MANDATORY BLENDING AS LEGAL OBLIGATION: ASSESSING THE REGULATORY ARCHITECTURE OF INDIA'S COMPRESSED BIOGAS BLENDING OBLIGATION UNDER THE SATAT FRAMEWORK

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ABSTRACT

India's Compressed Biogas Blending Obligation (CBO) marks a significant transition in the legal treatment of renewable gas within the country's city gas economy. What began under the SATAT framework as a policy led attempt to stimulate compressed biogas (CBG) production through offtake assurance, industry coordination, and market creation has now moved into a mandatory phase through the Ministry of Petroleum and Natural Gas Office Memorandum dated 27 February 2024 directing City Gas Distribution (CGD) entities to blend prescribed percentages of CBG in the CNG (transport) and PNG (domestic) segments.[1] This article argues that the CBO has evolved beyond a mere policy aspiration, but it has not yet matured into a fully self-contained statutory or regulatory code with an expressly articulated sanction architecture of its own.[2] Instead, the present regime is best understood as a hybrid legal structure, it rests on a biofuels policy decision taken through the National Biofuel Coordination Committee (NBCC), is operationalised through an executive mandate issued by MoPNG, and relies for practical implementation on the pre-existing regulatory ecosystem governing CGD authorisations, pipeline access, technical standards, and network monitoring.[3] That hybrid structure gives the obligation real normative force, but it also leaves important ambiguities around delegated authority, compliance measurement, enforceability, market

[1] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), *Mandatory Blending of Compressed Bio-Gas (CBG) in Compressed Natural Gas (Transport) [CNG(T)] and Piped Natural Gas (Domestic) [PNG(D)] Segments of City Gas Distribution (CGD) Networks—CBG Blending Obligation (CBO)* (Feb. 27, 2024).

[2] Id.; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025).

[3] Cabinet Approves Amendments to the National Policy on Biofuels–2018, Press Info. Bureau, Gov't of India (May 18, 2022); Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects* (Aug. 26, 2025); Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025).

access, certification, and fiscal neutrality.[4]

Keywords: Compressed Biogas; CBO; SATAT; City Gas Distribution; Renewable Gas Regulation.

I. Introduction:

India's renewable gas transition did not begin with a mandatory blending command. It began with a state backed effort to construct a viable market for compressed biogas by reducing demand risk and organising assured offtake channels.[5] The SATAT scheme, as recorded in IndianOil's official 2021 release, was launched on 1 October 2018 to promote the setting up of CBG plants and make CBG available in the market as a green fuel, while targeting production of 15 MMT of CBG from 5,000 plants.[6] The same release shows that the architecture of SATAT rested on cooperation among oil and gas companies such as IndianOil, HPCL, BPCL, GAIL, and IGL, along with a coordinated marketing arrangement intended to ensure sale of the entire produced quantity from CBG plants.[7] In doctrinal terms, therefore, SATAT started as a market facilitation and offtake assurance framework rather than as a coercive public law command directed at gas distributors.[8]

That original design remains central to understanding the legal evolution of the present CBO. The 2021 IndianOil release also records the signing of a cooperation agreement among oil and gas companies implementing SATAT, the assignment of IndianOil as coordinator under the SATAT scheme, and the designation of GAIL as coordinator for implementation of the CBG-CGD synchronization scheme.[9] It further notes that the first injection of CBG into the Gujarat Gas CGD network took place in line with policy guidelines issued by the Ministry of Petroleum and Natural Gas on CBG injection in the CGD network.[10] These developments demonstrate that, before blending became mandatory, the State had already begun to build a layered implementation framework combining producer assurance, network connectivity, pipeline

[4] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.

[5] Indian Oil Corp. Ltd., News Release, *Shri Dharmendra Pradhan Presides Over a Slew of Initiatives Around Compressed Bio-Gas to Give Fillip to SATAT Scheme* (June 1, 2021).

[6] Id.

[7] Id.

[8] Id.

[9] Id.

[10] Id.

integration, and inter-PSU coordination.[11]

The decisive shift from facilitative policy to mandatory obligation arrived through the MoPNG Office Memorandum dated 27 February 2024 on mandatory blending of CBG in the CNG (Transport) and PNG (Domestic) segments of CGD networks.[12] That memorandum expressly refers to the recommendation of the National Biofuel Coordination Committee made in its meeting held on 24 November 2023 and conveys the introduction of mandatory blending of CBG in the relevant CGD segments in order to stimulate demand for CBG and meet India's commitments toward net zero.[13] It provides that CGD entities are mandated to blend CBG as a prescribed percentage of natural gas consumed in the CNG(T) and PNG(D) segments across the country, keeps the regime voluntary until FY 2024-25, and then fixes mandatory percentages of 1%, 3%, and 4% for FY 2025-26, FY 2026-27, and FY 2027-28 respectively, rising to 5% from FY 2028-29 onward.[14]

That move raises the principal legal question for this article: *whether India's CBO has now hardened into a legal or regulatory obligation, or whether it remains essentially policy-driven and dependent on administrative persuasion and contract?* The answer matters because the legal quality of the mandate determines how one should analyse its binding force, its institutional basis, its verification pathway, and its sanction logic.[15] It also matters because blending mandates in energy law often appear straightforward at the level of national targets while remaining legally unsettled at the level of delegated authority, measurement, traceability, and enforceability.[16]

This article contends that CBO has moved beyond voluntary policy and now operates as a binding executive obligation, but that its legal architecture remains incomplete. More specifically, the present framework is best characterised as a hybrid regime: it derives normative authority from the biofuels policy ecosystem and the NBCC, is operationalised by MoPNG through an Office Memorandum, and is expected to function through the existing

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[11] Id.; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[12] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[13] Id.
[14] Id.
[15] Id.; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.
[16] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

regulatory structure governing CGD authorisations, technical standards, and network access.[17] ***Its weakness is not lack of state intention. Its weakness lies in the fact that the mandate is clearer than the public compliance code, and the legal obligation is more fully expressed than the legal consequences of breach.***[18]

II. From SATAT to Mandate:

The SATAT framework was designed to solve a specific market problem: CBG production would not scale unless investors could rely on a predictable buyer structure and a minimum level of offtake security.[19] IndianOil's 2021 official release explains that SATAT was meant to set up CBG production plants and make the gas available as a green fuel, while generating investment, jobs, and additional income streams *through use of agricultural residue, cattle dung, and municipal solid waste.*[20] The same document records that the cooperation agreement among oil and gas majors was intended to establish a strong network for marketing the entire produced quantity of CBG through various channels and that associate implementers could also join the movement.[21] This is important because it reveals that SATAT's legal architecture was initially contractual and coordinative rather than regulatory in the strict sense.[22]

The coordination model was accompanied by efforts to integrate CBG into existing gas infrastructure. The same 2021 release states that GAIL would coordinate the implementation of the CBG-CGD synchronization scheme, that the first injection of CBG into a CGD pipeline network had been inaugurated in Gujarat, and that a dedicated SATAT website had been launched as a resource centre for new and existing CBG plants.[23] In legal terms, these measures were laying the groundwork for system integration, they treated CBG not simply as a standalone commodity sold at plant gates or retail outlets, but as a fuel intended to enter and

[17] Id.; Cabinet Approves Amendments to the National Policy on Biofuels–2018, supra note 3; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.
[18] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.
[19] Indian Oil Corp. Ltd., News Release, supra note 5.
[20] Id.
[21] Id.
[22] Id.
[23] Id.

move through regulated gas distribution systems.[24] That shift toward system integration is crucial because it made a later blending mandate administratively conceivable.[25]

The 2024 Office Memorandum converts that infrastructural and commercial groundwork into an explicit demand side obligation. Its first substantive clause provides that CGD entities are mandated to blend CBG as a prescribed percentage of natural gas consumed in the CNG(T) and PNG(D) segments of the CGD sector across the country.[26] This is the core legal move. The memorandum does not merely encourage gas distributors to source renewable gas or advise them to increase procurement where feasible. It identifies the obligated class of actors and imposes a quantified obligation upon them.[27] It is therefore the strongest available indicator that the State no longer views CBG uptake as a matter of procurement preference alone.[28]

The same instrument also recognises the incompleteness of physical network integration across India and therefore adopts a transitional logic of compliance. It provides that until the operationalisation of CGD networks across the country, the volume of CBG marketed without co-mingling with natural gas by all CGD entities will be considered as blending for the purpose of fulfilling the CBO.[29] That clause is conceptually significant. It means that compliance is not limited to physical admixture within pipelines; rather, the obligation is framed functionally, with equivalent recognition for CBG volumes marketed outside comingled network supply during the transition period.[30] In effect, the State has chosen a compliance model that prioritizes renewable gas uptake in the CGD ecosystem over strict insistence on immediate universal in network blending.[31]

The Office Memorandum also introduces the conceptual seeds of a renewable attribute accounting regime. It states that CBG should be promoted as a green fuel by guaranteeing its renewable origin and enabling monetisation through a tradable green certificate system, and that mechanisms such as open access, book and claim, and mass balancing may be used for transfer and trading of energy and green certificates.[32] These references indicate that the

[24] Id.
[25] Id.; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[26] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[27] Id.
[28] Id.
[29] Id.
[30] Id.
[31] Id.
[32] Id.

Government appreciates that renewable gas obligations cannot be managed only through simple volumetric delivery. Once gas enters distribution systems or is marketed through multiple channels, renewable origin, physical flow, and contractual entitlement may diverge. The memorandum therefore anticipates a compliance architecture in which certification and attribute-tracking become central to the legal meaning of blending.[33]

III. Source and Nature of Legal Authority:

The legal force of the CBO must be traced through more than one instrument. The 2024 Office Memorandum expressly states that it is issued with reference to the recommendation of the National Biofuel Coordination Committee made in its meeting on 24 November 2023.[34] This means that the obligation is not merely an isolated departmental instruction, but one connected to the larger biofuel's governance framework. That framework is reflected in the PIB release on amendments to the National Policy on Biofuels, which records that the National Policy on Biofuels, 2018 was notified by MoPNG, that the 2022 amendments were driven in part by NBCC decisions, and that new members were added to the NBCC.[35] The policy ecosystem therefore provides the institutional platform from which CBO emerged.[36]

The CBO, however, does not appear in the uploaded materials as a regulation issued directly by PNGRB or as an amendment text inserted into the CGD authorisation regulations themselves. Its operative legal form is an Office Memorandum of MoPNG approved by the competent authority and circulated to all CGD entities, PPAC, PNGRB, and the principal oil and gas public sector entities.[37] That form matters. In Indian public law, an Office Memorandum can carry binding administrative force within the executive and over sectoral entities subject to the issuing ministry's control or direction, particularly when it contains clear mandates and implementation instructions but an Office Memorandum is not identical in form to a statutory regulation published by an independent regulator under a parent Act.[38]

This is why the better description of CBO is that it has become a binding executive obligation rather than a fully codified self-standing regulation. The language of the memorandum is

[33] Id.
[34] Id.
[35] Cabinet Approves Amendments to the National Policy on Biofuels–2018, supra note 3.
[36] Id.; Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[37] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[38] Id.

mandatory; the dates and percentages are specific; the obligated entities are identified; and PPAC is designated as the Central Repository Body to formulate operational guidelines with approval of the Minister of Petroleum and Natural Gas.[39] These features are too concrete to dismiss as policy rhetoric. At the same time, the memorandum does not itself set out a separate adjudicatory procedure, define breach categories in detail, or specify a dedicated penalty schedule for shortfall in blending.[40] Its legal force is therefore real, but its juridification remains partial.[41]

The hybrid nature of the obligation becomes even clearer when viewed against the original SATAT design. SATAT was structured around offtake arrangements, resource centres, coordination agreements, and confidence building for entrepreneurs.[42] The later CBO overlays a quantified demand side requirement on top of that earlier commercial and infrastructural framework. In other words, India did not create the CBO *ex nihilo*. It first built a producer facing supply ecosystem and then imposed a downstream consumption side obligation on CGD entities.[43] This sequencing makes practical sense, but it also means that CBO's legal operation depends on the continued interaction of policy, contract, public sector procurement, and regulated network access.[44]

IV. Institutional Design and Compliance Pathways:

The 2024 Office Memorandum contains a crucial institutional clause: PPAC shall act as the Central Repository Body to formulate operational guidelines for implementation of the blending obligation, and detailed guidelines shall be issued with approval of the Minister of Petroleum and Natural Gas.[45] This clause is central because it shows that the State intends compliance to be centrally organised rather than left to fragmented bilateral accounting among CGD entities and producers. The repository concept suggests a centralised system for

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[39] Id.

[40] Id.; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.

[41] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

[42] Indian Oil Corp. Ltd., News Release, supra note 5.

[43] Id.; Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

[44] Indian Oil Corp. Ltd., News Release, supra note 5; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.

[45] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

recording, reconciling, and perhaps certifying the blended or credited volumes of CBG.[46]

At the same time, the publicly visible materials indicate that this operational layer remains under development. The memorandum signals the direction of travel repository governance, renewable origin guarantees, and possible use of open access, book and claim, and mass balancing but does not itself publish the full detailed code for measurement, reporting, auditing, and default response.[47] That design choice makes the system administratively flexible, but from a legal scholarship perspective it creates a gap between norm declaration and public procedural detail.[48]

The PNGRB paper on Compressed Biogas Integration in India's Gas Economy is useful in understanding how the implementation side is expected to mature. It states that the CBG Division has been constituted within PNGRB to facilitate the development and integration of CBG into the existing natural gas ecosystem and that the Division acts as a focal point for regulatory facilitation, technical coordination, and stakeholder engagement.[49] The paper also notes that PNGRB is supporting physical connectivity of CBG plants to CGD networks and trunk pipelines, developing a dedicated web-based portal with GIS mapping for planning and monitoring, and promoting the integration of CBG as a cleaner domestic substitute for imported LNG.[50] Although this paper is not the source of the mandate, it reveals the institutional expectations surrounding implementation.[51]

The standards side of compliance is comparatively more definite. The PNGRB paper states that CBG must meet BIS Specification IS 16087:2016 and that injection into natural gas pipelines and CGD networks must conform to the PNGRB Access Code for Common Carrier or Contract Carrier Natural Gas Pipelines Regulations, 2009, the PNGRB Access Code for City or Local Natural Gas Distribution Networks Regulations, 2020, and BIS specifications, with the more stringent requirement prevailing.[52] This is legally important because it shows that the quality of gas eligible for injection is not left to individual negotiation. The CBO thus operates on top of preexisting technical norms that define the permissible interface between biomethane and

[46] Id.
[47] Id.
[48] Id.
[49] Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[50] Id.
[51] Id.
[52] Id.

regulated network systems.[53]

The same paper also identifies the production side and infrastructure side constraints that will shape compliance in practice. It states that 160 CBG plants are operative, 244 are under construction, and 744 have yet to start construction, while a total of 1,150 plants have registered interest with an overall rated production capacity of about 7.72 MMSCMD.[54] It further notes that many operational plants are producing below rated capacity, often in the range of 20% to 60%, because of inconsistent feedstock availability, seasonal variation, technical challenges, and logistical issues in offtake arrangements.[55] These official acknowledgements are vital because they show that the legal obligation to blend exists within a still developing production and evacuation environment.[56]

The infrastructure pathway is equally important. The PNGRB paper highlights the advantages of pipeline connectivity over reliance on road based mobile cascades and states that PNGRB is actively working to establish connectivity between CBG plants and CGD or natural gas pipeline infrastructure to avoid flaring and remove logistical barriers.[57] The CGD authorisation regulations complement this picture by requiring connectivity or access within specified periods in certain situations and by structuring network exclusivity and access conditions across the CGD sector.[58] This means that CBO compliance is not only a matter of gas procurement; it is also a matter of physical and legal access to the infrastructure through which renewable gas can move.[59]

V. Enforceability and Sanction Gaps:

The strongest objection to calling CBO a legal obligation is that the uploaded materials do not contain a standalone penalty clause for failure to meet the prescribed blending percentage. That objection is important, but it is not decisive. The absence of a bespoke penalty in the Office Memorandum does not mean that the obligation lacks binding force. It means, rather, that the

[53] Id.
[54] Id.
[55] Id.
[56] Id.
[57] Id.
[58] Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.
[59] Id.; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.

sanction logic must be inferred from the surrounding regulatory ecosystem governing CGD entities.[60]

The PNGRB CGD authorisation regulations show that the CGD sector already operates under a mature compliance regime. The regulations require authorised entities to submit monthly and yearly progress reports, empower the Board to monitor performance, bind entities to undertake remedial action within stipulated periods, and state that failing such action the entity shall be liable for action under Section 28 of the Act apart from any penalty under the regulations.[61] The same regulations also provide for show cause notices, termination of authorisation, and encashment of performance bonds where entities commit serious defaults or fail to meet required performance benchmarks.[62] This demonstrates that the legal ecosystem in which CBO operates is not normatively weak. Rather, it already contains significant public law enforcement tools.[63]

The Office Memorandum's references to a central repository, renewable origin guarantees, and mechanisms such as book and claim and mass balancing show that the Government expects compliance to be measured through a documented and auditable system rather than through informal declarations.[64] The PNGRB paper's advocacy of a Renewable Gas Certificate mechanism and a web based monitoring portal points in the same direction.[65] If these mechanisms are formalised, then enforcement may emerge through a combination of central data reconciliation, certification, and CGD sector reporting obligations rather than solely through physical inspections.[66]

The fiscal structure further complicates enforceability. The PNGRB paper states that when CBG is blended with natural gas, the resulting product is treated as natural gas for certain tax purposes, creating additional VAT and excise related cost burdens that may not arise in the

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[60] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[61] Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.
[62] Id.
[63] Id.
[64] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[65] Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[66] Id.; Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

same way for direct retail sale of CBG.[67] It notes that exemption from excise duty on CBG blended with CNG is being pursued with the Ministry of Finance and that tax rationalisation is needed to reduce the end user cost burden.[68] A legal mandate that operates within a fiscally distorted market may remain formally binding while still producing uneven incentives for compliance. This is therefore not merely an economic concern but part of the regulatory design problem itself.[69]

VI. Assessment:

On the one hand, the 27 February 2024 Office Memorandum is too specific, too directive, and too institutionally embedded to be treated as a mere policy aspiration.[70] It identifies the obligated actors, the covered segments, the phase in pathway, the treatment of non-comingled volumes during the transition period, and the central repository institution responsible for operational guidelines.[71] It is backed by the NBCC recommendation within the biofuels policy framework and circulated to the relevant regulatory and industry actors.[72] On that basis, CBO is best understood as a genuine legal obligation in the sense of a binding executive mandate.[73]

On the other hand, the legal architecture remains incomplete. The obligation has stronger normative declaration than publicly visible enforcement detail. The standards for gas quality and injection are reasonably clear because they rest on BIS and PNGRB access codes.[74] The production and connectivity context is increasingly visible through the PNGRB paper and SATAT coordination structure.[75] But the publicly surfaced materials do not yet provide a full statement of how blending will be measured, how renewable attributes will be certified, how PPAC's repository mechanism will interact with PNGRB's regulatory authority, and what precise sanction follows from a CGD entity's failure to meet the mandated percentage.[76]

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[67] Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[68] Id.
[69] Id.
[70] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[71] Id.
[72] Id.; Cabinet Approves Amendments to the National Policy on Biofuels–2018, supra note 3.
[73] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.
[74] Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3.
[75] Id.; Indian Oil Corp. Ltd., News Release, supra note 5.
[76] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note

This incompleteness does not negate the existence of a legal duty. It simply means that the duty presently operates through a hybrid governance model part policy lineage, part executive command, part infrastructure regulation, part certification design, and part market making through public sector coordination.[77] Such hybridisation is common in transitional energy law. But for doctrinal clarity, especially in a legal research paper concerned with source of authority and enforceability, it is essential to distinguish between an obligation that is binding in principle and a compliance code that is fully juridified in practice.[78]

VII. Conclusion:

India's Compressed Biogas Blending Obligation under the SATAT framework has crossed the threshold from voluntary encouragement to binding executive obligation. The 27 February 2024 Office Memorandum mandates blending by CGD entities in the CNG(T) and PNG(D) segments, sets the phase wise percentages through FY 2028-29 onward, recognises transitional compliance through non comingled marketing, and designates PPAC as the Central Repository Body for operational guidelines.[79] These are the hallmarks of a real normative commitment rather than a mere promotional declaration.[80]

At the same time, we see that the mandate has not yet fully matured into a complete and self-contained regulatory code. Its source lies in the NBCC and the National Policy on Biofuels ecosystem; its operative form is an MoPNG Office Memorandum; its implementation depends on SATAT-era producer and offtake arrangements, PNGRB facilitated network integration, BIS and PNGRB technical standards, and the broader compliance structure of CGD authorisations.[81] The result is a hybrid regulatory architecture: legally significant,

1; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.

77 Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Indian Oil Corp. Ltd., News Release, supra note 5; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.

78 Id.

79 Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1.

80 Id.

81 Cabinet Approves Amendments to the National Policy on Biofuels–2018, supra note 3; Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Indian Oil Corp. Ltd., News Release, supra note 5; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board,

administratively active, and institutionally ambitious, but still marked by unresolved questions regarding delegated authority, traceability, public enforcement logic, and sanction pathways.[82]

For legal analysis, therefore, the most accurate description is neither that CBO is merely policy nor that it is already a fully codified statutory regulation. It is a binding executive obligation embedded within a layered regulatory and infrastructural ecosystem. Its future legal solidity will depend on whether the promised operational guidelines, repository mechanisms, certification systems, and enforcement linkages are formalised in a way that turns today's mandate into tomorrow's stable compliance regime.[83]

Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008 (as amended through Sept. 17, 2025), supra note 3.

[82] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.

[83] Ministry of Petroleum & Natural Gas, Office Memorandum No. L-16020/1/2023-GP-I (E-45649), supra note 1; Petroleum & Natural Gas Regulatory Board, *Compressed Biogas Integration in India's Gas Economy: Progress and Prospects*, supra note 3; Petroleum & Natural Gas Regulatory Board, *Petroleum and Natural Gas Regulatory Board Authorizing Entities to Lay, Build, Operate or Expand City or Local Natural Gas Distribution Networks Regulations, 2008* (as amended through Sept. 17, 2025), supra note 3.