



**Welcome to Presentation  
on**

# **CBG-CGD Synchronisation Scheme**



**GAIL (India) Limited**



# MoP&NG policy initiatives: CBG-CGD Synchronization Scheme

- MoP&NG has issued policy guidelines dtd. 09.04.2021 and 26.10.2021 for synchronisation of CBG produced by plants in CGD networks.
- GAIL has been mandated to operationalize the Synchro Scheme and supply Biogas/CBG co-mingled with domestic gas at Uniform Base Price (UBP) to all CGD entities for use in CNG(T) & PNG(D) segments of CGD network.
- Vide policy guideline dated 26.10.2023, term of CBG-CGD Synchro Scheme has been further extended by 10 years.
- GAIL has successfully implemented the Synchro scheme on pan India basis and it is open to every CBG producer for supply of their Biogas/CBG to nearby CGD networks.



# Demand of CBG in CGD sector

- After the 12<sup>th</sup> CGD bidding round, 308 GAs would be authorized to various entities covering **100% of India's geographical area** (except the islands) spread over 600 districts in over 30 states/UTs.
- Widespread access to CGD networks will bring **demand centres close to CBG plants**, thereby enabling a gas based economy
- **Increasing demand for Biogas** due to shortfall in domestic gas supply for PNG(D) & CNG(T) segments. Present shortfall : ~ 7 MMSCMD
- **CBO:** Blending with Biogas/CBG mandatory for CGD networks. CBO is 1%, 3%, 4% & 5% of total CNG/PNG consumption for FY '25-26, '26- 27, '27-28 and '28-29.
- CGD sector: Anchor customer for Biogas/CBG





# Highlights of CBG-CGD Synchronisation

- Signed 76 Tripartite Agreements (TPA) with :
  - ✓ 46 CBG producers
  - ✓ 24 CGD entities as on date
- Selling Biogas/CBG to 26 CGD GAs all over the country
- GAIL is ensuring offtake of ~75000 SCMD Biogas/CBG.
- Cumulative Biogas sale : > 16100 MT



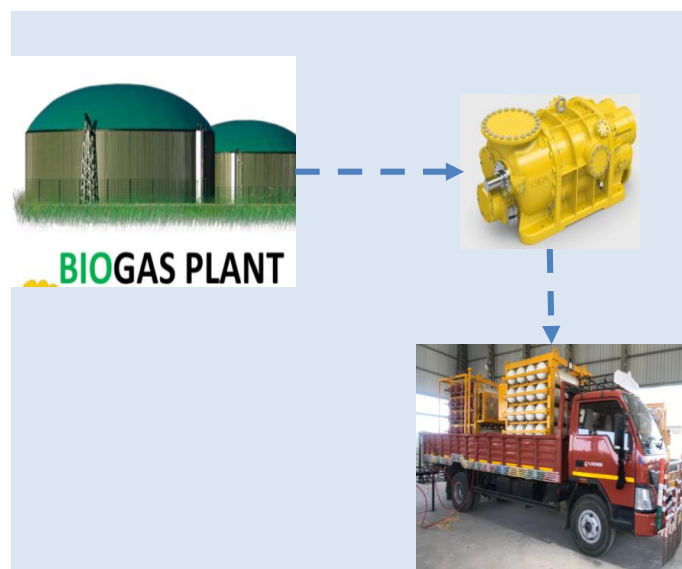
# Biogas/CBG mixing under CBG/CGD Synchronization



Supply of Biogas/CBG, co-mingled with domestic gas, at Uniform Base Price (UBP) to all CGD entities for use in CNG(T) & PNG(D) segments.



# Option 1(a): CBG Delivery @ 200-250 Bar pressure in Cascade for delivery at Retail Outlets



Delivery at RO : CBG @ 200-250 Bar



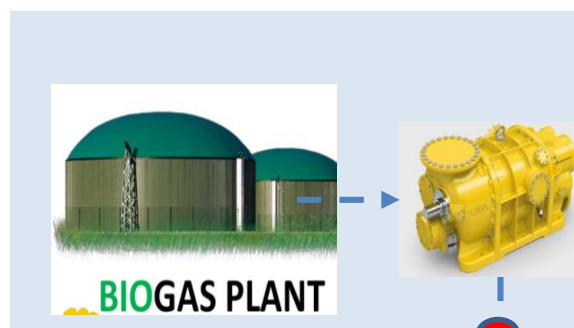
 Delivery Point

CBG Supply Illustration



# Option 1(b): CBG Delivery @ 200-250 Bar pressure at CBG Plant

Delivery at Plant: CBG @ 200-250 Bar

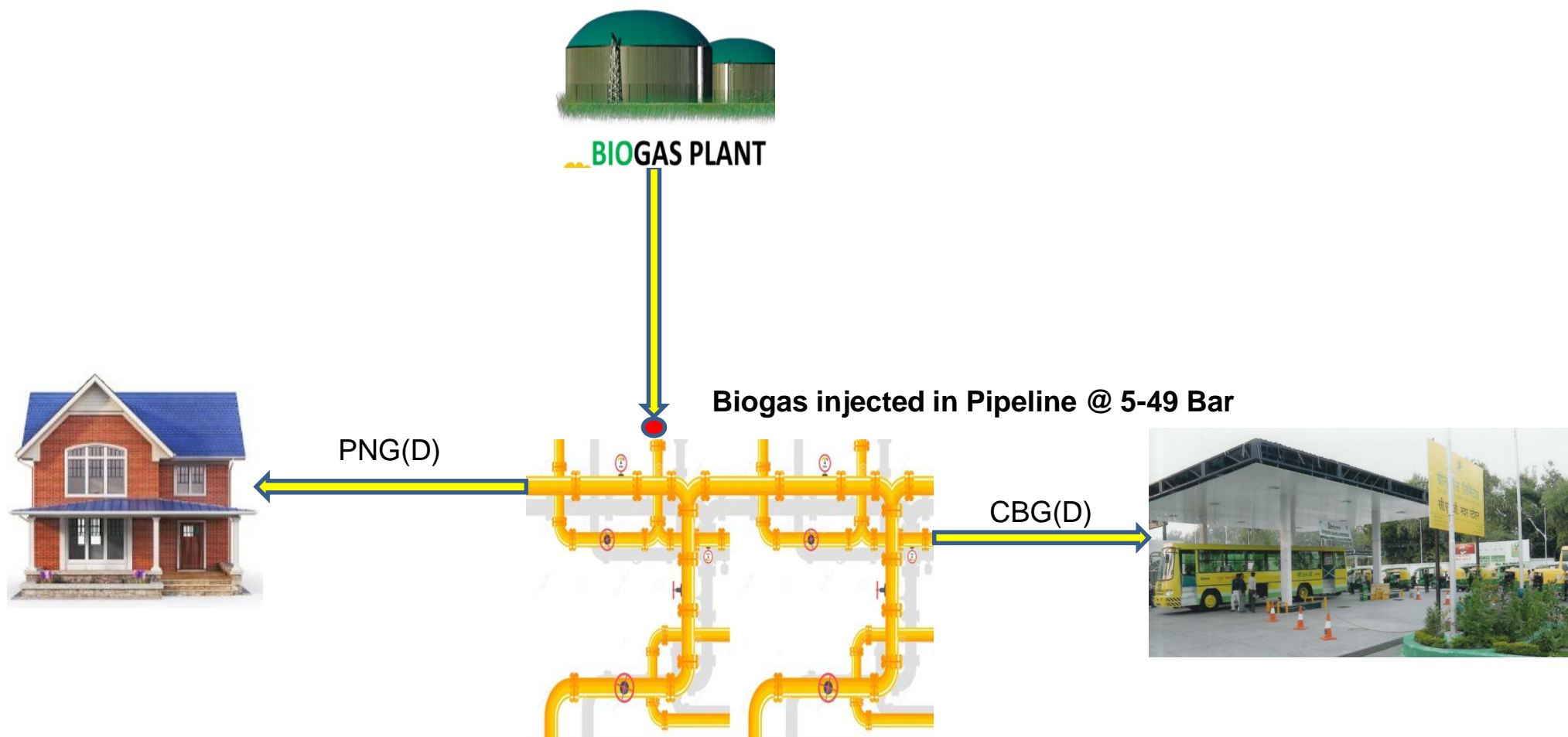


● Delivery Point

**CBG Supply Illustration**



# Option 2: Biogas injected in CGD Pipeline Network @ pipeline pressure

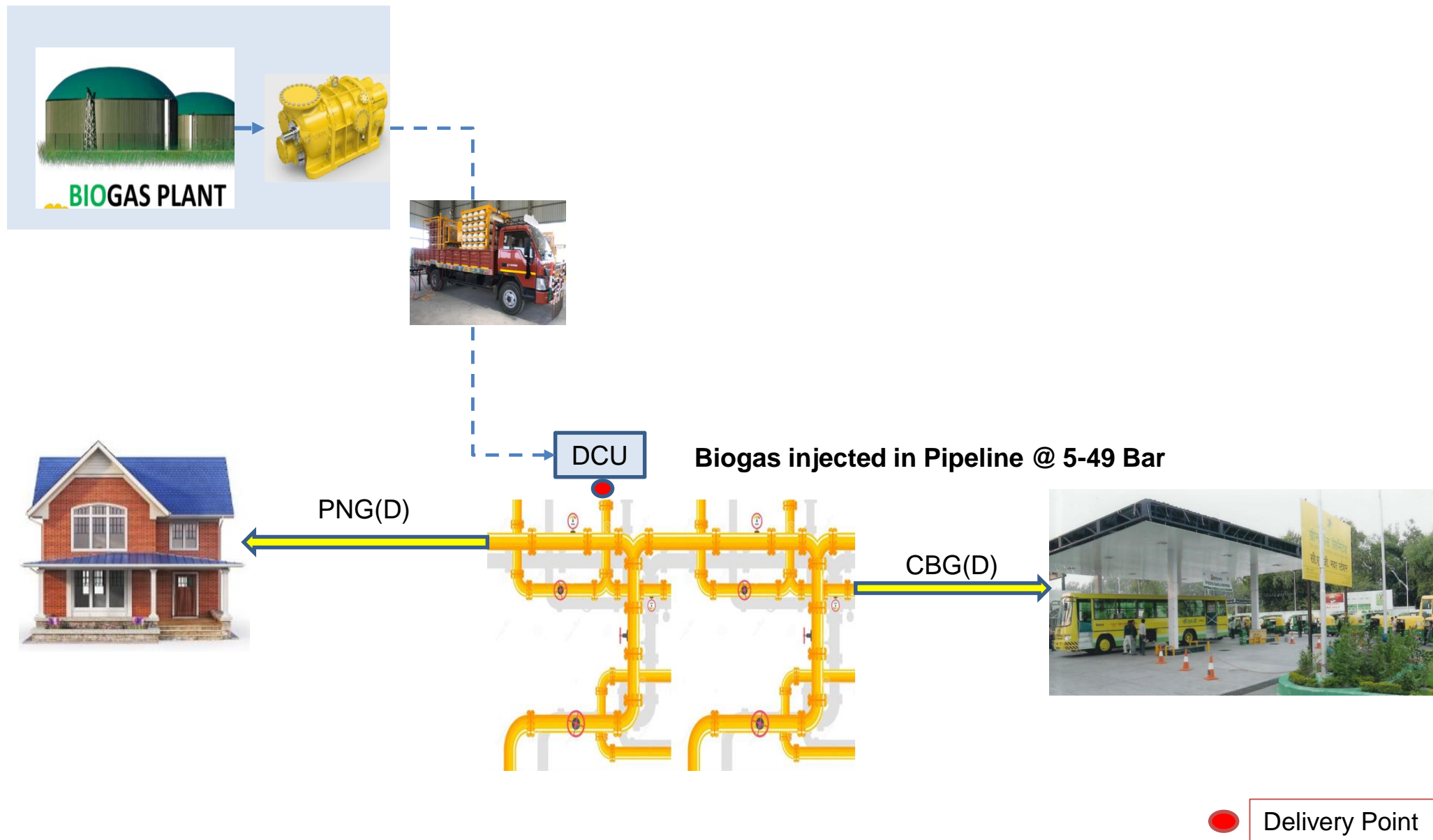


**Biogas Supply Illustration**





# Option 3: Biogas injected through DCU in CGD Pipeline Network @ pipeline pressure



**Biogas Supply Illustration**



# CBG-CGD Synchronization Scheme

- GAIL purchases **Biogas/CBG** from producers and sells to CGD entities across India along with APM/NAPM gas at **Uniform Base Price (UBP)** for use in **PNG(D) & CNG (T) segments**.

Commodity	Delivery Point	Mode of Transport by CBG Producer	Basic Purchase Price by GAIL from Producer	Sale Price by GAIL to CGD Entity
<b>CBG</b>	Retail Outlet (RO) of CGD entity and/or CBG Plant	Thru Cascade	Rs. 1380/MMBTU + Compression charge (Rs.8/Kg)	UBP + Compression charge (Rs.8/Kg)
<b>Biogas</b>	Pipeline network of CGD entity	Thru Tie-in Pipeline	Rs. 1380/MMBTU	UBP
		Cascade-Decompression	+ P/L Compression charge (Rs.2/Kg)	+ P/L Compression charge (Rs. 2/Kg)

\*Biogas Price revised periodically; Floor price: Rs.770/MMBTU;

Price valid till 30.04.2024. For latest updates, see [www.satat.co.in](http://www.satat.co.in).

# Compressed Biogas (CBG) to meet IS 16087:2016 Quality specification for use in Transport sector and Biogas to be compliant with PNGRB specifications for injection in CGD networks.



# Operational Excellence in the Synchro Scheme

- **One Nation One Price** – One Biogas Procurement price for CBG producers and one Sale price for CGD entities @UBP.
- **Attractive Procurement Pricing:** Procurement price linked to RSP of CNG
- **Higher Quality Higher Price:** Energy based Biogas Pricing
- Ensures affordability, transparency and sustainability
- **Flexibility of supply & offtake** for Producers and CGD entities
- **Seamless & Hassle free execution** - Online Joint Ticketing of Biogas through Web Portal



# Win-Win for all Stakeholders

S. No	Advantages	Beneficiary
1	Attractive Biogas Purchase price of Rs.1380/MMBTU* with floor of Rs. 770/MMBTU	CBG Producer
2	Compression charge of Rs.8/KG for CBG Pipeline compression charge of Rs. 2/Kg for injecting in CGD network	CBG Producer
3	Provision of Biogas delivery in pipeline network of CGD entity through Compression-Transportation-Decompression arrangement as a short-term measure	CBG Producer
4	Energy based pricing - Higher price realization for higher quality of Biogas supplied	CBG Producer
5	Affordable Biogas/CBG purchase price for CGD entity @ UBP	CGD Entity
6	Biogas/CBG chargeable @GST: savings to CGD entities	CGD Entity
7	No trunk transmission tariff levied on supply of Biogas to CGD entity	CGD Entity
8	Biogas/CBG supply to CGD entity over & above APM/NAPM allocation for PNG(D) & CNG(T) segments	CGD Entity
9	Simplification of transaction processes thru Online Joint Ticketing of Biogas through Web Portal	Producer & CGD Entity

\* Price valid till 30.04.2024. For latest updates, see [www.satat.co.in](http://www.satat.co.in).



## Quality Specifications of Biogas (Bio-methane) IS 16087:2016

Sl No.	Characteristic	Requirement
(1)	(2)	(3)
i)	Moisture, $\text{mg/m}^3$ , <i>Max</i>	5
ii)	Methane, percent, <i>Min</i>	90.0
iii)	Total sulphur (including $\text{H}_2\text{S}$ ), $\text{mg/m}^3$ , <i>Max</i>	20
iv)	$\text{CO}_2 + \text{N}_2 + \text{O}_2$ , percent, <i>Max (v/v)</i>	10
v)	Only $\text{CO}_2$ , percent, <i>Max (v/v)</i>	4
vi)	Oxygen percent, <i>Max</i>	0.5



## Quality Specifications: PNGRB gas Specifications for Pipeline supply

<b>Schedule – VI</b>	
<b>(see Regulation 7(1))</b>	
<b>Threshold limit for gas parameters on City or Local Natural Gas Distribution Network</b>	
<b>Parameters</b>	<b>Limit</b>
Hydrocarbon dew point (Degree Celsius, max.)	0
Water dew point (Degree Celsius, max.)	0
Hydrogen Sulphide (ppm by wt, max.)	5
Total Sulphur (ppm by wt, max.)	10
Carbon dioxide (mol%, max.)	6
Total inerts (mol%)	8
Temperature (Degree Celsius, max.)	55
Temperature (Degree Celsius, min.)	10 - 20
Oxygen (% mol. vol. max.)	0.2
Wobbe Index (for domestic consumers), MJ/SCM	39 - 53



THANK YOU



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**Biogas/CBG Price under CBG-CGD Synchronisation scheme**  
**(01.11.2023 -30.04.2024)**

<b>Commodity</b>	<b>Mode of Transport by CBG Producer</b>	<b>Basic Purchase Price by GAIL from Producer</b>
CBG	Through Cascade	Rs. 1380/MMBTU*
		+ Compression charge (Rs.8/Kg)
Biogas	Through Tie-in Pipeline	Rs. 1380/MMBTU
	Cascade-Decompression	+ P/L Compression charge (Rs.2/Kg)

\* Biogas price is incl. of transportation upto one-way distance of 75 Km to the retail outlet

**Methodology for determination of procurement price of Biogas under CBG-CGD Synchronization scheme**

1. Collection of CNG Retail Selling Prices (RSP) of GAIL CGDs, GAIL's joint venture companies and GAIL Gas Ltd. on any working day between 16<sup>th</sup>-22<sup>nd</sup> day of the month preceding the 6-monthly period for which the procurement price of Biogas is to be determined.
2. Determination of simple average of the CNG RSPs mentioned above. Let this determined value be 'A'.
3. Corresponding to CNG RSP 'A', determination of "Procurement price of CBG @80% of average of slab (without GST)" from the SATAT pricing table, circulated vide MoM 18.04.2022 by Oil & Gas Marketing Companies (**Annexure-1**). Let the determined value be 'B'.
4. Accordingly, the price (Rs./Kg) of Biogas with above mentioned composition @90% of Methane will be = B - Compression charge = B – 8.
5. The above price is converted from Rs/Kg to Rs/MMBTU which becomes the Biogas price for the upcoming 6-monthly period under the Synchro scheme.
6. Presently, the price is determined on 6-monthly basis and applicable w.e.f 1st May and 1st November.





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Annexure-1

S No	Lower Retail Selling Price of CBG in Slab	Higher Retail Selling Price of CBG in Slab	Average of Slab	Procurement price of CBG @80% of average of slab	Procurement price of CBG @80% of average of slab	Cost & Margin for OGC @20% of average of slab	Cost & Margin for OGC @20% of average of slab
	including tax	including tax	including tax	Without GST	With GST	Without GST	With GST
	Rs./kg	Rs./kg	Rs./kg	Rs./kg	Rs./kg	Rs./kg	Rs./kg
1	Upto 70		-	54.00	56.70	-	-
2	70.01	75.00	72.51	55.25	58.01	13.81	14.50
3	75.01	80.00	77.51	59.06	62.01	14.76	15.50
4	80.01	85.00	82.51	62.86	66.01	15.72	16.50
5	85.01	90.00	87.51	66.67	70.01	16.67	17.50
6	90.01	95.00	92.51	70.48	74.01	17.62	18.50
7	95.01	100.00	97.51	74.29	78.01	18.57	19.50

Note: For further increase in slabs beyond Rs. 100/kg, same formula will be followed.

The above pricing modalities have been prepared keeping in view present CNG price more than ~Rs. 70/kg in all markets, based on which minimum procurement price of Rs. 54/kg has been fixed. If there is a drop in CNG prices below Rs. 70/kg, the Industry Committee may review the minimum procurement price of Rs. 54/kg & implement accordingly.