

SESSION 6

IT DIVISION



**VIKAS
SHARMA**



**SUJIT SAGAR
KERKETTA**



**GARIMA
MALHOTRA**

IT Division @ PNGRB

Enablers for leveraging **Digital** infrastructure to enhance **Transparency**, **Compliance** and **Safety** across the **Petroleum and Natural Gas** sector.

Digital Platforms

ePortal, IGMS, NHIMS

Data Analytics

Monitoring and Insights

Cyber Security

Secure Infra and Access



Agenda

01

About PNGRB & IT Division

Mandate, Scope and Evolution

02

Digital Infrastructure

Data Centre, Network & Cloud

03

e-Portal & Regulatory Applications

Authorization, Monitoring, TPIA, Legal

04

Consumer Protection — IGMS

Integrated Grievance Management System

05

National Monitoring Centre

Advanced Centre for Infrastructure Monitoring

06

Compliance Digitization

T4S, ERDMP, IMS, Incident Reporting

07

Cybersecurity for Regulated Entities

Draft Guidelines & Standards Framework

08

Website, PR & Social Media

Digital Presence and Public Outreach

09

Emerging Tech & Future Roadmap

AI, Data Expansion, 2026-27 Initiatives

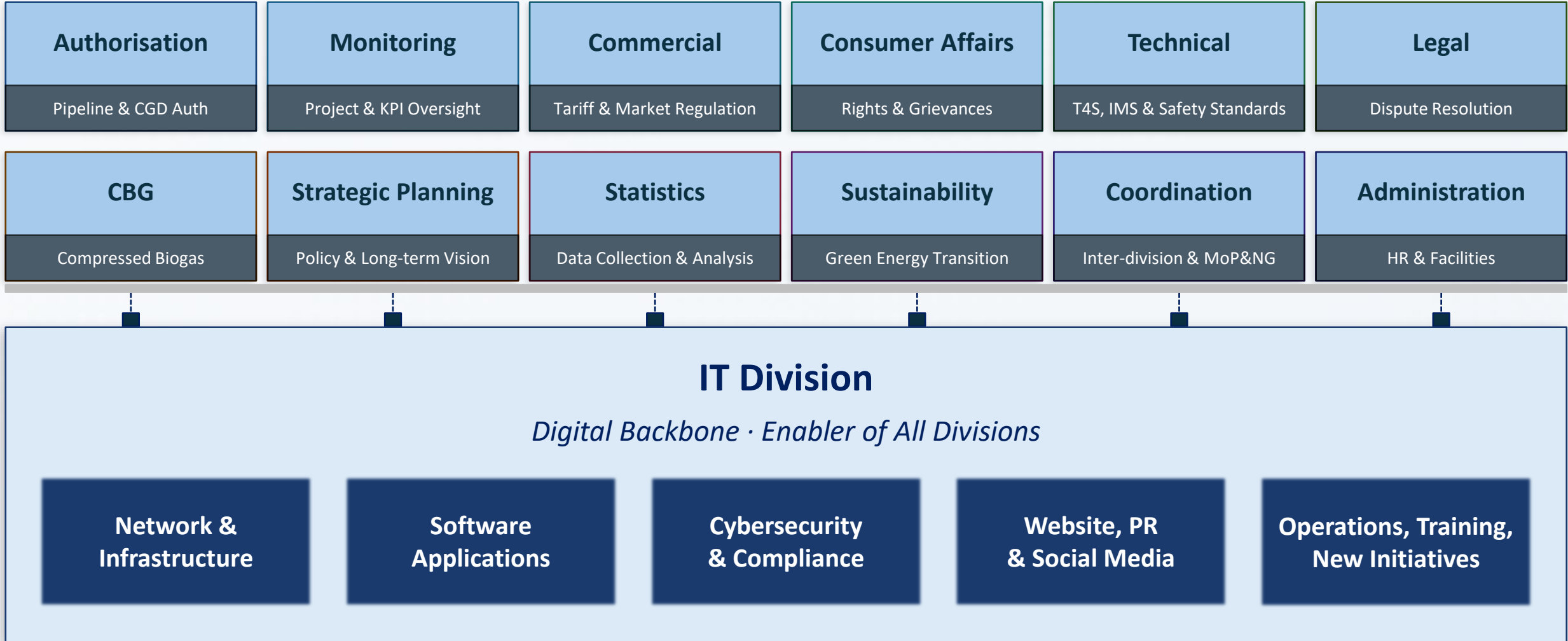


IT Division – Evolution & Mandate





PNGRB – IT Division as Digital Backbone





IT Systems and Services

The IT Division powers PNGRB's regulatory mandate by building and managing a **secure, scalable**, and integrated **digital ecosystem** that enhances operational efficiency, transparency, and stakeholder engagement.



Servers, Cloud

Delivering resilient and scalable infrastructure to ensure high availability of critical systems and data.



Network (LAN, NICNET, Internet)

Enabling secure, high-performance connectivity as the backbone of all digital operations and inter-agency coordination.



Software Applications

Driving robust platforms that enhance regulatory efficiency, transparency, and data-driven decision-making.



Cybersecurity

Strengthening organizational resilience by proactively protecting digital assets and ensuring data integrity.



PCs & Peripherals

Empowering workforce productivity through standardized, reliable, and well-supported end-user computing environments.



VC Systems, Telecom, AV

Facilitating seamless, technology-enabled collaboration and stakeholder engagement across geographies.



Access Control, CCTV

Integrating physical security systems to safeguard assets, personnel, and sensitive infrastructure.



Website, PR & Social Media

Enhancing institutional visibility, transparency, and stakeholder outreach through a strong digital presence.

Importance of Digital for Effective Regulation

Digital transformation is essential for PNGRB to effectively regulate the petroleum and natural gas sector, **enhance transparency**, **improve compliance**, and **ensure safety** across all downstream operations.

Scale & Complexity

Managing 33,000+ km of pipelines, 9,200+ km of petroleum product pipelines, and 307 CGD networks across India requires time to time visibility and automated monitoring systems.

33,000 km pipelines

307 CGD networks

Efficiency

Digital workflows reduce regulatory friction, automate compliance checks, and enable faster approval processes for infrastructure projects.

Faster Approvals and **Cost Reduction**

Data-Driven Decisions

Advanced analytics and visualization tools provide insights for tariff determination, capacity planning, and market development.

Data Accuracy and **Focused Monitoring**

Safety Oversight

Timely incident reporting, safety compliance tracking, and alerts for critical infrastructure protection.

Consumer Trust

IGMS portal enables transparent grievance redressal, time to time tracking, and feedback mechanisms for consumer protection.

Faster Resolution Rate

Planning

Digital platforms support infrastructure planning, investment analysis, and strategic decision-making for sector growth.

Digital Regulatory Ecosystem Architecture

Engagement Layer


e-Portal
Entity services


IGMS
Grievance mgmt


Dashboards
Public data


Bulletins
Notifications

Regulatory Workflows


Authorization
Licensing


TPIA/TPCA
Audit mgmt


Monitoring
Incident tracking


Legal e-Filing
Case mgmt

Data & Intelligence


NHIMS
Monitoring Centre


Statistics
Analytics


Data Bank
Storage


MIS
Reporting

Core IT Enablement


eOffice
Workflow Efficiency


SAP
Efficient Accounting


Email
Collaboration


Security
Cyber defense

Software Modules and Portal Landscape



e-Portal

Entity-facing



Authorization & Licensing

Pipeline, CGD, terminal authorizations



TPIA Empanelment

Third-party inspection agency management



Monitoring & Reporting

Capacity, throughput, incident tracking



Legal e-Filing

Case management & e-court



Entity Dashboards

Dashboards for ease of data visibility



IGMS

Consumer-facing



Grievance Lodging

Register complaints via docket number



Status Tracking

Time to time tracking of grievances



Feedback System

Post-resolution feedback collection



Awareness Campaign

PNG, CNG, LPG safety education



MIS Reporting

Consumer complaint analytics



Cross-Cutting Features System-wide



Structured Submissions

Validations, templates, metadata



Audit Trails

Maintaining audit trails



RBAC

Role-based access control



Notification Engine

Automated alerts & updates



Data Validation

Automated validations to reduce errors

✓ Enhanced user experience

👤 Total Grievances: ~450+

🛡️ Enhanced security & integrity

Consumer Protection and Stakeholder Interfaces

IGMS Grievance System

Consumer-facing



Lodge
Submit grievance



Track
Docket number



Feedback
Post-resolution

435

Total Grievances

High

Resolution Rate

Timely

Response

PNGRB has launched an **Integrated Grievance Management System (IGMS)**; a centralized online platform in **March 2026** to provide a unified portal for consumer grievance redressal.

A single-window system for consumers to raise and track grievances across the **LPG, PNG, CNG, and Retail Outlets** (Petrol/Diesel) sectors.

Key Objectives

- **Transparency & Accountability:** Ensures a clear, digital audit trail for every complaint filed.
- **Efficient Redressal:** Provides time-bound resolution for various complaint

Total Grievance

435

Pending Grievance

288

Forwarded: 89

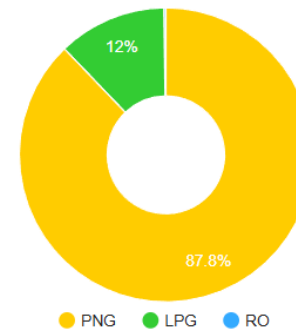
Closed Grievance

0

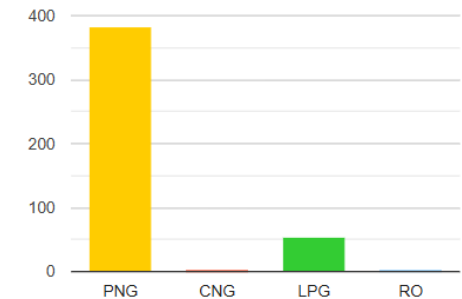
Rejected Grievance

147

CategoryWise Distribution



CategoryWise Statistics



Technical Compliance and Safety Digitization

T4S Compliance Reporting

Multi-sector coverage



CGD



NGPL



PPPL



LNG



LPG



RO

IMS Integrity Management

Submissions & tracking



Integrity management submissions
Online reporting for CGD, NGPL, PPPL networks



Performance tracking
Real-time monitoring and analytics

Incident Reporting & Analysis

Root-cause tracking



Report
Submit incident



Investigate
Root-cause analysis



Resolve
Corrective action

TPIA Audit Workflow

Third-party inspection



Empanelment & certification
Third-party inspection agency management



Man-days matrix
Audit duration guidelines

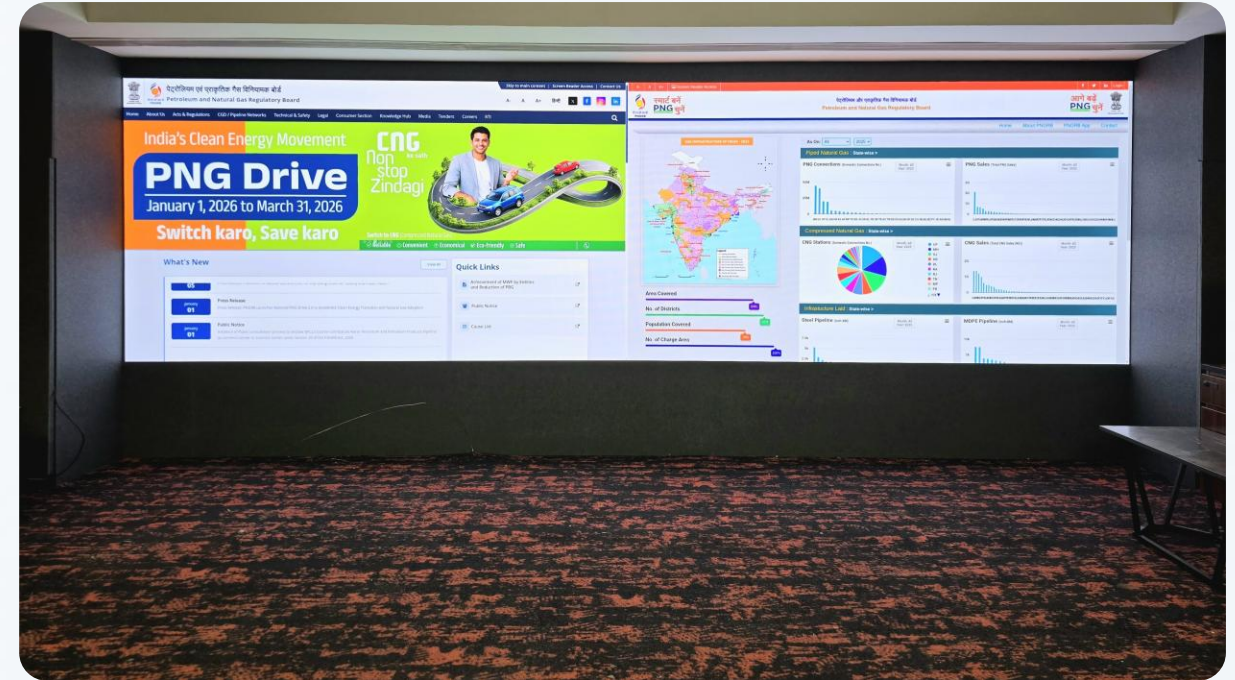
PNGRB has set up a centre at its headquarters with advanced video wall solution for centralized monitoring of the country-wide hydrocarbon infrastructure.

Core Purpose & Vision

To serve as the primary visual interface for NHIMS, supporting the “One Nation, One Gas Grid” vision. It is intended to enhance regulatory oversight, improve transparency in planning, and ease a more efficient management system for the downstream oil and gas sector.

Key features of the solution

- **Integrated View**: The wall provides an integrated display for viewing infrastructure map data layered with administrative boundaries, roads, etc. alongside other data such as portals, presentations, etc.
- **Multi-Source Display**: Multiple input sources (workstations, web URLs or direct inputs) in resizable windows can be displayed on the wall. Along with NHIMS, other sources such as Analytics, ePortal, Video Sources, etc. can be viewed simultaneously.
- **Collaborative Tools**: Features like screen scrapping allows the live wall view to be seen across the network via web browser and operators can share screen in real time.



Migration to NICNET Connectivity

NIC Guidelines · IP Schema Remapping · Firewall Configuration

SCOPE

- 1 NICNET Activation**
Activated on all PNGB PCs & peripherals
- 2 IP Schema Remapping**
NIC-prescribed address block assigned to all devices
- 3 Firewall Configuration**
Rules applied per NIC security policy guidelines

KEY BENEFITS

- G Gov Platform Integration**
Seamless access to NIC Mail, e-Office
— no VPN workarounds needed.
- S Enhanced Cyber Security**
NIC firewall rules, centralized SOC monitoring & full GoI policy compliance.
- R Reliability & Central Support**
NIC SLA-backed uptime, standardized config & centralized IT helpdesk.

Cybersecurity Guidelines and Digital Trust

Background:

- Draft Cyber Security Guidelines have been prepared by PNGRB for regulated entities in the petroleum and natural gas sector.
- The draft integrates CERT-In Directions 2022, NCIIPC Guidelines, NIST CSF 2.0, and National Cyber Security Policy 2013.
- Proposed to be embedded within PNGRB's T4S (Technical Standards & Specifications including Safety Standards) Regulations — making baseline cybersecurity standardized and auditable.
- Once embedded, all PNGRB-regulated entities across gas pipelines, midstream, refineries, CGD, and retail distribution will have a minimum baseline standard for cybersecurity.

 Governance & CISO • Board-approved Cyber Security Policy & Risk Plans annually • CISO & Alternate CISO (Indian nationals) within 90 days; report to CEO/MD • Cyber Security Committee: CISO chair + IT, OT, Risk, Legal, Ops — quarterly • 24x7 ISD with CERT-recognised staff; 10 person-days training/year for CISO	 Risk Assessment & CII • Annual cyber risk assessment per NIST CSF 2.0 + after major infra changes • Asset inventory: IT, OT (SCADA/DCS/PLC/RTU/IIoT) & vendor systems • CII assets identified & submitted to NCIIPC via sectoral CERT • Bi-annual VA; Critical/High remediated ≤30 days, Medium ≤90 days	 IT Security Controls • MFA for privileged accounts; RBAC least-privilege; access revoked ≤24 hrs • Next-gen firewalls + IPS; IT/OT/DMZ segmentation; ESP assessed every 6 months • TLS 1.2+ external comms; AES-256 at rest; EDR; patches ≤15 days; CIS hardening • SIEM real-time anomaly alerts; logs 180 days; annual pen test by CERT-In
 OT & Safety Systems • Air-gap OT (preferred); logical segregation requires CISO approval + Board notification • No internet to OT; remote access disabled by default; VPN + MFA, max 4-hr session • SIS/ESD/F&G: hard air-gap per IEC 62443 & T4S; cyber changes need safety impact assessment	 Supply Chain & Vendors • Pre-contract security assessment; verify ISO 27001 / IEC 62443 compliance • SBOM mandatory; track & remediate vulnerabilities throughout lifecycle • Cybersecurity clauses in ALL contracts — non-executable without them; FAT + SAT with CISO sign-off	 Incident Response & Audit • CIRT established; CCMP Board-approved ≤180 days; annual review • Incident reporting: CERT-In ≤6 hrs · NCIIPC ≤12 hrs · PNGRB ≤24 hrs • BCP/DR: RTO/RPO; quarterly tabletop + annual DR drills; annual audit by CERT-In empanelled auditors

→ Above technical requirements proposed for embedding into PNGRB T4S Regulations | Pathway: Draft → Stakeholder Consultation → Gazette Notification → T4S Amendment → Mandatory Compliance

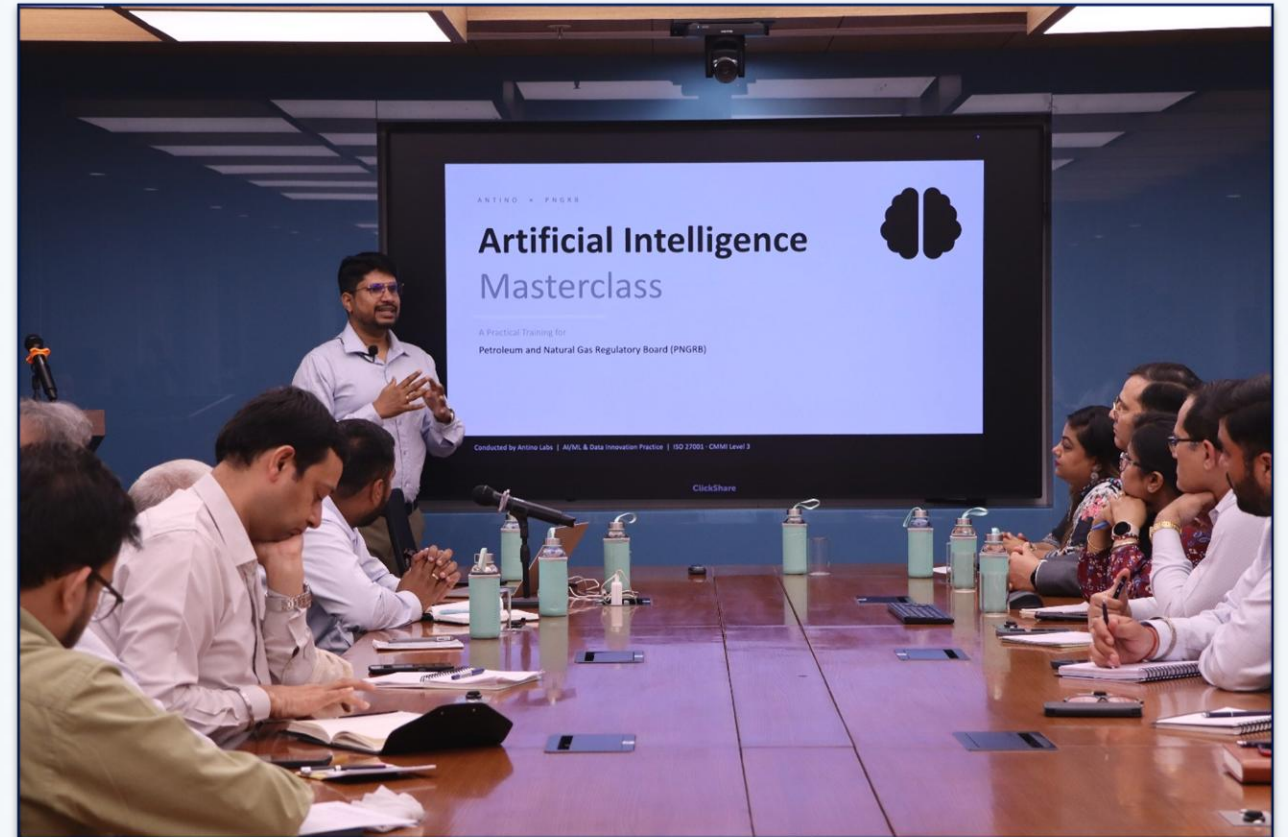


Capability Building in AI

Enhanced Efficiency in Routine Work

Improved Decision-Making & Analysis

Practical & Responsible AI Adoption





Emerging Focus Areas & Future Roadmap

Tariff Computation & Determination System An automated tool for calculating and publishing tariffs for natural gas pipelines as per PNGRB regulations — reducing manual effort and improving transparency for entities and investors. Integration with the e-Portal for submission and review.

Entity API Integration Programme A structured onboarding programme to bring entities onto automated API-based data feeds, reducing manual data submission and improving data quality and timeliness.

Unified Regulatory Dashboard A single internal dashboard aggregating data across all divisions — authorisation status, compliance submissions, incident reports, legal case timelines — giving senior leadership a real-time regulatory pulse without switching systems.

AI-Powered Regulatory Document Analyser Using LLMs to automatically parse, summarise and flag relevant provisions from PNGRB orders, regulations, and HLEC recommendations — useful for Legal and Technical divisions handling large volumes of text.

Chatbot for Consumer & Entity Support An assistant on the PNGRB website and IGMS portal that can answer common queries about regulations, application status, grievance status, and procedures — reducing officer workload and improving stakeholder experience.

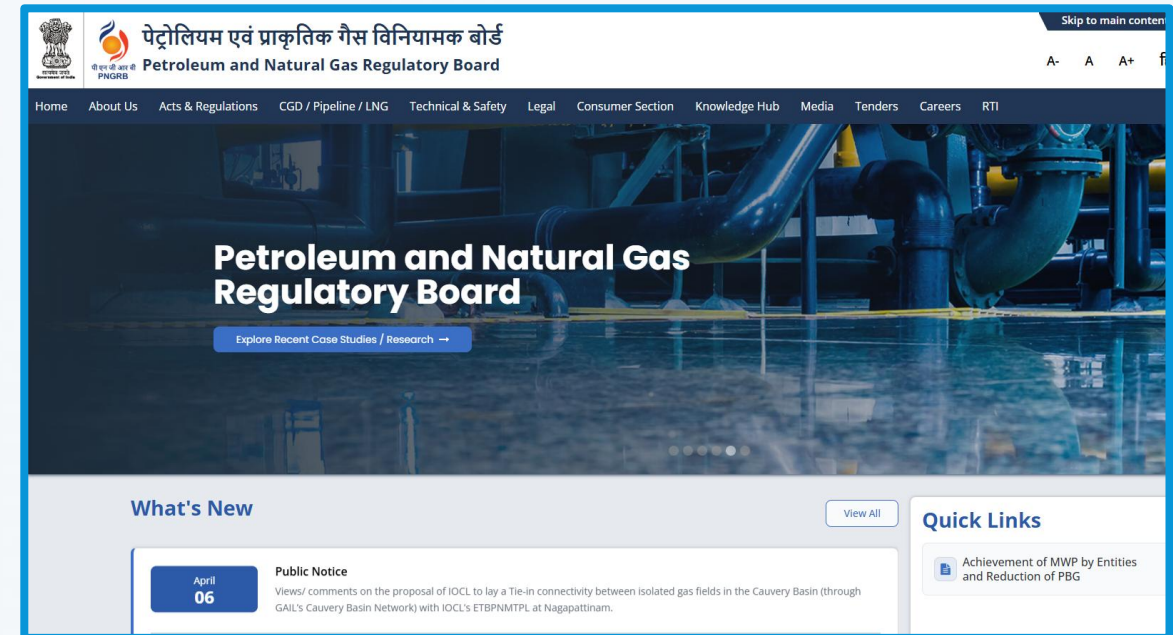
Cybersecurity Guidelines for Regulated Entities Converting the draft cybersecurity guidelines into formal regulations — a step towards enhanced cybersecurity for the industry. Sets a baseline for all 307+ CGD entities and pipeline operators.

PNGRB Data Bank Modernisation Migrating the existing static Data Bank to a dynamic, searchable, downloadable database with structured MIS reports. Publishing non-sensitive aggregated PNGRB data as open datasets — supporting the Govt's National Data Governance policy.

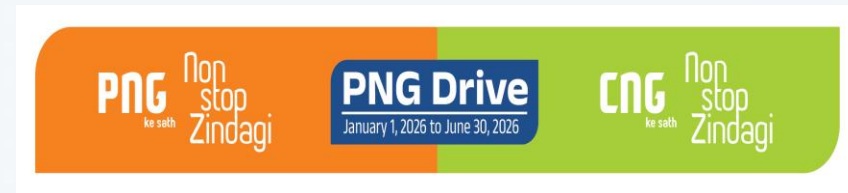
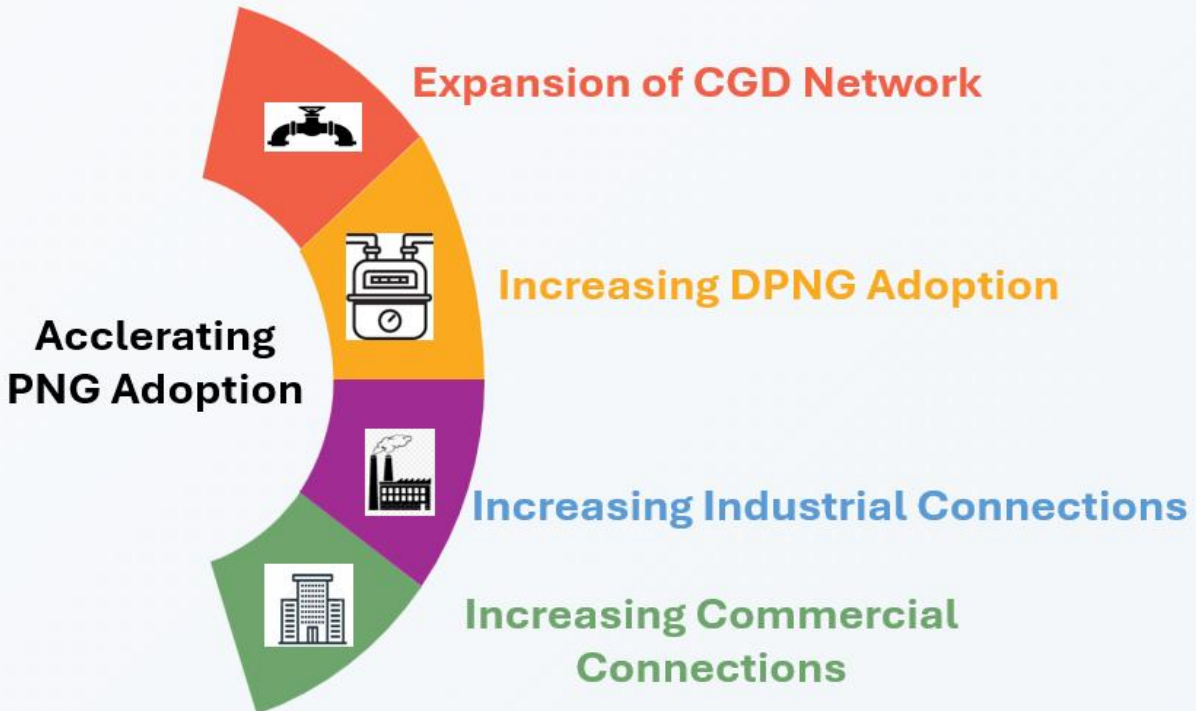
PNGRB Website:

Core Platform for Interaction

- ✓ Single-window interface for consumers and entities
- ✓ Easy access to services, information, and updates
- ✓ Direct communication channel between stakeholders
- ✓ Real-time updates ensuring transparency and clarity
- ✓ User-friendly design enabling smooth navigation and engagement



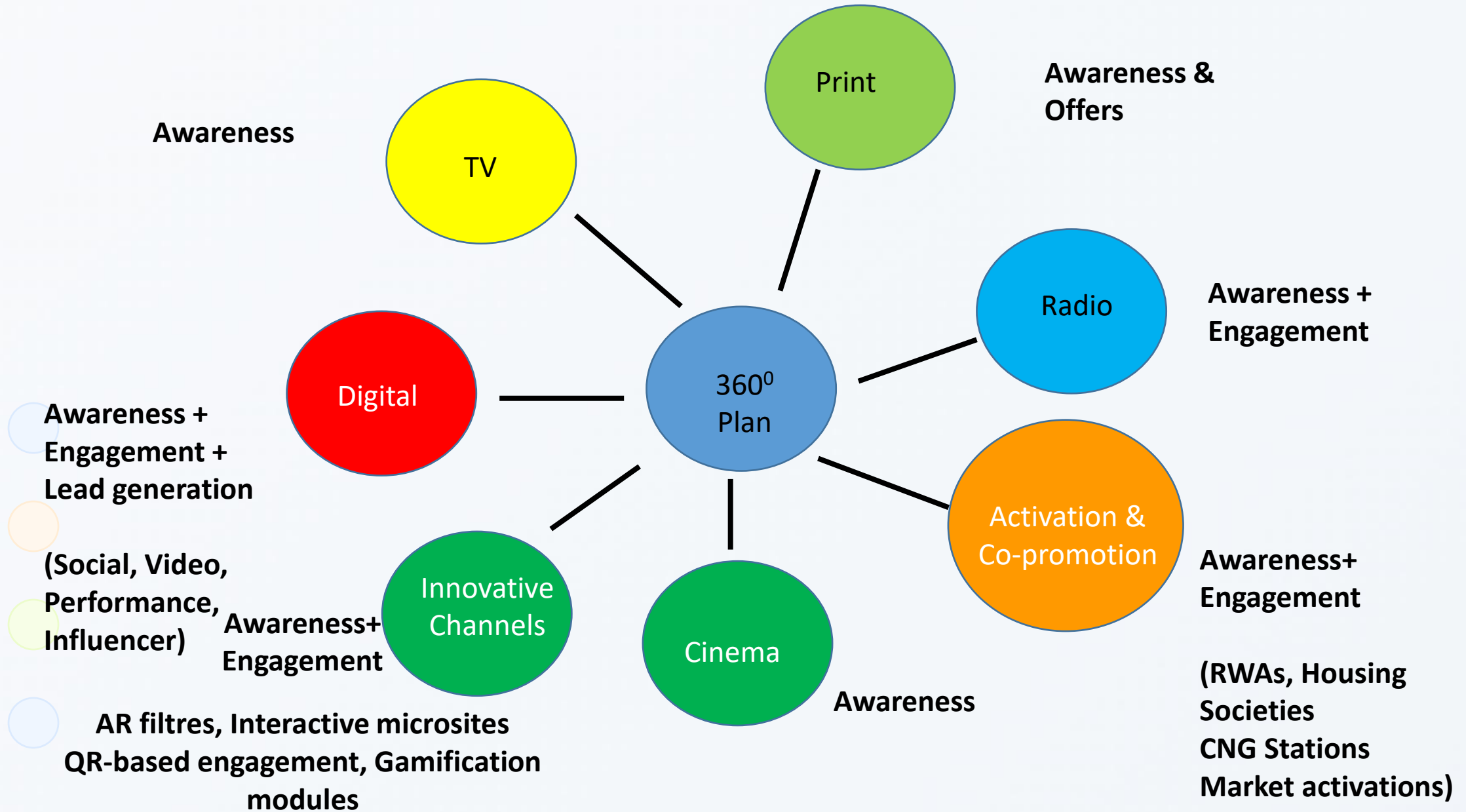
National PNG Drive 2.0: Strategic Communication



-  Consumer-centric outreach promoting awareness, safety, and informed choice
-  Amplified visibility through multi-channel campaigns and on-ground activations
-  Driving engagement to conversion with measurable increase in leads and adoption
-  Enabling value exchange: attractive consumer offers driven by entities

National PNG Drive 2.0

360° Degree execution of campaign





Thank you!