.97	0.00	74.82	0.00	49.38
2027-28	39.12	0.00	203.44	0.00	39.12	0.00	3.13
2028-29	40.91	0.00	147.29	0.00	40.91	0.00	24.55
2029-30	42.79	0.00	229.34	0.00	42.79	0.00	6.85
2030-31	44.75	0.00	96.66	0.00	44.75	0.00	0.00
2031-32	46.80	0.00	144.14	0.00	46.80	0.00	20.59
2032-33	48.94	0.00	321.05	0.00	48.94	0.00	78.31
2033-34	51.18	0.00	188.35	0.00	51.18	0.00	139.22
2034-35	53.53	0.00	488.16	0.00	53.53	0.00	107.05
TOTAL	934.72	4,106.58	5,761.17	3,287.98	934.72	4,106.58	688.19

In case of Integrated tariff filing GAIL has considered future Capex of HVJ till 26.03.2035, however in standalone filing the same is considered till 14.08.2022.

4.3. **Operating Expenses (Opex):**

GAIL in its tariff submission has claimed total Opex of Rs.73,959.93 Crore for integrated network (from 20.11.2008 to 26.03.2035), Rs.13,988.98 Crore for HVJ network (From 20.11.2008 to 14.08.2022) and Rs.36,904.94 Crore for HVJ Upgradation network (from 27.03.2010 to 26.03.2035). Opex claimed by GAIL in its tariff submission for the entire economic life of the pipeline considered are as follows:

(Rs. in Crore)				
S.No.	Particulars	Integrated Network	HVJ	HVJ Upgradation
	Actual Opex			
1	Actual Opex outgo (01.10.08 to FY 17-18)	8,615.23	7,288.45	1,326.79
2	Actual Common Corporate Expenses (1.10.08 to 17-18)	2,063.35	1,553.33	510.02
	Future Opex			
3	Future Opex	29,761.49	3,750.56#	10,024.59
4	PD Future Opex	248.99	0.00	248.99
5	PE Future Opex	2,117.79	0.00	2,117.79
6	Compressor Fuel	18,612.16	0.00	18,612.16
7	Corporate Expenses	6,696.36	592.12#	3,580.40
8	O&M Future Opex	5,844.56	804.52#	484.20
	Total Opex	73,959.93	13,988.98	36,904.94

In case of Integrated tariff filing GAIL has considered future Opex of HVJ till 26.03.2035, however in standalone filing the same is considered till 14.08.2022.

4.3.1. **Actual Opex Outgo from 01.10.2008 to FY 2017-18**

GAIL in its tariff filing, has claimed actual Opex of Rs.8,615.23 Crore and Common Corporate Opex of Rs.2,063.35 Crore from 01.10.2008 to FY 2017-18

considering the network as integrated. Actual Opex considered as Rs.7,288.45 Crore and Common Corporate Opex of Rs.1,553.33 Crore for HVJ network and actual Opex of Rs.1326.79 Crore and Common Corporate Opex of Rs.510.02 Crore for HVJ Upgradation network for the period from 30.09.08 to FY 2017-18 and from 01.04.2010 to FY 2017-18 respectively. Year-wise breakup of Opex claimed in tariff filing are as follows:

(Rs. in Crore)						
Financial Year	Integrated		HVJ		HVJ Upgradation	
	Opex	Common Corporate Opex	Opex	Common Corporate Opex	Opex	Common Corporate Opex
01.10.08 to 31.03.09	389.64	50.49	389.64	50.49	0.00	0.00
2009-10	618.06	175.38	618.06	175.38	0.00	0.00
2010-11	717.11	176.21	706.95	176.21	10.16	0.00
2011-12	835.20	129.96	772.92	116.38	62.28	13.58
2012-13	891.39	275.63	805.40	234.03	85.99	41.60
2013-14	1,061.69	217.82	904.34	172.03	157.35	45.79
2014-15	1,003.86	246.92	824.29	181.94	179.57	64.98
2015-16	990.55	264.74	796.48	173.69	194.06	91.06
2016-17	964.19	268.90	712.00	153.46	252.20	115.44
2017-18	1,143.55	257.30	758.37	119.73	385.18	137.57
Total	8,615.23	2,063.35	7,288.45	1,553.33	1,326.79	510.02

4.3.2. Future Opex projections from FY 2018-19 to 2034-35

GAIL in its tariff filing, has claimed future Opex of Rs.63,281.35 Crore from FY 2018-19 till the end of economic life (26.03.2035) for integrated network, Rs.5,147.20 Crore from FY 2018-19 till the end of economic life (14.08.2022) for HVJ Network, Rs.35,068.13 Crore from FY 2018-19 till the end of economic life (26.03.2035) for HVJ-Upgradation network. Year wise and head wise Opex claimed for integrated and for HVJ and HVJ Upgradation networks are as follows:

A) For Integrated Network**(Rs.in Crore)**

Year	Future Opex	PD	PE	Additional Compressor Fuel	Corporate	Non-recurring O&M future
2018-19	1,195.93	0.00	3.59	747.91	269.08	187.20
2019-20	1,250.70	1.31	17.44	782.16	281.41	164.05
2020-21	1,307.98	2.73	45.88	817.98	294.30	231.05
2021-22	1,367.89	4.29	101.40	855.45	307.78	258.37
2022-23	1,430.54	5.98	113.19	894.63	321.87	222.05
2023-24	1,496.06	7.82	118.37	935.60	336.61	205.40
2024-25	1,564.57	9.81	123.79	978.45	352.03	216.86
2025-26	1,636.23	11.97	129.46	1,023.26	368.15	398.49
2026-27	1,711.17	14.31	135.39	1,070.13	385.01	292.54
2027-28	1,789.54	16.83	141.59	1,119.14	402.65	455.39
2028-29	1,871.50	18.58	148.08	1,170.40	421.09	316.68
2029-30	1,957.22	20.46	154.86	1,224.00	440.38	390.23
2030-31	2,046.86	22.46	161.95	1,280.06	460.55	332.03
2031-32	2,140.61	24.61	169.37	1,338.69	481.64	392.16
2032-33	2,238.65	26.91	177.13	1,400.00	503.70	428.72
2033-34	2,341.18	29.36	185.24	1,464.12	526.77	846.55
2034-35	2,414.86	31.55	191.07	1,510.20	543.35	506.81
TOTAL	29,761.49	248.99	2,117.79	18,612.16	6,696.36	5,844.56

In case of Integrated tariff filing GAIL has considered future Opex of HVJ till 26.03.2035, however in standalone filing the same is considered till 14.08.2022.

B) For HVJ Network: - GAIL has claimed future Opex of Rs.5147.21 Crore.

Year wise and head wise amount claimed in tariff filing are as follows: -

(Rs.in Crore)

Year	Future Opex	Corporate	Non-recurring O&M future
2018-19	793.10	125.21	157.39
2019-20	829.43	130.95	131.24
2020-21	867.41	136.94	196.73
2021-22	907.14	143.21	247.61
2022-23	353.48	55.81	71.55
TOTAL	3,750.56	592.12	804.52

C) For HVJ Upgradation Network: - GAIL has claimed future Opex of Rs.35,068.13 Crore. Year wise and head wise amount claimed in tariff filing are as follows: -

(Rs.in Crore)						
Year	Future Opex	PD	PE	Additional Compressor Fuel	Corporate	Non-recurring O&M future
2018-19	402.83	0.00	3.59	747.91	143.87	29.81
2019-20	421.27	1.31	17.44	782.16	150.46	32.81
2020-21	440.57	2.73	45.88	817.98	157.35	34.31
2021-22	460.75	4.29	101.40	855.45	164.56	10.77
2022-23	481.85	5.98	113.19	894.63	172.10	30.02
2023-24	503.92	7.82	118.37	935.60	179.98	29.44
2024-25	527.00	9.81	123.79	978.45	188.22	30.10
2025-26	551.13	11.97	129.46	1,023.26	196.84	12.88
2026-27	576.38	14.31	135.39	1,070.13	205.86	7.48
2027-28	602.77	16.83	141.59	1,119.14	215.29	66.51
2028-29	630.38	18.58	148.08	1,170.40	225.15	47.46
2029-30	659.25	20.46	154.86	1,224.00	235.46	42.79
2030-31	689.45	22.46	161.95	1,280.06	246.24	0.00
2031-32	721.02	24.61	169.37	1,338.69	257.52	56.16
2032-33	754.05	26.91	177.13	1,400.00	269.32	12.72
2033-34	788.58	29.36	185.24	1,464.12	281.65	40.95
2034-35	813.40	31.55	191.07	1,510.20	290.52	0.00
TOTAL	10,024.59	248.99	2,117.79	18,612.16	3,580.40	484.20

Head wise description of Future Opex claimed by GAIL are as follows:

4.3.2.1. **Future Opex:** GAIL under this head has escalated actual Opex considered during FY 2017-18 @ 4.58% from FY 2018-19 onwards.

4.3.2.2. **PD Opex:** Under this head, GAIL has claimed 2.5% of Future PD Capex as PD Opex with annual escalation @4.58% from FY 2018-19 onwards.

4.3.2.3. **PE Opex:** Under this head, GAIL has claimed 2.5% of Future PE Capex as PE Opex with annual escalation @4.58% from FY 2018-19 onwards.

4.3.2.4. **Additional Compressor Fuel:** Under this head, GAIL has claimed additional compressor fuel on account of additional fuel requirement in HVJ Upgradation network for running 75% of the total capacity from 2018-19 onwards. GAIL has considered total fuel requirement of 1.05 MMSCMD for running HVJ Upgradation at 75% of the capacity. Gas price used for FY 2018-19 for this calculation is \$8.32 MMBTU (Landed Price) with annual escalation at 4.58%.

4.3.2.5. **Corporate Opex:** GAIL under this head has escalated actual Common Corporate Opex considered during FY 2017-18 @ 4.58% from FY 2018-19 onwards.

4.3.2.6. **Non-recurring O&M future:** GAIL has claimed non-recurring O&M Opex (in addition to future Opex considered based on actual data for FY 2017-18) on account of pigging, R&M of pipelines, CP survey, overhauling of plants and Equipment etc.

4.4. **Unaccounted Gas Loss**

GAIL has claimed 0.30% of the volume considered as unaccounted gas loss amounting to Rs.5563.94 Crore for Integrated Network (from 20.11.2008 to 26.03.2035), Rs.1121.68 Crore for HVJ Network (from 20.11.2008 to 14.08.2022), Rs.2642.68 Crore for HVJ-Upgradation Network (from 27.03.2010 to 26.03.2035) during the entire economic life of the pipeline .

4.5. **Volume Divisor**

GAIL in its tariff filing, has considered capacity (for volume divisor) after netting off normative fuel requirement for running compressors. For HVJ 1.22 MMSCMD and for HVJ Upgradation 1.40 MMSCMD has been netted off on normative basis.

GAIL has considered phase wise capacity built up for HVJ Upgradation pipeline as follows: -

Period	Capacity considered (including compressor fuel)
From Commissioning to 04-08-2013	11 MMSCMD
05-08-2013 onwards	54 MMSCMD

Year-wise volume considered by GAIL in its tariff submission after netting off normative fuel for running compressor for HVJ, HVJ Upgradation and for integrated network in MMSCMD are as follows:

Financial Year	HVJ	HVJ Upgradation	Integrated Network
2008-09	47.46	-	47.46
2009-10	53.40	-	53.40
2010-11	42.19	13.12	55.31
2011-12	41.41	15.61	57.02
2012-13	44.73	19.51	64.25
2013-14	42.08	24.37	66.45
2014-15	36.99	27.31	64.29
2015-16	35.25	31.36	66.61
2016-17	38.53	34.76	73.29
2017-18	38.53	37.99	76.52
2018-19 onwards	38.53	39.10	77.63

4.6. Weighted Average Heat Value:

As per Clause 6 of Schedule A of Tariff Regulations, the volume of natural gas determined as per the regulations shall be converted into its energy equivalence in mmbtu terms for the purpose of determination of final initial unit natural gas pipeline tariff by considering the weighted average heat value of natural gas delivered to customers during the initial unit natural gas pipeline tariff period. GAIL, in its tariff submission has submitted weighted average heat value on gross basis. Following is the year wise and network wise and for integrated network, gross calorific value considered in tariff filing.

Year	HVJ	HVJ Upgradation	Integrated
2008-09	9,352.62		9,352.62
2009-10	9,352.62		9,352.62
2010-11	9,334.71	9,334.71	9,334.71
2011-12	9,384.75	9,259.89	9,322.32
2012-13	9,394.23	9,374.47	9,384.35
2013-14	9,387.33	9,432.84	9,410.08
2014-15	9,373.95	9,399.82	9,386.89
2015-16	9,401.96	9,430.76	9,416.36
2016-17	9,331.19	9,364.44	9,347.81
2017-18	9,350.46	9,384.56	9,367.51
2018-19 onwards	9,350.46	9,384.56	9,367.51

4.7. Working Capital

In the tariff filing, GAIL has considered total working capital of Rs.960.83 Crore for integrated network, Rs.561.73 Crore in case of HVJ and Rs.457.26 Crore in case of HVJ Upgradation, calculated as sum of 30 days of Opex and 18 days of Revenue.

4.8. Number of Working Days

GAIL has considered number of working days as under:

- 4.8.1. In case of integrated network, 125 operating days in FY 2008-09, 345 operating days for all years from FY 2009-10 to FY 2033-34 and 340 days for FY 2034-35.
- 4.8.2. In Case of HVJ Network, 125 operating days in FY 2008-09, 345 operating days for all years from FY 2009-10 to FY 2021-22 and 129 days for FY 2021-22.
- 4.8.3. In Case of HVJ Upgradation Network, 5 operating days in FY 2009-10, 345 operating days for all years from FY 2010-11 to FY 2033-34 and 340 days for FY 2034-35.

4.9. Line Pack

Line pack is the value of gas which always remains in the pipeline and as per regulations it is to be considered as cash outflow in the initial year and to be considered in the last year of the economic life of the pipeline. GAIL, in its tariff filing, has considered line pack for integrated network of Rs. 85.18 Crore as cash outflow (Rs.47.74 Crore as line pack for HVJ for 144.35 MMSCM as on 30.09.2008 and Rs.37.44 Crore as line pack for HVJ Upgradation for 38.62 MMSCM as on 31.03.2010).

4.10. Terminal Value

Terminal Value is the sum of the residual value of the NFA, working capital and line pack and is cash inflow at the end of economic life of the pipeline. The terminal value submitted by GAIL in its tariff filing for integrated network is Rs. 7,957.49 Crore as on 26.03.2035. Terminal value submitted in its tariff filing in case of HVJ network is Rs.6,240.98 Crore as on 14.08.2022 and in case of HVJ Upgradation is Rs. 5578.24 crore as on 26.03.2035.

4.11. Return on Capital Employed

As per Clause 2 of Schedule A of the Tariff Regulations, natural gas pipeline tariff shall be calculated based on the DCF methodology after considering the reasonable rate of return (i.e. “twelve percent post-tax” as per clause 3 to Schedule A) to be the projects internal rate of return.

The pre-tax rate of return on capital employed shall be computed by grossing-up twelve percent by the nominal rate of income tax applicable for corporate assesses.

Corporate income tax rate and pre-tax rate of return considered by GAIL in its tariff filing are as under:

Year	FY 08-09 & 09-10	FY 10-11	FY 11-12 & 12-13	FY 13-14 & 14-15	FY 15-16 to 17-18	FY 18-19 onwards
Corporate Income Tax Rate	33.99%	33.22%	32.45%	33.99%	34.61%	34.944%
Pre-Tax Rate of return	18.18%	17.97%	17.76%	18.18%	18.35%	18.45%

4.12. Zonal Apportionment

Since the length of the HVJ and HVJ Upgradation network of GAIL exceeds 300 km, the apportionment of the levelized tariffs is required to be undertaken post finalization of the tariff.

4.13. Views of stakeholders sought

4.13.1 Determination of the final initial unit natural gas pipeline tariff is a time bound exercise. PNGRB solicits the views in writing of stakeholders on GAIL's tariff filing within 15 days of the issue of this document i.e. upto 03.11.2018 at the following address:

Secretary,

Petroleum and Natural Gas Regulatory

Board, 1st Floor, World Trade Centre, Babar

Road, New Delhi 110001.

Email : secretary@pngrb.gov.in

4.13.2 Stakeholders other than GAIL to mark copy of all comments to GAIL at following address:

Cheif General Manager (Mktg.-RA)

GAIL (India) Limited

GAIL Bhawan,

16, Bhikaiji Cama Place,

New Delhi-110066

Email: cragroup@gail.co.in

- 4.13.3 GAIL to submit its response on comments of other stakeholders to PNGRB by 13.11.2018.
- 4.13.4 Open house to discuss the comments of all the stakeholders who have offered their comments shall be held at 11:30 Hrs on 19.11.2018 at PNGRB office as per address mentioned at para 4.13.1 above.

(Vandana Sharma)
Secretary
For and on behalf of the Board