



Public Consultation Document (PCD)

(Ref: No. PNRB/Com/10-NGPL Tariff (9)/2022 (E-4124) dated 23.02.2024)

Subject	Determination of provisional unit natural gas pipeline tariff (“Provisional Tariff”), under the provisions of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 (“NGPL Tariff Regulations”)											
Entity	Indradhanush Gas Grid Limited (“IGGL”)											
Pipeline	North-East Natural Gas Pipeline Grid (“NEGG”)											
Grant of Authorisation	<u>Provisional</u> : Infra/NGPL/143/IGGL/NEGG/01/18 dated 14.9.2018 <u>Final</u> : PNRB/Auth/2-NGPL (04)/2018(P-111) dated 17.11.2020											
Initial Design Capacity of total pipeline	4.75 MMSCMD (including Common Carrier Capacity of 1.19 MMSCMD)											
Authorised Length	<table><tr><th>Breakup of Lines</th><th>Length (Km)</th></tr><tr><td>Mainline</td><td>1453</td></tr><tr><td>Spurline</td><td>33</td></tr><tr><td>Feeder line</td><td>170</td></tr><tr><td>Total</td><td>1656</td></tr></table>		Breakup of Lines	Length (Km)	Mainline	1453	Spurline	33	Feeder line	170	Total	1656
Breakup of Lines	Length (Km)											
Mainline	1453											
Spurline	33											
Feeder line	170											
Total	1656											
Date of commissioning	Pipeline yet to be commissioned. Tentative date of commissioning is 31.3.2024											
Economic life	30 years i.e. up to 31.3.2054 (considering date of commissioning as 1.4.2024)											

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1. Regulatory Framework

- 1.1.** In terms of Section 22 of the Petroleum and Natural Gas Regulatory Board Act, 2006 ("PNGRB Act"), 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 ("NGPL").
- 1.2.** The methodology for determination of NGPL tariff has been specified in the relevant provisions of the PNGRB (Determination of Natural Gas Pipeline Tariff) Regulations, 2008 ("NGPL Tariff Regulations") notified on 20.11.2008. Under the provisions of these regulations, PNGRB is to determine the initial unit NGPL tariff on a provisional basis ("provisional tariff") first and then finalize the same ("final tariff") considering the actual costs and data at the end of the financial year, on the basis of audited accounts. Tariff review of the NGPL is to be done by Board in terms of Clause 2(1)(h) of Tariff Regulations, which inter-alia provides that first tariff review to be done after the end of five consecutive years after the end of the initial unit natural gas pipeline tariff period and the unit natural gas pipeline tariff so determined at the time of any tariff review shall apply for the period upto next tariff review and further the gap between two tariff reviews shall not be less than two consecutive financial years after the end of the financial year in which last tariff fixation occurred.
- 1.3.** The transportation tariff is determined using the Discounted Cash Flow (DCF) method using actual and projected pipeline Capital Expenditure ("Capex") and Operating Expenditure ("Opex") 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 kms, the recovery of the transportation tariff is apportioned across such zones of 300 kms each, resulting in zonal tariff, where the zonal tariff of a later zone is higher than that of an earlier zone.

2. Authorization:

- 2.1.** PNGRB granted the final authorization to IGGL vide letter no. PNGRB/Auth/2-NGPL (04)/2018/(P-111) dated 17.11.2020 under Section 16 and in pursuance of Policy Directives issued to PNGRB by the Ministry of Petroleum & Natural Gas under Section 42 of the PNGRB Act 2006. The provisional capacity and length as per the Final Authorization Letter is 4.75 MMSCMD (including common carrier capacity of 1.19 MMSCMD) and 1656 Km respectively. As per the final authorisation, the entity shall complete laying, building or expansion activities of the natural gas pipeline project within a maximum period of thirty-six months from the date of issue of this final authorisation letter.
- 2.2.** PNGRB vide letter no. [PNGRB/Monitoring/2/NGPL-NEPL/\(1\)/2019 dated 17.10.2023](#), granted approval for extension of completion schedule upto March 2025.

3. Inclusion of Pipeline in determination of Unified Tariff:

IGGL vide letter IGGL/GHY/CEO/2022/178 dated 29.9.2022 informed that 185 km (121 km from Baihata to SV 05 and 64 km from SV-14 to NRL RT) is likely to be

commissioned by December 2022 whereas the entire Guwahati-Numaligarh Pipeline is scheduled for commissioning by Sept 2023 and Gohpur-Itanagar Pipeline is scheduled for commissioning by December 2023. IGGL submitted the financial costs and other data with requested to accept the same for determination of tariff of the North East Gas Grid (NEGG).

Subsequently vide letter IGGL/GHY/MKTG/2023/205 dated 21.3.2023, IGGL submitted that due to some hindrances/ issue, the commissioning is delayed and now the complete Phase-I shall be commissioned by 1.4.2024.

Now, IGGL vide letter IGGL/Mktg/UNIFIED TARIFF/FY23-24/300 dated 10.1.2024 informed that NEGG project is likely to be commissioned by March 2024. They requested that NEGG pipeline be included in the list of natural gas pipelines which are part of the National Gas Grid system for calculation of Unified Tariff in Schedule C of Tariff Regulations.

Further, IGGL vide email dated 13.1.2024 submitted the updated Tariff Model of NEGG Phase-I

Based on queries raised by PNGRB and replies submitted by IGGL, a meeting with officials from IGGL was held on 2.2.2024 at PNGRB office wherein certain issues relating to IDC, compressor power consumption, Transmission loss, etc were further discussed. Based on the discussions during the meeting held on 2.2.2024, IGGL has submitted the revised tariff model.

4. Details of Pipeline Phases for NEGG as per DFR

4.1. Phase wise implementation Schedule as per DFR is as follows:

Phase	Section	Length (km)	Start	End	Duration (Months)
I	i. Guwahati-Numaligarh	421	Oct-18	Sep-22	47
	ii. Branch line to Itanagar				
	iii. Spur line to Numaligarh				
	i. Numaligarh/Dergaon (Jorhat) to Dimapur	147			
	ii. Feeder lines from ONGC fields (5 Nos.)				
	Total Phase-I	568			
II	i. Guwahati- Shillong- Silchar- Panisagar	386	Oct-18	Sep-22	47
	ii. Banaskandi feeder line				
	i. Panisagar to Agartala	231			
	ii. Feeder lines (2 No.)				
	iii. Spur line to NEEPCO				
	Panisagar- Aizawl branch line	111			
	Total Phase-II	728			

Phase	Section	Length (km)	Start	End	Duration (Months)
III	Dimapur- Kohima	80	Oct-18	Oct-22	48
	Kohima- Imphal	150	Oct-18	Nov-23	61
	Siliguri- Gangtok	130	Oct-18	Nov-23	61
	Total Phase-III	360			
	Grand Total	1656			

5. Summary of the Filing for Tariff Determination:

IGGL, vide its communication dated 19.12.2023, 10.1.2024, 13.1.2024 and 6.2.2024 has submitted its tariff filing with provisional tariff of ₹ 160.93/ MMBTU on GCV basis from 1.4.2024 till the end of economic life of pipeline, i.e., upto 31.3.2054 for Phase-I of NEGG comprising of following sections:

- Guwahati-Numaligarh (24" X 386 Km),
- branch line Gohpur-Itanagar (8"x 27 Km), and
- Dergaon (Jorhat) to Dimapur (12" X 128 Km)

The actual data upto FY 2022-23 has been taken for tariff computation and projections have been taken from FY 2023-24 onwards.

The salient features of the tariff filing are as follows:

S. No.	Particulars	Details
1	Economic life (Years)	30 Years
	From	01-Apr-24
	To	31-Mar-54
2	Levelized tariff (₹ MMBTU/GCV) (₹ 166.21 revised to ₹ 160.93 post queries and meeting)	160.93
3	Effective date of tariff implementation	1.4.2024
4	Number of working days in a year	350
5	Annual inflation rate	4.50%
6	Total Capex (₹/crore)	2091.69
	a) Pre commissioning Capex from FY 2020-21 till FY 2023-24 (Net of Viability Gap Funding) (₹/crore)	1455.09
	b) Projected Post commissioning Capex from FY 2024-25 till the end of economic life (Net of Viability Gap Funding) (₹/crore)	636.60
7	Total Opex (₹/crore)	7425.64
	a) Pre commissioning Opex from FY 2020-21 till FY 2023-24 (₹/crore)	0
	b) Projected Post commissioning Opex from FY 2024-25 till end of economic life (₹/crore)	7425.64

S. No.	Particulars	Details
8	Transmission loss during economic life (₹ 586.97 crore revised to ₹ 195.66 crore post queries and meeting) (₹/crore)	195.66
9	Line Pack (₹/crore)	15.14
10	Average working capital during the economic life (₹/crore)	49.88
11	Terminal Value consisting of residual value of NFA of ₹ 836.95 crore, line pack of ₹ 15.14 crore and working capital of ₹ 68.47 crore at the end of the economic life (₹/crore)	920.56
	Levelized Tariff: (₹ MMBTU/GCV)	
	From 1.4.2024 onwards	160.93

5.1. Clarification and Response

1. **Clarification sought by PNGRB:** Provide details of sectors and length of 1st phase of pipeline as per DFR vis-à-vis actual length and sectors. If 5 feeder lines from ONGC are also part of Phase-1 and being commissioned.

IGGL's Response:

Section No	Section Name	Length as per DFR (Km)	Actual Length (Km)	Expected Date of Commissioning	Remarks
1	Guwahati-Numaligarh	386	392	March 2024	- The actual length was changed due to re-routing as per site conditions. - ONGC Feeder Lines shall be considered in Phase-II Tariff Model
2	Gohpur-Itanagar	27	27		
8	Dergaon-Dimapur	128	123		
	Total	541	542		
--	ONGC Feeder Lines	16	16	June 2024	
		557	558		

Only sections-1, 2 & 8 which are being commissioned by March 2024 are considered in the Tariff model. ONGC Feeder Lines shall be considered in the Phase-II Tariff Model.

Note: The length of the pipelines in Tariff model have been considered as per the DFR. However, after commissioning, actual lengths shall be intimated to PNGRB.

2. **Clarification sought by PNGRB:** What is expected date of commissioning of 1st phase of pipeline as on date.

IGGL's Response: The expected commissioning date of 1st phase of pipeline is by 31.3.2024 as on date.

3. **Clarification sought by PNGRB:** What is tentative schedule for rest of the phases of pipeline and its length.

IGGL's Response: The Phase-II sections having a total length of 726 Km is expected to be commissioned by March 2025. The Phase-III sections having a total length of 395 Km are linked with the NH widening of NH-02 & NH-717A and are expected to be completed by March 2025 subject to the availability of NH Right of Way.

6. Details of tariff filing by IGGL:

The various aspects of tariff filing submitted by IGGL are as follows:

6.1. Economic Life of Pipeline

- 6.1.1. Submission Made:** Entity has considered economic life of NEGG as 30 years starting from 1.4.2024 to 31.3.2054. Pre-commissioning period of 4 years i.e. from FY 2020-21 to 2023-24 is considered.
- 6.1.2. Regulatory Provision:** Regulation 2 (1)(e) of NGPL Authorisation Regulations and clause 7 of Schedule A of NGPL Tariff Regulations.

Regulation 2 (1)(e) of NGPL Authorisation Regulations: “economic life” of natural gas pipeline shall be a period of twenty-five years commencing from –

- i. the date of grant of authorization to the entity by the Board in case an entity proposes to lay, build or expand a natural gas pipeline on or after the appointed day;
- ii. the start-up date of the commencement of physical activities of laying, building or expanding the natural gas pipeline in case an entity started up laying, building or expanding a natural gas pipeline before the appointed day and the entity has either an authorization from the Central Government before the appointed day or an authorization from the Board under these regulations:

Provided that at the end of the aforesaid period of twenty-five years extension of the period of economic life may be considered by the Board for a block of ten years at a time depending on the satisfactory compliance of the service obligations under these regulations and on such terms and conditions, as it may deem fit at that point in time.

Clause 7 of Schedule A of NGPL Tariff Regulations: Notwithstanding anything contained in any regulations made under the Act, economic life of the pipeline shall be considered as thirty years from the date of commissioning for the purpose of tariff determination under these regulations. In case, the natural gas pipeline has been authorized for more than thirty years or its authorisation has been subsequently extended beyond thirty years or is in operation beyond thirty years, the DCF model for the tariff computation may be made for the entire period of authorization or operation till the next tariff review, including the extended period.

- 6.1.3. PNGRB's initial view:** *In view of the above, it is proposed to consider the provisional economic life of NEGG from 1.4.2024 to 31.3.2054 for the purpose of determination of*

Provisional Initial Unit Tariff. However, the same shall be trued up while determining Final Initial Unit Tariff based on the actual date of commissioning.

6.2. **Capital Expenditure (Capex)**

- 6.2.1. Submission Made:** The DFR projects a Capex of ₹ 9,265 crore for the entire project. Entity has claimed the total Capex as ₹ 2091.69 crore (excluding IDC) from FY 2020-21 till end of economic life in FY 2053-54.

The pre-commissioning Capex from FY 2020-21 till FY 2023-24 pertains to Line-pipe, Laying, HDD, RoU & Permanent Land, PMC, Mainline materials, Survey Expenses, Compressor Station, Telecommunication System, SCADA & Apps System, PCP System, Commissioning Gas, Owners Management Expenses and Contingency Expenses. The following are the details:

S. No.	Particulars	Amount (₹/crore)
1	Pre-commissioning Capex excluding IDC	3,637.71
2	Less: Viability Gap Funding till 31.3.2024 @ 60% of ₹ 3,637.71 crore	(-) 2,182.62
	Net Pre-commissioning Capex outflow (A)	1,455.09
3	Projected Capex post commissioning* excluding IDC (Claimed from FY 2029-30 @ 0.5% / 1% on Capex excluding IDC i.e. ₹ 3637.71 crore)	636.60
4	Less: Viability Gap Funding after 31.3.2024	-
	Post commissioning Capex outflow (B)*	636.60
	Total Capex outflow claimed by entity net of viability gap funding (A) + (B)	2,091.69

*Claimed as % of Capex till 31.3.2024 ₹ 3,637.71 crore @ 0.5% p.a. of for 15 years upto 31.3.2043 and @1% p.a. for 10 years upto 31.3.2054.

- 6.2.2.** Entity submitted that NEGG Capex for 1,661 km of pipeline is ₹ 9,265 crore (till commissioning). Based on pro-rata Km-inch of the pipeline network, total Capex for Phase-I in Tariff submission is given below:

Particulars	Unit	Details
Pipeline Length (Section 1, 2 & 8)	Km	541
NEGG Pipeline Network	Km	1,661
Pipeline Length (Section 1, 2 & 8)	Inch Km	11,016
NEGG Pipeline Network	Inch Km	26,248
Approved Project Cost	₹/crore	9,265
Capex as per DFR (Section 1,2 & 8)	₹/crore	3,888

6.2.3. Viability Gap Funding: Viability Gap funding to the tune of 60% of Capex for Phase-I till commissioning i.e. 60% of ₹ 3637.71 crore i.e. ₹ 2182.62 crore (excluding IDC) is received/ to be received from MoP&NG.

6.2.4. Future Capex: Entity has also claimed ₹ 636.60 crore (from FY 2029.-30 till end of economic life towards operational Capex. It is calculated as a % of pre commissioning Capex ₹ 3,637.71 crore @ 0.5% p.a. from FY 2029-30 upto FY 2043-44 and @ 1% p.a. thereafter till end of economic life.

6.2.5. Actual Capex: Actual Capex has been submitted upto December 2023 and projection for 3 months upto 31.3.2024 as follows:

Period	Amount as per tariff filing (₹/crore)
Upto 2020-21	311.85
For 2021-22	1133.08
For FY 2022-23	727.06
1.4.2023 to 31.12.2023	334.86
Projected 1.1.2024 to 31.3.2024	1130.86
TOTAL	3637.71

6.2.6. Clarification sought and response received:

- 1) Clarification sought by PNGRB:** The Project Capex of ₹ 9,265 crore has been allocated basis the proportionate inch km of pipeline. The inch used is as follows:

Section Name	Inch used in tariff model	Inch as per authorisation
Guwahati- Numaligarh	24	24
Gohpur Itanagar	8	12
Dergaon-Dimapur	12	12

Kindly explain the variation in authorized dia of pipeline for Gohpur Itanagar section submitted in tariff model from the authorized dia.

IGGL's Response: As per DFR, the dia for Gohpur section was 12 inch. However, in the 16th Board meeting held on 10.7.2020, it was recommended to change the dia from 12 inch to 8 inch of the said line because of terrain conditions and volume demand. The same has been intimated to PNGRB vide letter dated 24.1.2024.

- 2) Clarification sought by PNGRB:** In the tariff model, ₹ 3663 crore (including IDC) has been taken as Capex whereas the assumptions show that Capex pertaining to Phase-I is ₹ 3888 crore (including IDC). Kindly reconcile the two amounts and also give the basis

and detailed working for taking ₹ 3663 crore as Capex. Documents in support of ₹ 3663 crore to be given.

IGGL's Response: Capex of ₹ 3663 crore has been considered in the tariff model after detailed work out of DFR components, however ₹ 3,888 crore was worked out as a ballpark figure based on pro rata volume for maximum capping. However, actual Capex shall be intimated to PNGRB after commissioning of Phase-1 and capitalization of the same.

- 3) **Clarification sought by PNGRB:** IDC is not to be taken as part of Capex, but IGGL has considered IDC (₹ 25.51 crore) as part of Capex.

IGGL's Response: IDC is not considered in project IRR but IGGL has considered IDC in Capex as VGF is also allowed on IDC. However, as advised, IDC is excluded from Capex and the revised model is submitted.

- 4) **Clarification sought by PNGRB:** Provision for contingencies to the tune of 5% was kept in the cost estimates to take care of the unforeseen aspects of the estimate. Since the actual costs have been captured, there does not seem to be convincing reasons to still claim contingencies to the tune of 5% especially when 30% mark up on services for socio-economic factor has been done.

IGGL's Response: Contingency provisions are kept in DFR to take care of unforeseen future deviations with respect to prices and quantities. In the case of IGGL, Contingencies @ 5% are considered in the Tariff Model as per DFR. Moreover, contingencies provisions have also been re-appropriated to Owners Management Expenses (OME) during the execution of the project as and when required. Actual utilization of contingency provisions shall be intimated to PNGRB after the closure of the project.

- 5) **Clarification sought by PNGRB:** The owner management expenses @ 3.5% has been taken in tariff model. The basis for taking the same may be provided

IGGL's Response: Owner management expenses taken on pro rata basis in line with DFR provisions.

- 6) **Clarification sought by PNGRB:** The basis of estimation of commissioning gas volume may be provided

Response – As provided by EPMC contractor for the NEGG project based on DFR

- 6.2.7. **PNGRB's initial view:** As future Capex of ₹ 636.60 crore claimed by entity is just an estimation based on %age of pre commissioning Capex ₹ 3,637.71 crore @ 0.5% p.a. from FY 2029-30 upto FY 2043-44 and @ 1% p.a. thereafter till end of economic life, which is without any detailing and supporting documents, it is proposed not to consider the same. However, the same shall be considered based on the actuals in terms of the extant regulatory framework.

6.3. **Operating Expenses (“Opex”)**

- 6.3.1. Submission Made:** Entity has claimed Opex of ₹ 7,444.70 crore (revised to ₹ 7,425.64 crore) from FY 2024-25 till end of economic life. It comprises compressor related Opex ₹ 1,995.51 crore (revised to ₹ 2,018.84 crore) and other operational Opex ₹ 5,449.19 crore (revised to ₹ 5,406.80 crore). The break-up of Opex claimed in the pre-revised tariff model for FY 2024-25 is as follows:

	Particulars	Amount (₹/crore)	Remarks
A	Compressor related Expenses		
1	Electricity Expenses	20.95	Computed @ 5.24% of compressor Capex as on 31.3.2024
2	Other Expenses	11.76	Computed @ 2.94% of compressor Capex as on 31.3.2024
	Total A(1+2)	32.71	
B	Other Operational Expenses for Pipelines	85.25	@ 2.5% of Capex other than compressor Capex as on 31.3.2024
	Total A+B	117.96	

- 6.3.2. Compressor related Expense:** Entity has claimed ₹ 1,995.51 crore Compressor related Expense from FY 2024-25 till end of economic life. For FY 2024-25, entity has assumed compressor related expense ₹ 32.71 crore computed as 8.18% of ₹ 400.11 crore i.e. 8.18% of the compressor Capex as on date of commissioning. 8.18% includes 5.24% towards electricity expenses and 2.94% towards other expenses of compressor station. From FY 2025-26 onwards, Opex for FY 2024-25 has been escalated @ 4.5% p.a.

Other operational Opex: Entity has claimed other Opex of ₹ 5449.19 crore from commissioning till end of economic life. For FY 2024-25, Opex is claimed @ 2.5% p.a. of pre-commissioning Capex other than compressor Capex of ₹ 3263.11 (Total Capex ₹ 3663.22 crore less compressor Capex ₹ 400.11 crore). For years after 2024-25, Opex of FY 2024-25 has been escalated @ 4.5% p.a.

- 6.3.3. Regulatory Provision:** In terms of clause 5 of Schedule A of NGPL Tariff Regulations, 2008, Operating costs required in the operation and maintenance of the natural gas pipeline over its economic life shall be computed on an actual basis or based on a normative assessment by the Board, whichever is lower.

- 6.3.4. Clarification sought and response received:**

1) Clarification sought by PNGRB: Electricity and other compressor related costs for compressors station are taken at 8.18% of Capex of Compressor (*Opex ₹ 32.71 crore, compressor cost ₹ 400.13 crore*). Basis of such assumption may be given.

IGGL’s Response: The considerations of assumption for 8.18% is enclosed (*details as given below*):

Sr. No.	Item	Annual Cost (₹)	Remarks
A	VARIABLE COSTS		
	Power for compressor	20,95,00,000	Note-1
B	FIXED COSTS		
1	Manpower	5,75,80,000	Note-2
2	Repair & Maintenance (Compressor, 3% of Asset value)	4,80,12,000	
3	Insurance 0.25%	40,01,000	
4	Overheads/ General Administration 0.5% of Capex	80,02,000	
	Sub-Total (B)	11,75,95,000	
	Total (A+B)	32,70,95,000	

Notes:

- Power for compressor
 - As submitted by PMC, the Estimated Annual Energy (3 nos 1500 kW compressors running at a time with 20 hours in a day and 350 days in a year) shall be 20.95 Million kWh.
 - Commercial rate for electricity including fixed charge is ₹ 10 per unit.
 - 20% of total NEGG manpower will be engaged in Compressor Station
- 2) **Clarification sought by PNGRB:** Annual Operating costs for compressor station has been taken at 100% capacity utilization. Since 100% capacity utilization would take place during later years, prorated or estimated expense based on capacity utilization needs to be taken when capacity utilization is less.

IGGL's Response: Phase wise utilization of compressor based on the flow rate in the pipeline power consumption has been re-casted and provided as under and accordingly the tariff model has been revised:

Sl. No.	Year	Flow (MMSCMD)	Variable Cost		Amount (₹/crore)	Fixed Cost (₹/crore)	Total Opex for Compressor station (₹)
			Annual Energy Consumption (Million Units)	Rate per unit (₹)			
1	Mar-25	0.89	6.84707	10.00	6.85	11.76	18.61
2	Mar-26	1.03	7.92413	10.45	8.28	12.29	20.57
3	Mar-27	2.2	16.92533	10.92	18.48	12.84	31.32
4	Mar-28	2.4	18.46400	11.41	21.07	13.42	34.49
5	Mar-29	2.52	19.38720	11.92	23.11	14.02	37.13
6	Mar-30	2.52	19.38720	12.46	24.16	14.65	38.81
7	Mar-31	2.52	19.38720	13.02	25.24	15.31	40.56
8	Mar-32	2.52	19.38720	13.61	26.39	16.00	42.39
9	Mar-33	2.52	19.38720	14.22	27.57	16.72	44.29
10	Mar-34	2.65	20.38733	14.86	30.30	17.48	47.77

11	Mar-35	2.65	20.38733	15.53	31.66	18.26	49.92
12	Mar-36	2.65	20.38733	16.23	33.09	19.08	52.17
13	Mar-37	2.65	20.38733	16.96	34.58	19.94	54.52
14	Mar-38	2.65	20.38733	17.72	36.13	20.84	56.97
15	Mar-39	2.78	21.38747	18.52	39.61	21.78	61.39
16	Mar-40	2.78	21.38747	19.35	41.38	22.76	64.14
17	Mar-41	2.78	21.38747	20.22	43.25	23.78	67.03
18	Mar-42	2.78	21.38747	21.13	45.19	24.85	70.04
19	Mar-43	2.78	21.38747	22.08	47.22	25.97	73.19
20	Mar-44	2.92	22.46453	23.07	51.83	27.14	78.96
21	Mar-45	2.92	22.46453	24.11	54.16	28.36	82.52
22	Mar-46	2.92	22.46453	25.19	56.59	29.64	86.22
23	Mar-47	2.92	22.46453	26.32	59.13	30.97	90.10
24	Mar-48	2.92	22.46453	27.50	61.78	32.36	94.14
25	Mar-49	3.06	23.54160	28.74	67.66	33.82	101.48
26	Mar-50	3.06	23.54160	30.03	70.70	35.34	106.04
27	Mar-51	3.06	23.54160	31.38	73.87	36.93	110.81
28	Mar-52	3.06	23.54160	32.79	77.19	38.59	115.79
29	Mar-53	3.06	23.54160	34.27	80.68	40.33	121.01
30	Mar-54	3.06	23.54160	35.81	84.30	42.15	126.45
					1,301.42	717.41	2,018.84

6.3.5. PNGRB's initial view:

Inflation Rate: The regulation provides for the substitution of the projections made over economic life of the pipeline with the actual Capex/ Opex on a prospective basis at the time of periodic tariff review. By substituting the provisional figures with the actuals, the entity is not put to any advantage/ disadvantage over the economic life of the project. In effect, even if the adjustments are on a prospective basis considering the economic life of the project, the entity is still getting the benefit of prospective adjustments of the variations on account of the actual performance with respect to the Opex compared to the normative parameters identified under the NGPL Tariff Regulations.

In view of the above and to maintain consistency and uniformity, PNGRB has been following a uniform basis for estimating the annual Opex inflation at 4.50% and the same has been taken by the entity in tariff computation which may be considered by PNGRB. Also, tariff not recovered on transmission loss (LUAG) would also be considered as part of Opex.

6.4. Transmission Loss

- 6.4.1. Submission Made:** Entity has considered transmission loss of ₹ 586.97 crore from FY 2024-25 onwards till end of economic life. It is computed as 0.30% of the actual volume. (Refer section 6.6 for actual volume)

The gas price considered for FY 2024-25 for computation of transmission loss is \$10.98/MMBTU calculated as follows:

S. No.	Particulars	Unit	Amount	Remarks
1	Domestic Gas Price including Premium of \$2	\$/MMBTU	8.50	Gas price \$6.50 from Dirok plus \$2 per MMBTU Premium of Source
2	Exchange Rate	₹/ \$	82.79	The exchange rate considered by IGGL for FY 2023-24 is ₹ 82.79/\$ with an annual escalation at 4.26% based on 10 year CAGR of INR/USD.
3	Gas Price (3) = (1) * (2)	₹/ MMBTU	703.72	
4	Transportation cost : DNPL Tariff	₹/ MMBTU	92.09	Gas will be sourced from DNP Limited pipeline whose tariff for FY 2024-25 has been considered @ ₹.92.09/MMBTU and it has been escalated annually @ 3% from FY 2025-26 onwards till end of economic life
5	VAT @ 14.5% on Gas Price	₹/ MMBTU	102.04	VAT @ 14.5% of gas price is considered
6	GST @ 12% on Trans.	₹/ MMBTU	11.05	GST @ 12% is added on the transmission cost
7	Final Gas Cost for Calculation (3) + (4) + (5) + (6)	₹/ MMBTU	908.89	
	Final Gas Cost for Calculation	\$/ MMBTU	10.98	

6.4.2. Regulatory Provision: Sub-clause (2)(d) of Clause 5 of schedule A of NGPL Tariff Regulations-

“Transmission loss @ 0.1% of the actual volume, multiplied by the gas price plus applicable transmission charges.

Provided that for the future years, likely future volumes of the pipeline shall be considered for calculating the transmission loss.

Provided further that the gas price used for calculation of transmission loss shall be the gas price ceiling issued by Petroleum Planning & Analysis Cell in accordance with Ministry of Petroleum and Natural Gas, Govt of India, Notification No.O-22013/27/2012-ONG-D-

V (Vol-II) dated 21.03.2016 for marketing including pricing freedom for gas being produced from discoveries in Deepwater, Ultra Deepwater and High Pressure-High Temperature areas or actual gas price, whichever is lower for the respective period.”

6.4.3. Clarification sought and response received:

- 1) **Query Sought by PNGRB:** Transmission Loss @ 0.3% has been taken in the model whereas NGPL Tariff regulations stipulate Transmission loss of 0.1%. The same may be corrected.

IGGL’s response: Transmission loss @ 0.1% has already been considered in the actual tariff model, however, in the assumption sheet inadvertently it is considered as 0.3%. Now its corrected to 0.1% as per PNGRB guidelines. There is no impact on the tariff due to this change in transmission loss. (It was a typographical error).

- 2) **Query Sought by PNGRB:** IGGL while calculating the Transmission loss, Line Pack and Commissioning gas has considered a gas cost after adding US\$2/MMBTU as premium in gas price. IGGL is requested to provide the rationale of the same.

IGGL’s response: As per information obtained from multiple gas sources, premium rates vary between US\$1-\$2/MMBTU. Premium is considered as US\$2/MMBTU for calculation of line pack, commissioning gas and transmission loss as per information received from upstream operator (Dirok HOEC) which is considered as a possible source for line pack and commissioning gas. Letter submitted by HOEC to IGGL mentioning gas price and premium is attached for your reference.

- 3) **Further Query Sought by PNGRB:** As per regulations, transmission loss @ 0.1% of the actual volumes is allowed, but IGGL has considered @0.3%.

IGGL Response: Transmission loss was considered in the tariff model in line with the prevailing industry practice @0.3%. However, as advised, 0.1% is considered and the revised tariff model is submitted.

As per revised tariff model, the Transmission loss @0.1% has been worked out as ₹ 195.66 crore

6.4.4. PNGRB’s initial view:

With reference to the Gas Price, the historical prices of HP – HT gas prices declared by PPAC, PNGRB observed that past years average (from 1.4.2016 to 31.03.2024), as per available data on PPAC website, works out as \$ 7.49/MMBTU. It is proposed to consider the past years averages of HP- HT price i.e. US\$ 7.49/MMBTU for calculation of transmission loss. Transmission loss Volume shall be taken as 0.1% of the actual volume. With reference to the exchange rate, the latest exchange rate as per data available on the RBI web site may be taken. However, no escalation may be provided on the same. The same will be trued up based on actual data and extant regulatory provision in future tariff reviews.

6.5. Line Pack

Submission made: Entity has considered line pack cost of ₹ 15.14 crore in FY 2024-25 on a volume of 3.8212 MMSCM based on MECON PMC data at Max pressure 35 Kg/Cm2. The gas price considered for line pack is \$10.98/ MMBTU as explained in section 6.4.1 above.

6.5.1. **Regulatory Provision:**

As per clause 6 of Attachment 2 to Schedule A of NGPL Tariff Regulations, Line pack is the value of gas which always remains in the pipeline and it is considered as cash outflow in the initial year and to be considered as cash inflow in the last year of the economic life of the pipeline.

“(6) Treatment of line-pack volume in natural gas pipeline shall be as per the procedure indicated below: -

- (a) Assessment of the volume of natural gas required as line pack in the natural gas pipeline as and when commissioned shall as be specified in the relevant regulations for the technical standards and specifications, including safety standards.
- (b) The line-pack value of natural gas in natural gas pipeline and included in the total capital employed for determination of the unit natural gas pipeline tariff shall be considered as a non-depreciating fixed asset and the value to remain fixed over the economic life of the project.
- (c) The value of the line-pack volume shall be derived by multiplying the volume of line-pack by the average cost of natural gas at the point on injection of natural gas into the natural gas pipeline at the time of commissioning of the natural gas pipeline.
- (d) The salvage value of the line-pack volume at the end of the economic life of the project shall be equal to its value assessed at the time of its capitalization specified under sub-clause (b) and shall be considered as a project inflow.

6.5.2. **Clarification sought and response received:**

Clarification sought by PNGRB: - The basis of line pack and commissioning gas may be shared in detail.

IGGL’s Response: The details of line pack and Commissioning gas are based on the communication from MECON PMC of IGGL.

6.6. Volume Divisor

6.6.1. Submission Made: The details of section-wise pipeline diameter, design capacity as per DFR is as under:

Section	Diameter (inch)	Design Capacity (MMSCMD)
Guwahati-Gohpur-Numaligarh section (GNPL)	24”	3.75
Numaligarh-Dimapur-Kohima-Imphal (NDKIPL)	12”	0.15

Gohpur-Itanagar (GIPL)	12"	0.04
Guwahati – Shillong – Silchar - Panisagar section	18"	0.91
Panisagar-Agartala	12"	0.22
Panisagar-Aizawl	12"	0.06
Siliguri – Gangtok section (Tap-off from BGPL)	12"	0.07

For expected volume, entity has considered Gas transmission agreements for more than a year. For normative volume, entity has considered capacity of 3.94 MMSCMD which includes 3.75 MMSCMD for GNPL, 0.04 MMSCMD for GIPL, proportionate capacity for DDPL (Part of NDKIPL) based on 0.15 MMSCMD capacity in DFR for NDKIPL.

Year-wise estimated volume, normative volume and volume divisor considered by IGGL in its tariff submission as per amendment in NGPL tariff regulation dated 18.11.2022 are as follows:

In MMSCMD

Financial Year	Actual estimated volume	Normative Volume (75% of capacity with ramp up)	Volume divisor
2024-25	0.19	0.89	0.89
2025-26	0.50	1.03	1.03
2026-27	2.20	1.18	2.20
2027-28	2.40	1.33	2.40
2028-29	2.52	1.48	2.52
2029-30	2.52	1.77	2.52
2030-31	2.52	2.07	2.52
2031-32	2.52	2.36	2.52
2032-33	2.52	2.66	2.52
2033-34	2.65	2.96	2.65
2035-2038	2.65	2.96	2.65
2038-39 to 2042-43	2.78	2.96	2.78
2043-44 to 2047-48	2.92	2.96	2.92
2048-49 to 2053-54	3.06	2.96	3.06

6.6.2. Regulatory Provision: Sub-clause (1) of clause 6 of Schedule A of NGPL Tariff Regulations, as amended on 18.11.2022 states that:

“(1) The volumes of natural gas to be considered as divisor in the determination of the unit natural gas pipeline tariff over the economic life of the project shall be computed on a normative or actual basis, whichever is higher.

Provided that in case of future years, PNGRB shall consider the volumes taking into account various factors including normative, actual volume flow in the latest financial year for which actual data has been considered and likely future volumes.

Volume on normative basis shall be calculated as indicated below: -

- (a) The divisor for each phase of natural gas pipeline for the first ten years of its operations or any subsequent expansion in the capacity (other than expansion to which clause 6 (1) (c) is applicable) shall be arrived by multiplying the applicable percentage utilization for the year, as per the basis indicated below, with seventy-five per cent of the capacity of each phase of natural gas pipeline or of natural gas pipeline or each expansion of capacity, as the case may be:

Year of natural gas pipeline operations	Percentage utilization
First	30%
Second	35%
Third	40%
Fourth	45%
Fifth	50%
Sixth	60%
Seventh	70%
Eighth	80%
Ninth	90%
Tenth and onwards	100%

- (b) The divisor for the eleventh and the subsequent years of operation of the natural gas pipeline or for each expansion (other than expansion to which clause 6 (1) (d) is applicable) in capacity of natural gas pipeline (including integrated natural gas pipeline) shall be equal to the seventy-five per cent of the capacity of natural gas pipeline or actual volumes (including ship or pay volumes), whichever is higher.
- (c) Notwithstanding anything contained in any other regulations, in case of addition of any new natural gas source to a natural gas pipeline which comes anytime from 01.04.2020 and onwards, any increase in the capacity of the pipeline, if any, because of such addition of such new source shall not be considered in the tariff determination for a period of five years from the date of commissioning of the pipeline connectivity due to the relevant source.
- (d) It is clarified that any new injection point on a common carrier or contract carrier natural gas pipeline due to interconnection from another common carrier or contract carrier natural gas pipeline shall not be considered as capacity expansion for determination of tariff. Provided that the entity has taken approval wherever required in terms of Petroleum and Natural Gas Regulatory Board (Authorizing Entities to Lay, Build, Operate or Expand Natural Gas Pipelines) Regulations, 2008 along with the increase in capacity due to such interconnection as per Petroleum and Natural Gas Regulatory Board (Determining Capacity of Petroleum, Petroleum Products and Natural Gas Pipeline) Regulations, 2010.”

Sub clause 1 of Clause 6 of Schedule A of NGPL Tariff Regulations, as amended on 29.3.2023 on Adjustment of volume variation in Tariff computation after final computations of initial unit natural gas pipeline tariff states that “Adjustment shall be carried out in the normative volumes considered as per clause 6(1) where normative being higher than actual volumes. The extent of adjustment shall be maximum upto the difference between actual volumes higher than the normative volumes considered in any of the year(s) of the economic life of the pipeline.”

6.6.3. Clarification sought and response received:

1. **Clarification sought by PNGRB:** Kindly share the GTA for >1 year based on which actual volumes have been taken in the tariff model.

IGGL’s Response: The GTA is not yet finalised and is expected to be closed by March 2024. The volumes considered are based on MoU and communication with consumers.

- 6.6.4. PNGRB’s initial view:** Provisional capacity of 3.94 MMSCMD is considered from 1.4.2024 till end of economic life. The ramp up in volume for first ten years has been considered in computation of normative volume.

(MMSCMD)			
Year	Actual estimated	Normative Volume (75% of capacity with ramp up)	Volume divisor in submission
2024-25	0.19	0.89	0.89
2025-26	0.50	1.03	1.03
2026-27	2.20	1.18	2.20
2027-28	2.40	1.33	2.40
2028-29	2.52	1.48	2.52
2029-30	2.52	1.77	2.52
2030-31	2.52	2.07	2.52
2031-32	2.52	2.36	2.52
2032-33	2.52	2.66	2.52
2033-34	2.65	2.96	2.65
2035-2038	2.65	2.96	2.65
2038-39 to 2042-43	2.78	2.96	2.78
2043-44 to 2047-48	2.92	2.96	2.92
2048-49 to 2053-54	3.06	2.96	3.06
Total	77.98	76.93	79.21

6.7. Gross Calorific Value

- 6.7.1. Submission Made:** IGGL in its submissions has considered Gross Calorific Value (GCV) of 9455 Kcal/SCM based on Calorific Value assumed for Tariff order of

JHBDPL; JHBDPL being main source pipeline of GNPL throughout the economic life of the pipeline.

6.7.2. Regulatory Provision: As per sub-clause 2 in Clause 6 of Schedule A of NGPL 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.

6.7.3. PNGRB's initial view: As given by entity, since Jagdishpur-Haldia-Bokaro-Dhamra Natural Gas Pipeline (JHBDPL) shall be the main source pipeline of GNPL throughout the economic life of the pipeline, it is proposed to consider GCV of 9455 Kcal SCM. The same shall be trued up based on the actuals.

6.8. Number of Working Days

6.8.1. Submission Made: IGGL has considered 350 days as working days in a financial till the end of economic life of pipeline.

6.8.2. Regulatory Provision: As per the sub-clause 3 in Clause 6 of Schedule A of the Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Third Amendment Regulations, 2020, 350 working days shall be considered in a year for the purpose of tariff determination under these regulations.

6.8.3. PNGRB's initial view: In view of the above, it is proposed to consider 350 working days in a financial year till the end of economic life of pipeline.

6.9. Return on Capital Employed

6.9.1. Submission Made: Rates of corporate income tax applicable each year to IGGL and subsequent computation of pre-tax rate of return are as follows:

Year(s)	FY 2019-20 & onwards
Income Tax Rate	25.17%
Pre-tax rate of return	16.04%

6.9.2. Regulatory Provision: 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 as per the provisions of Income Tax Act, 1961. As per the amendment to explanation to clause 3, the lowest nominal rate of income tax shall be applied with effect from the financial year of the amendment regulation i.e. FY 2022-23 onwards.

6.9.3. Clarification sought and response received:

Clarification sought by PNGRB: Pre-commissioning Capex period discounting formula to be without any adjustments for nominal rate of tax.

IGGL's Response: Since cash flows during pre-commissioning periods are also discounted to work out IRR for project, tax rate is also considered to arrive at post-tax IRR.

6.10. Working Capital

6.10.1. Tariff Submission: IGGL, in its tariff submission, has considered average working capital of ₹ 49.88 crore. Working capital is calculated as sum of 30 days of Opex (excluding depreciation) and 18 days of revenue (tariff receivables).

6.10.2. Regulatory Provision: In terms of sub-clause 2 of clause 4 of Schedule A of NGPL Tariff Regulations, normative working capital is equal to thirty days of operating costs excluding depreciation and eighteen days natural gas pipeline tariff receivables.

6.11. Terminal Value

6.11.1. Tariff Submission: IGGL, in its tariff submission, has considered a terminal value of ₹ 920.56 crore consisting of residual value of NFA of ₹ 836.95 crore, line pack ₹ 15.14 crore and release of working capital ₹ 68.47 crore.

6.11.2. Regulatory Provision: Terminal Value is the sum of the residual value of the assets at the end of the economic life, working capital and line pack. It is considered as cash inflow at the end of economic life of the pipeline.

6.12. Zonal Apportionment: Since the length of the North-East Natural Gas Pipeline Grid ("NEGG") network of IGGL exceeds 300 km, the apportionment of the levelized tariffs is required to be undertaken post finalization of the provisional tariff.

6.13. **Inclusion of NEGG pipeline in the list of natural gas pipeline which are part of the National Gas Grid system**

6.13.1. As given at para 3 above, IGGL has requested that NEGG pipeline be included in the list of natural gas pipelines which are part of the National Gas Grid system for calculation of Unified Tariff in Schedule C of Tariff Regulations.

6.13.2. Regulatory Provision: The methodology for determination of NGPL tariff has been specified in the relevant provisions of Tariff Regulations. Further, the methodology for determination of unified tariff and its applicability has been inserted in the Tariff Regulations by way of amendment, i.e., PNGRB (Determination of Natural Gas Pipeline Tariff) Second Amendment Regulations, 2020, PNGRB (Determination of Natural Gas Pipeline Tariff) Second Amendment Regulations, 2022 and Petroleum and Natural Gas Regulatory Board (Determination of Natural Gas Pipeline Tariff) Amendment Regulations, 2023.

In terms of the extant regulatory framework, NEGG is proposed to be made part of national gas grid system (NGGS) from the expected date of its commissioning

i.e. 1.4.2024 and enlist NEGG in Schedule C to these regulations by amendment of the said Schedule C from time to time. Also, as provided in Schedule D to these regulations, IGGL would be included in the Industry Committee and Settlement Committee.

7. Comments of stakeholders sought:

- 7.1.** Determination of the natural gas pipeline tariff is a time bound exercise. PNGRB solicits the clause wise views of all the stakeholders in writing on IGGL's tariff filing for the NEGG Network within 15 days i.e. 9.3.2024 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*

- 7.2.** Stakeholders other than IGGL to mark copy of all comments to IGGL at following address:

*General Manager (Mktg. -RA)
Indradhanush Gas Grid Limited
7th Floor, NGL Centre,
122 A, G.S. Road, Christian Basti
Guwahati, Assam 781005
Email: jayantananarayan.das@iggl.co.in*

- 7.3.** IGGL to submit its response on comments of other stakeholders to PNGRB within 15 days from the last date of comments to be submitted by stakeholders as mentioned at point no. 7.1 above i.e. by 24.3.2024.
- 7.4.** Open house to discuss the comments of all the stakeholders shall be held at 11:00 Hrs on 28.3.2024 at PNGRB office.

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