



**BEST PRACTICES AND INNOVATIONS
JOURNEY TO CGD EXCELLENCE**



THINK GAS

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Senior Vice President
Operations & Maintenance Head**

AGENDA

➤ Strategy & Network Overview

- THINK Gas — CGD Presence Across India
- Hub & Spoke Hybrid Model for Faster Network Expansion

➤ Digital Transformation & Asset Intelligence

- Best-in-Class Integrated Digital Architecture
- Quality Construction Monitoring (QCM)
- GIS Accuracy & Asset Intelligence

➤ Gas Flow Integrity & Leak Prevention

- Early Detection of Pipeline Damage
- Remote Operated Sectionalizing Valves
- Odorant Enclosure & Monitoring

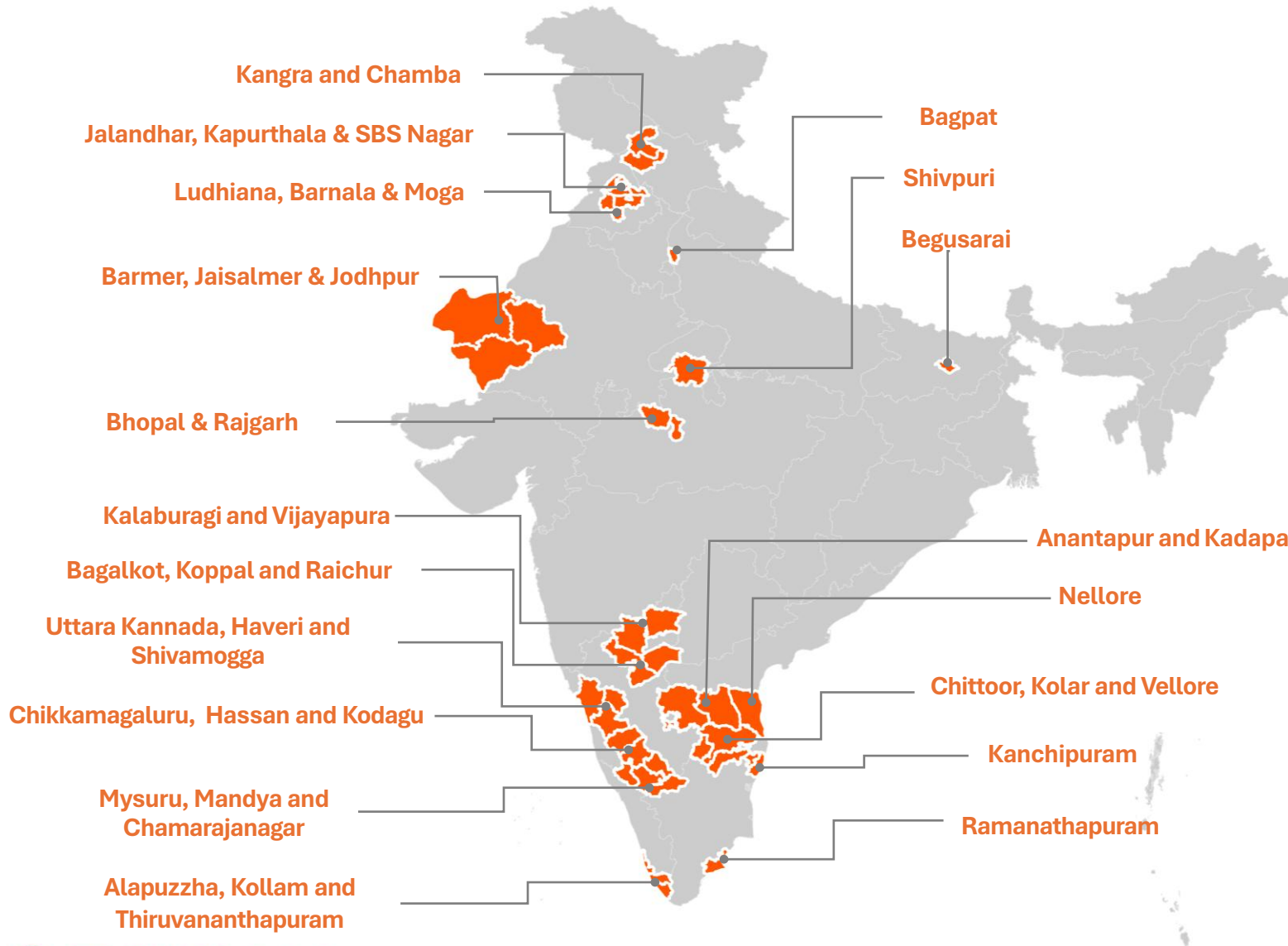
➤ Operational Safety Innovations

- Geofence — Excavator Proximity Detection System
- Intelligent Plant Maintenance with Real-Time Integration
- Flow-Based CBG Blending

➤ Operational Efficiency & Customer Focus

- Logistics Management System (LMS)
- Driver Behavior Management System
- Smart Prepaid Metering & Measurement Accuracy
- Customer Relationship Management (CRM)

THINK GAS – OVERVIEW OF CITY GAS DISTRIBUTION (CGD) PRESENCE IN INDIA



3,24,000 +Sq. Kms. (Almost equivalent to size of Germany)



~10% of India's Land Area



10 States



49 Districts



~180 Mn Population coverage

THINK GAS – LARGEST 100% FDI IN GREENFIELD CITY GAS DISTRIBUTION



One of the Largest Infrastructure Funds Globally (36bn AUM)

~1.5bn MMBtu LNG processing



60+ countries



60+ portfolio companies



A Global Downstream LNG Infrastructure Platform

35 MMTPA of planned capacity



10+ LNG Terminals & Logistics



City Gas Distribution



One of the World's Leading Gas Utilities Player

115+ years in existence



~7mn households



7,000+ km pipeline



Japanese trading and business investment company

76bn Assets Under Management

60+ countries



50+ SBUs in Energy Transformation



Japanese Infrastructure Fund Co-Sponsored by the Government

30+ projects under development in the Asian subcontinent



Japanese logistics company specializing in supply chains & industrial services

145+ years in existence, with a presence in 12 countries



Expanding its presence in India through strategic investments

THINK GAS – ON AN ACCELERATED PATH - FASTEST GROWING CGD ENTITY

~USD 1 Billion invested in CGD Sector in Last 4 years

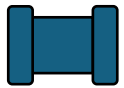
INFRASTRUCTURE



19 LCNG Stations

22 City Gate Stations

Largest LCNG network.
25 LCNG stations in next 2 Years



11,090+ Kms MPDE

1,956+ Kms Steel

Pipelines Laid



512+

CNG Stations

CUSTOMERS



0.57 Mn

HH Connected



1233+

I&C Customers



2.0 MMSCMD

Daily Sales Volume

COMMUNITY



25,000+

Employment Generated



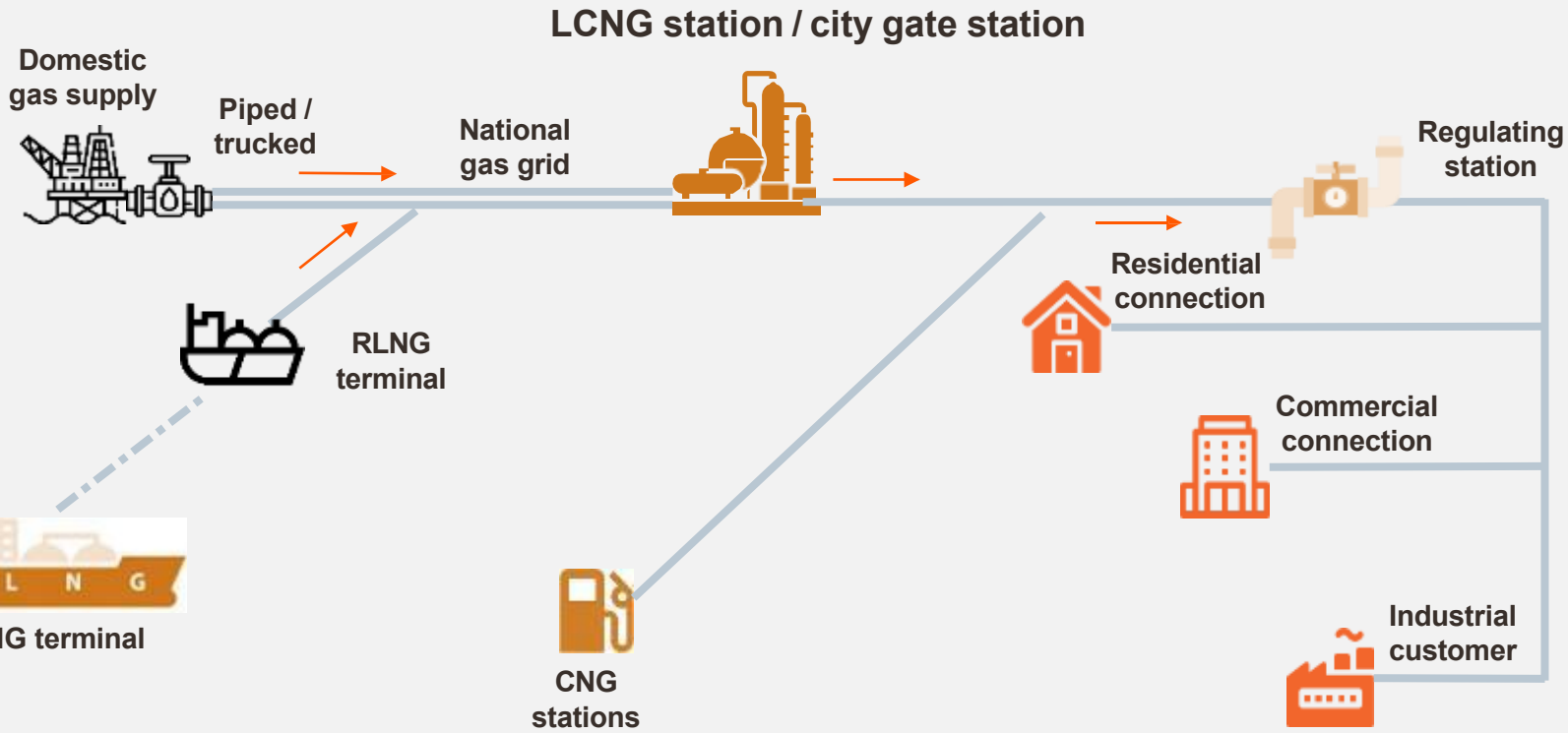
6500+ Mt

CBG Procurement

~100 MT/day in 5 Years
Strengthening Green Credentials

The Company has witnessed M-O-M sales growth of **10%** in last 3 years to reach the milestone of **~2.0 MMSCMD**.

HUB & SPOKE - HYBRID MODEL FOR FASTER REACH



Concept : Hub & Spoke model

- ⚡ **LCNG Infra enables Immediate connectivity** to non-pipeline areas
- 🔄 **LCNG Station acts as alternate to CGS** for primary/secondary networks for CGD pipelines
- 🚰 **Future-ready for LNG dispensing**
- 📍 **Flexibility** to connect with CGS/STPL when available
- 🔗 **Ideal for large GAs** with concentrated demand pockets
- 🚀 **Enables faster customer reach**

Benefits

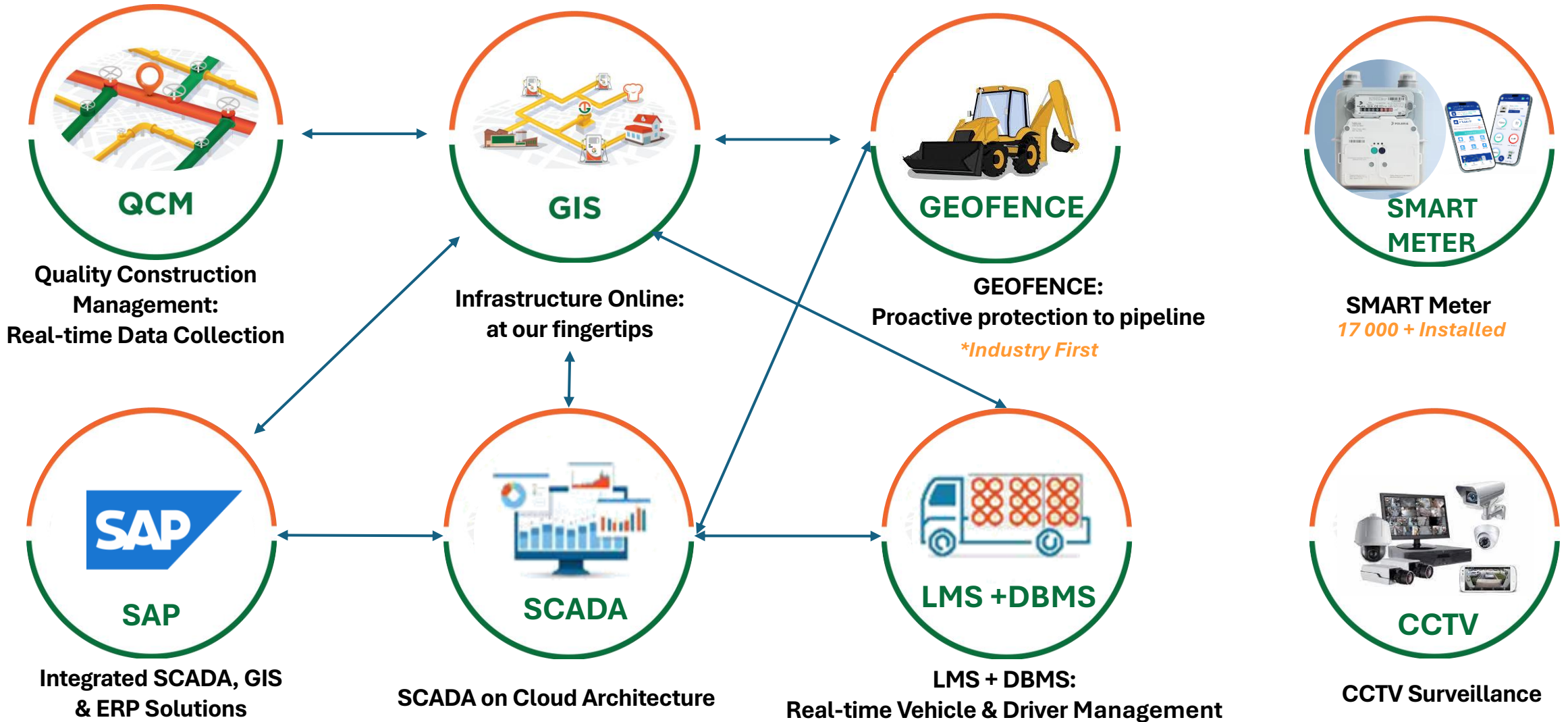
Hub & Spoke model of gas distribution has been adopted to fast-track natural gas access to various Geographical Areas with 19 LCNG stations already been commissioned

LARGEST “LNG FOR TRANSPORT” CAPABLE LCNG NETWORK

- **THINK Gas – LCNG Network**
 - Planned **25 LCNG stations**
 - **19 stations already operational**
 - Network also capable of **LNG dispensing for transport**
- **LNG Dispensing – Net Metering Facility**
 - LNG dispensing started at **3 LCNG stations**
 - **Bagroda** – Bhopal
 - **Vallam** – Chengalpattu
 - **Raptadu** – Anantapur
- **LNG Transport Through Virtual Pipeline**
 - LNG transportation enabled through a robust virtual pipeline network
 - Fleet of 72 LNG tankers ensuring reliable supply
 - Offtake from major LNG terminals: PLL Dahej, PLL Kochi, IOCL Ennore, GAIL Dabhol, HPCL Chhara
 - Average distance covered per tanker: **~300 km per day**



DEPLOYING THE BEST-IN CLASS INTEGRATED DIGITAL ARCHITECTURE



QUALITY CONSTRUCTION MONITORING (QCM)

- **Real-time digital monitoring platform** enabling end-to-end traceability of construction activities
 - **Smart asset lifecycle & quality management** with compliance, inspections, and document digitization
 - **High-accuracy field data capture** (~80 cm below ground) using DGPS/GNSS with GIS integration
 - **Automated As-Built generation** and centralized visualization through QCM web portal
 - **Mobile app enabled data collection** for seamless field uploads and coordination
 - **Improved audit readiness & faster decision-making** with reliable, real-time insights
- Transitioning to **Quality Asset Management (QAM)**, an in-house Think Gas platform that includes all QCM features plus enhanced capabilities, eliminating third-party dependency and optimizing costs.

Hardware

DGPS DNSS Receiver



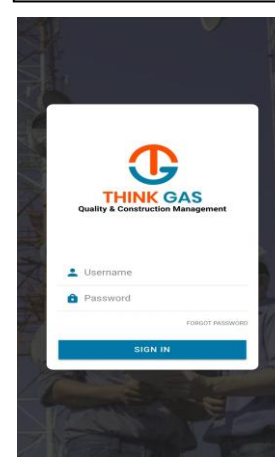
Data

Data Collection Accuracy - Below 80cm

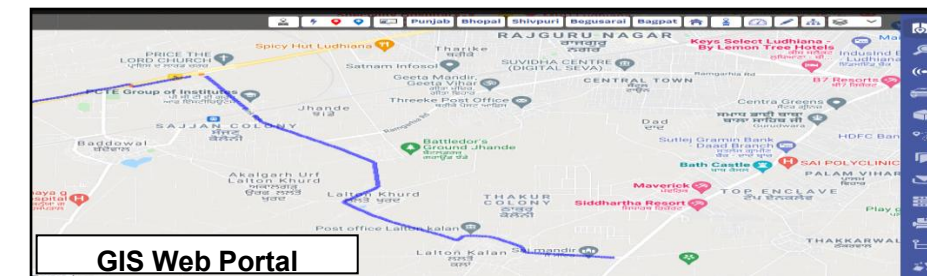


Software

QAM Mobile App

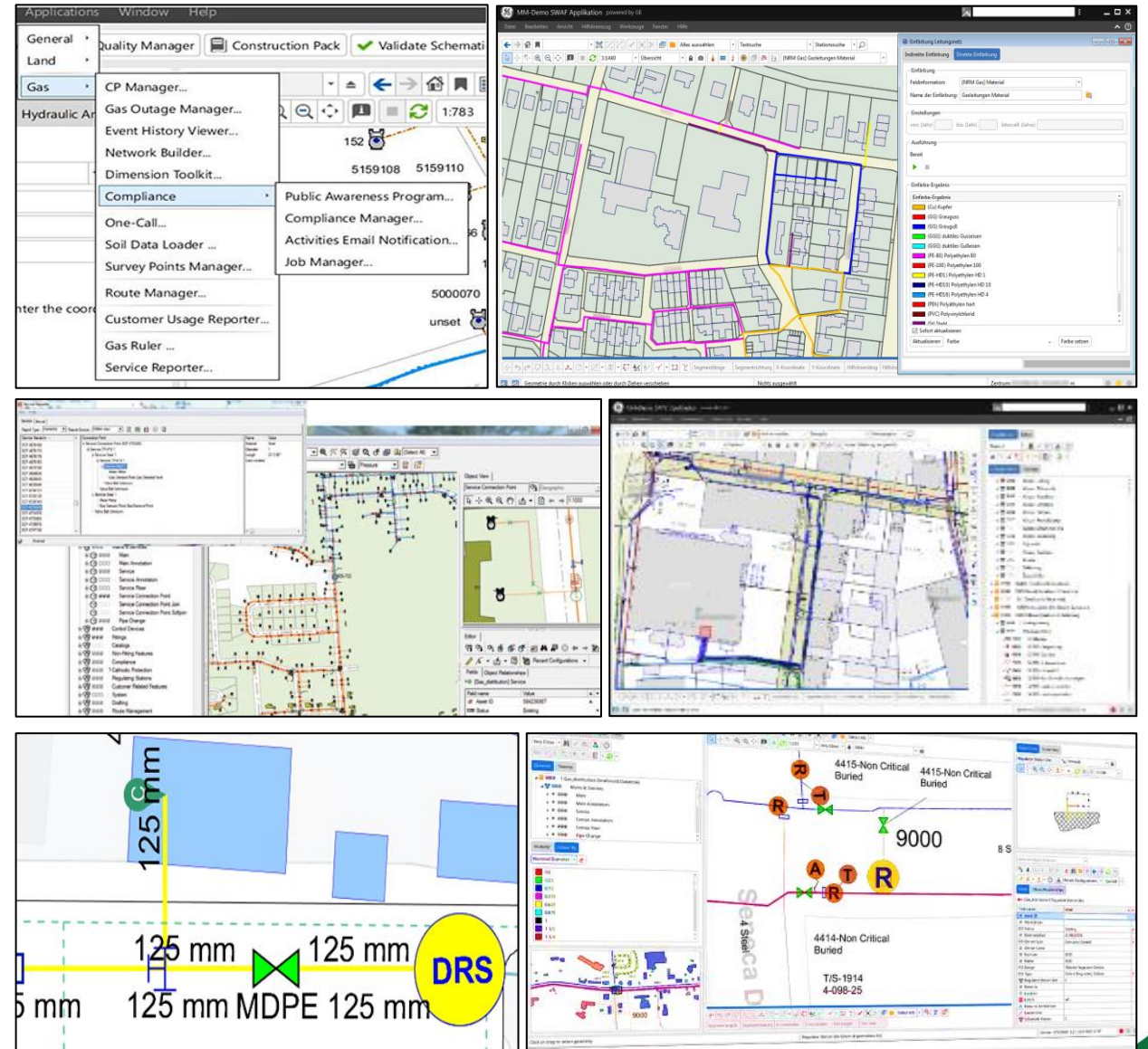


Data Visualization

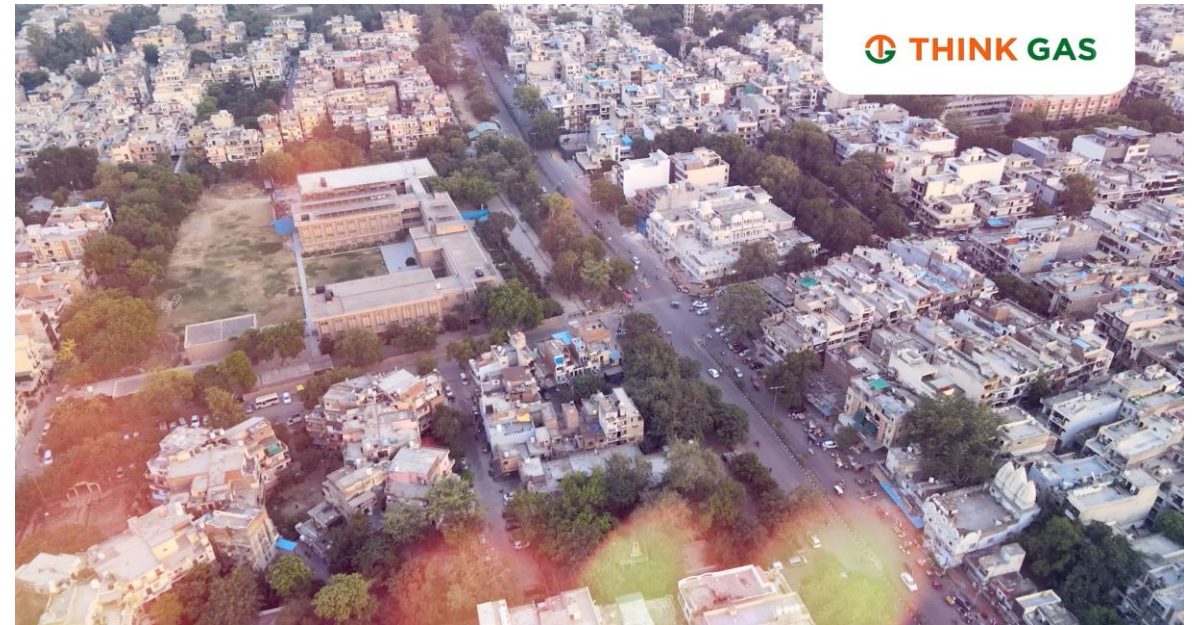
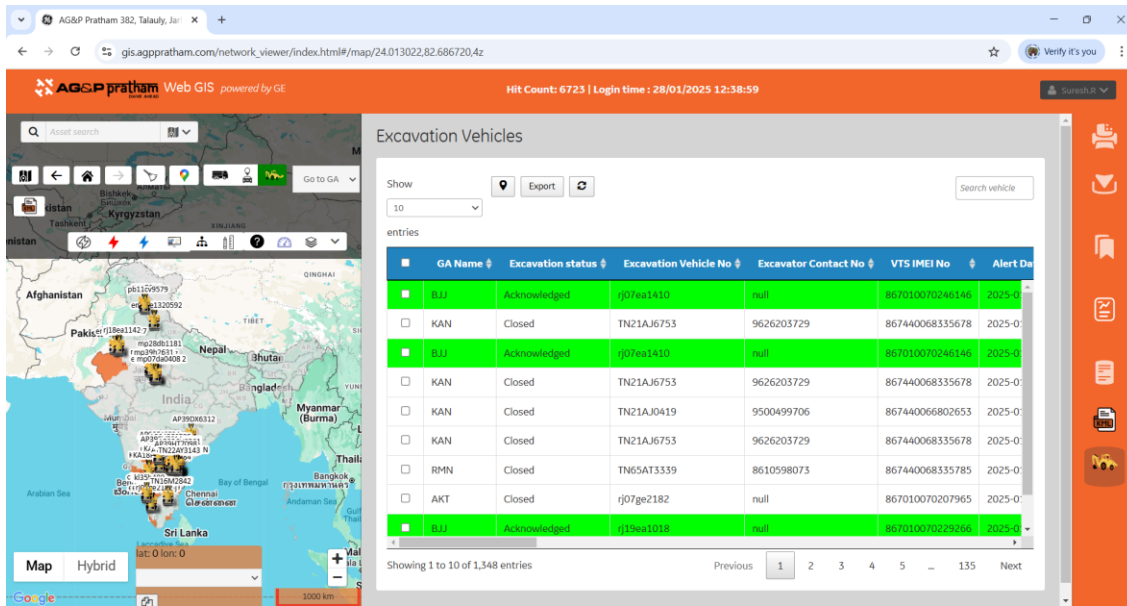


GIS FEATURES

- **Gas Outage Management** — Identify affected customers and isolation valves, with automated SMS alerts for planned and unplanned outages
- **Service Reporter** — Analyze downstream hierarchy from DRS to view connected pipelines, assets, and customers
- **Network Trace Analysis** — Trace upstream and downstream network to verify integrity and generate detailed reports
- **Network Schematic Visualization** — Convert complex GIS network into single-line diagrams for clear operational understanding
- **Line Pack Analysis** — Calculate available gas volume in charged pipelines for planning and emergency readiness

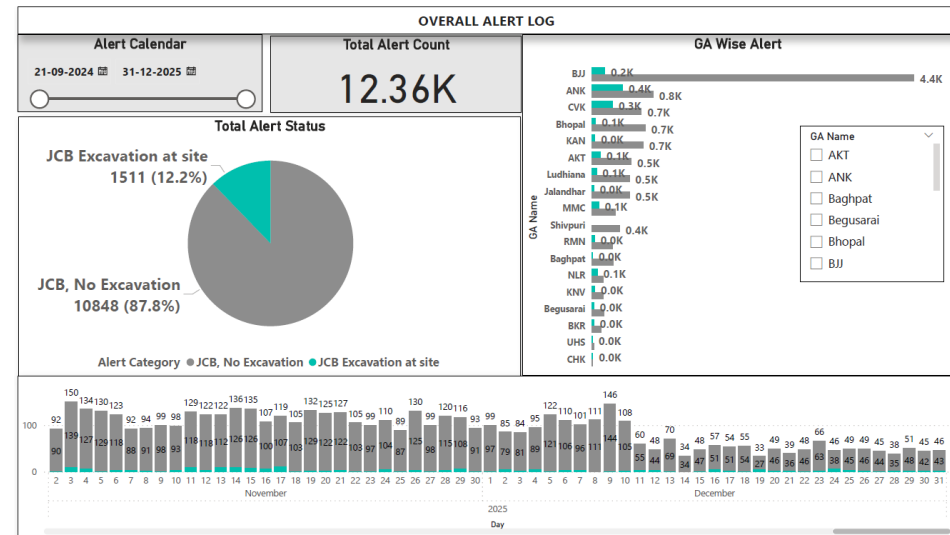


OPERATIONAL SAFETY INNOVATIONS : GEOFENCE (EXCAVATOR PROXIMITY DETECTION SYSTEM)



Distinctive Features

- **Virtual Fence:** 5m automated boundary around laid pipeline
- **Real-Time Tracking:** GPS monitoring of excavation vehicles
- **Geofence Alerts:** Alarm, Email, WhatsApp & SMS alerts if vehicle stays >5 mins (with navigation support)
- **Damage Prevention:** Alerts Control Centre & Field Team to prevent third-party damage
- **VTS Device :** 385+ VTS devices installed across geographical areas

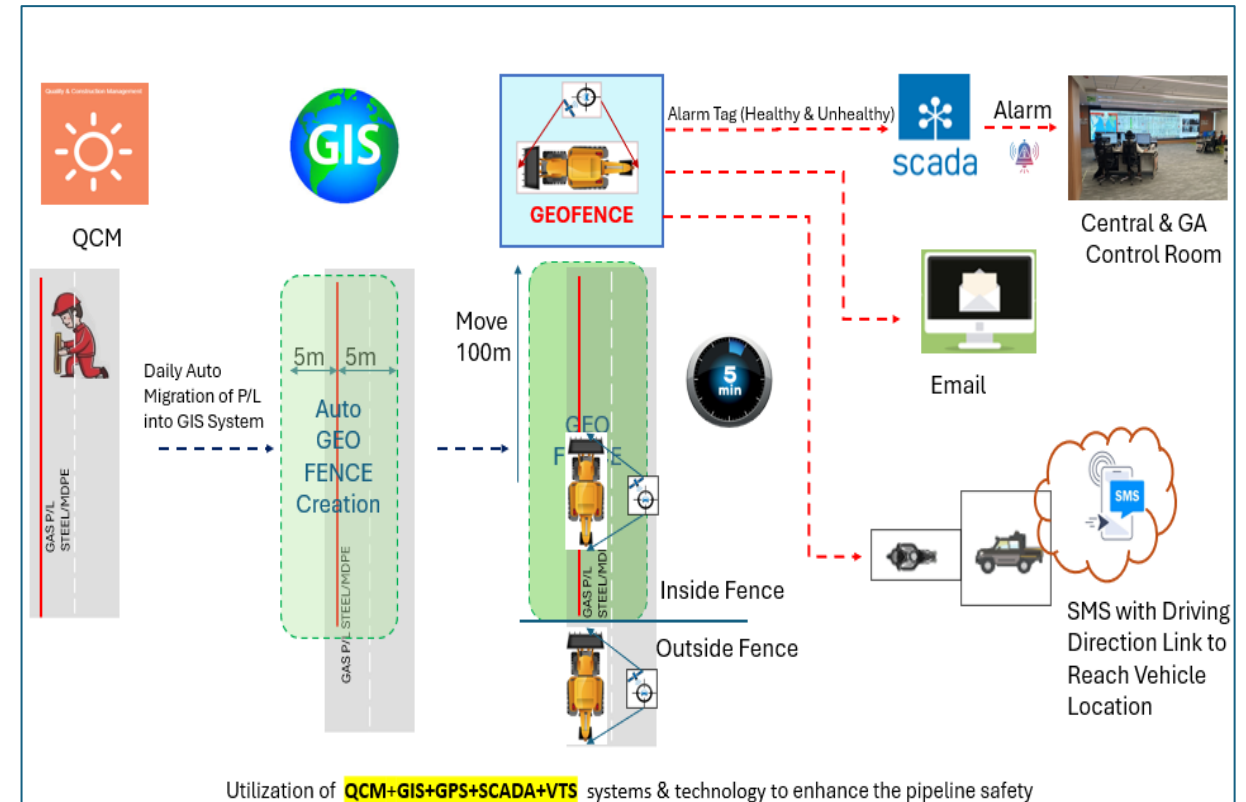


OPERATIONAL SAFETY INNOVATIONS : GEOFENCE (EXCAVATOR PROXIMITY DETECTION SYSTEM)

Support Required

- **Policy Enablement for OEM Vehicle Tracking System (VTS) Integration**

- Most new-generation earth-moving equipment (e.g., JCB, Hitachi) are factory-fitted with GPS/VTS or capable of transmitting real-time operational data
- Opportunity to leverage OEM platforms for monitoring activities near gas pipeline corridors
- Proposal to enable standardized sharing of VTS data with authorized CGD entities (e.g., THINK Gas) strictly for safety and asset protection
- THINK Gas requests PNGRB's support to enable OEM VTS data access for pipeline safety, aligned with public interest and infrastructure protection mandates.



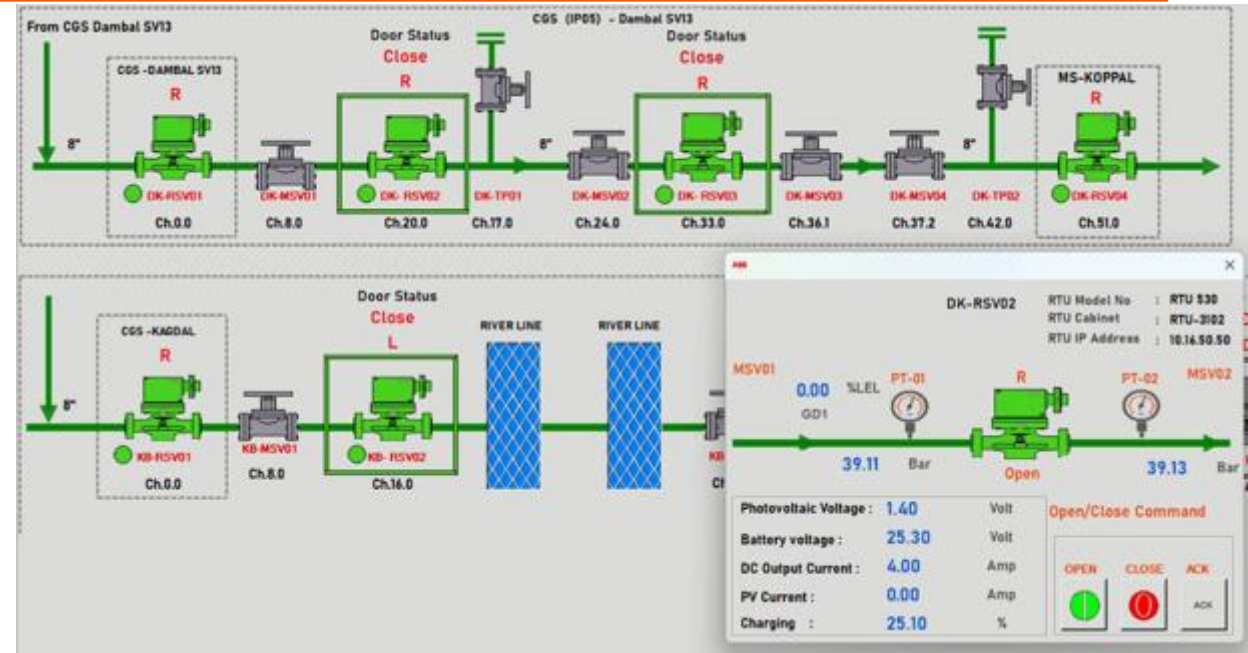
STATE OF THE ART CONTROL CENTRES

- **Safe, reliable & efficient operations** enabled through centralized monitoring and control
- **24×7 real-time SCADA supervision** with decision support for coordinated operations
- **Remote operations, emergency handling & alarm management** for rapid response and safety
- **Planning, scheduling, logistics tracking & CCTV surveillance** for operational visibility
- **Dual Control Centres (Delhi & Chennai)** operating in redundancy with mutual backup during contingencies
- **Regional / GA control centers** ensuring dedicated local monitoring and operational support



GAS FLOW INTEGRITY & LEAK PREVENTION : REMOTE OPERATED SECTIONALIZING VALVES & SMART IMPLEMENTATION

- **SCADA-integrated Remote Operated Valves (ROVs)** installed at strategic locations to monitor critical pipeline parameters and enable remote operation from the control room
- **Rapid isolation capability during emergencies** allowing quick shutdown of affected pipeline sections for effective response
- **Reduced gas loss and enhanced public safety** strengthening overall safety and emergency preparedness

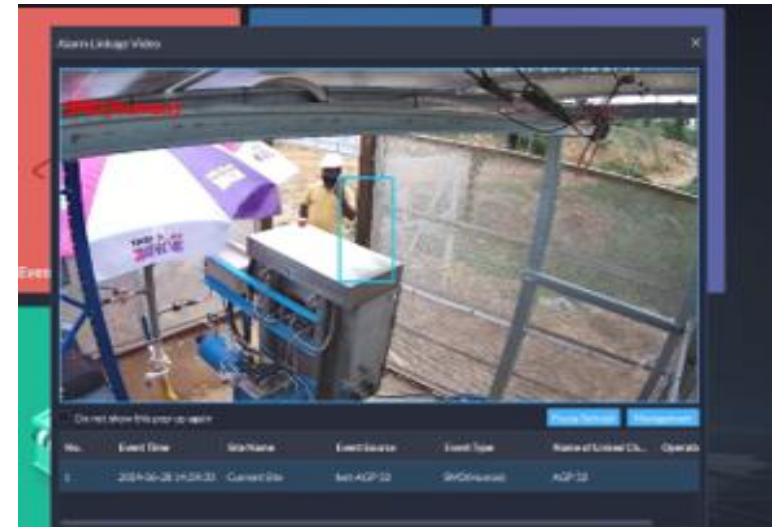


Security Challenge — Equipment Theft Risk

- Remote installations vulnerable to tampering and theft.
- Risk of loss of critical safety equipment.

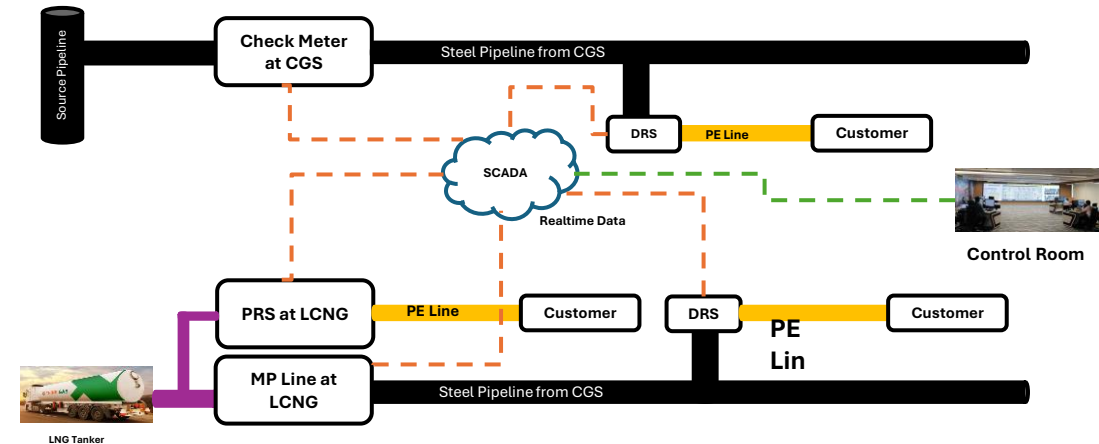
Mitigation — AI Based Surveillance

- **AI cameras and intrusion buzzers installed at valve locations** to enhance site security and monitoring
- **Detect unauthorized entry within valve areas** enabling early identification of potential threats
- **Intruder image capture with real-time alerts to control room** allowing immediate response and preventive action



GAS FLOW INTEGRITY & LEAK PREVENTION : EARLY DETECTION OF PIPELINE DAMAGE

- **High-flow threshold alarms based on flow trends** — Detect major leaks or line damage scenarios
- **Implementation of df/dt (rate of change of flow) monitoring** — Enables early line damage detection by identifying abnormal behavior against historical patterns
- **Detection below conventional alarm limits** — Captures sudden flow changes even without threshold breaches
- **Early alerts for operator review** — Enable timely intervention and response



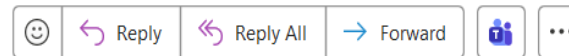
$$df/dt = (Flow(t) - Flow(t-\Delta t)) / \Delta t$$



SCADAverage alarm notification 1479



TG SCADA
To Kanagala Ravindra Kumar



Fri 30-01-2026 06:04

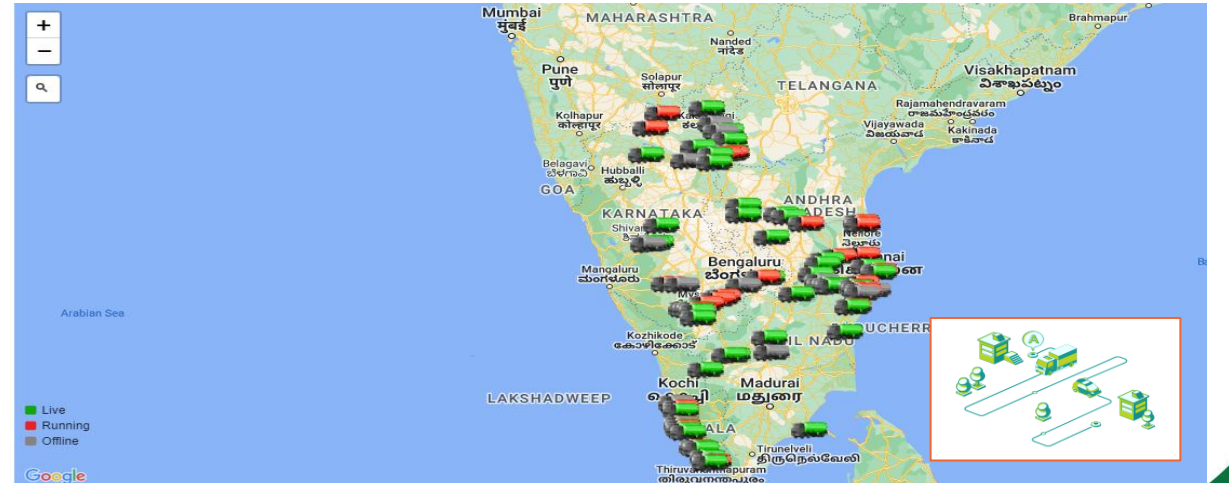
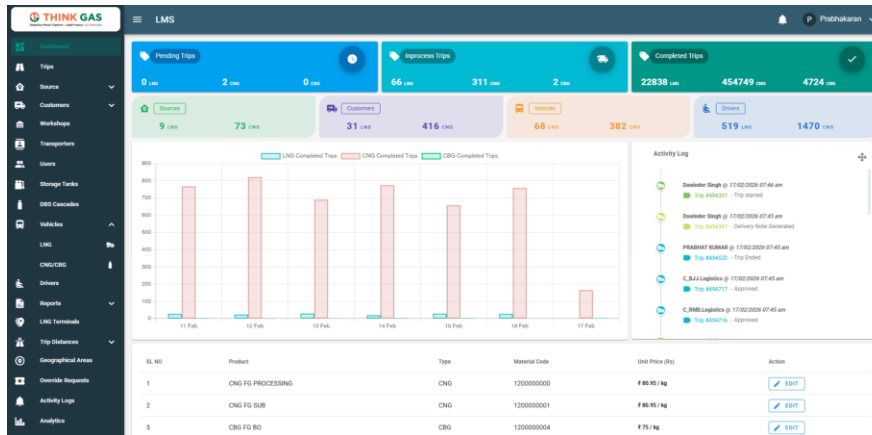
Start your reply all with: [Thank you!](#) [Thank you very much!](#) [What does this mean?](#) [Feedback](#)

Abnormal Flow:- SCADA Tag:KAN-LCNG-LCNGSC-C1-VR-ABNORMAL-FLOW-PRS-SKID-02 (LCNG Seemencherry PRS Skid) VALUE:5.3
Time:30/01/2026 06:04:10

OPERATIONAL EFFICIENCY & LOGISTICS OPTIMIZATION: LOGISTIC MANAGEMENT SYSTEM

- **SCADA-based stock monitoring** using consumption trends and sales patterns to prevent dry-outs
- **Milk Run vehicle planning** to optimize routing, utilization, and logistics efficiency
- **VTS integration** for real-time vehicle tracking and better resource allocation
- **Customer notifications & ETA alerts** sent automatically when vehicles are dispatched, including tracking links
- **24x7 control Centre oversight** for continuous monitoring and tracking.

Nellore GA													
SN	Location Name	SUCTION PRSR	HIGH BANK PRSR	MED BANK PRSR	LOW BANK PRSR	COMP STATUS	POWER STATUS	LCV STATUS	PREV DAY SALE	TODAY SALE	TODAY UNLOAD QTY	DRYOUT STATUS	
1	Sree Srinivasa Fuel (SOP)	162.12	224.70	221.76	213.41	Stopped	Fail	Disconnected	660.75	461.63	73.56	Normal	
2	Surya Petrol Plaza (SOP)	162.60	199.60	163.00	162.90	Stopped	Normal	Disconnected	1643.80	761.93	681.50	Normal	
3	Sujit Fuels IDCL (SUN)	112.57	230.87	233.38	227.69	Stopped	Normal	Disconnected	507.45	287.05	226.69	Normal	
4	Choudhary Brothers (IDT)	69.53	215.51	214.09	215.74	Running	Normal	Disconnected	660.75	461.63	286.81	Normal	
5	Gourishanker (IDT)	149.93	199.45	169.13	150.26	Stopped	Normal	Disconnected	1075.53	498.94	304.88	Normal	
6	Balaji Petro Plaza-BPCL (SOP)	98.89	224.23	98.38	98.94	Stopped	Normal	Disconnected	1176.19	495.23	309.67	Dryout Reaching	
7	DS Naidu (SOP)	28.80	208.90	208.90	208.70	Running	Normal	Connected	1176.19	495.23	670.13	Normal	
8	Sri Vaari HPCL RO (IDT)	153.60	222.58	122.80	110.43	Stopped	Normal	Disconnected	458.50	210.66	246.56	Normal	
9	K Mohan Company (IDT)	194.13	194.18	169.16	163.96	Stopped	Normal	Disconnected	685.67	545.00	80.19	Normal	
10	AP Star Filling Station (IDT)	158.38	193.40	157.71	106.42	Stopped	Normal	Disconnected	916.26	797.73	221.25	Normal	
11	Purva Fuels (END)	196.38	218.57	196.44	196.37	Stopped	Normal	Disconnected	133.20	137.08	246.34	Normal	
12	Sambavi Oil Filling Station (END)	171.30	229.04	173.82	168.83	Stopped	Normal	Disconnected	302.01	201.55	293.34	Normal	
13	Jaganatham Filling station (SOP)	36.70	132.30	30.60	30.60	Stopped	Normal	Disconnected	457.53	302.19	139.26	Dryout	
14	Subashini Filling station (END)	197.08	222.95	194.86	194.45	Stopped	Normal	Disconnected	427.49	216.72	937.56	Normal	
15	Siri Filling Station BPCL (SUN)	102.60	220.56	206.32	206.71	Stopped	Normal	Disconnected	552.20	814.73	176.02	Normal	
16	Siva Filling Station(RAS)	137.77	164.73	180.12	135.85	Stopped	Disconnected	Disconnected	814.73	773.05	16.38	Normal	
17	NELLORE DBS (SOP)	140.40	201.40	139.50	139.50	Running	Normal	Connected	1643.80	761.93	361.38	Normal	
18	JK Filling Station (SOP)	23.30	225.45	209.68	190.97	Stopped	Normal	Disconnected	685.67	545.00	551.77	Normal	



OPERATIONAL EFFICIENCY & LOGISTICS OPTIMIZATION: DRIVER BEHAVIOUR MANAGEMENT SYSTEM









- **Driver Behavior Monitoring System** is implemented to continuously observe driver actions during vehicle operation, including driving, parking, loading, and unloading.
- Its primary objective is to **promote safe practices, encourage positive driving behavior, and strengthen overall safety culture.**

360° view across the vehicle



OPERATIONAL EFFICIENCY & LOGISTICS OPTIMIZATION: DRIVER BEHAVIOUR MANAGEMENT SYSTEM

AI Camera Alerts:

-  **Fatigue Detection** – Eye blinking & yawning alerts drowsiness.
-  **Seat Belt Alert** – Ensures driver follows safety requirements.
-  **Mobile Usage Detection** – Prevents distracted driving.
-  **Unauthorized Driver Alert** - Detects unapproved access.
-  **Driver Behavior & Vigilance Monitoring** - Promotes safe driving.
-  **Recorded footage for incident investigation** -Provides reliable video.
-  **Unauthorized Parking Alert** — vehicle remains stationary for more than 10 minutes at an unauthorized location, an event is triggered
-  **Driver Visibility Alert** — If the driver is not visible due to obstruction or any other reason, an event is triggered

Operational Benefits

- **Video footage serves as evidence** in case of road incidents, supporting investigations and insurance processes
- **Helps address queries from authorities** and avoid unnecessary vehicle detention during checks
- **SOS button with driver** — Enables immediate emergency alert to control centre for quick support



GAS FLOW INTEGRITY & LEAK PREVENTION : ODORANT ENCLOSURE & MONITORING

• Operational Challenges

- Odorant handling, storage, and refilling may cause **localized vapor release**.
- Results in:
 - Occupational discomfort
 - Public nuisance
 - Environmental concerns

• Mitigation – Odorant Neutralizer System (ONS)

- Introduction of an **Odorant Neutralizer System (ONS)** as an engineered safety control
- Installed at:
 - CGS (City Gate Stations)
 - LCNG facilities
- Enhances compliance with **Safety, Environmental, and Occupational Health standards**



OPERATIONAL SAFETY INNOVATIONS: INTELEGENT PLANT MAINTENANCE WITH REAL-TIME DATA INTEGRATION

Available For Android, iOS & Web











TIPM – THINK Gas Intelligent Plant Maintenance, a mobile app and web portal designed exclusively for the O&M team.

TIPM provides a **user-friendly interface** and enables maintenance engineers (on-roll, contractual, and contractors) and **managers** to perform maintenance activities by **leveraging SAP on mobile**—without requiring an SAP ID.



THINK GAS Intelligent Plant Maintenance

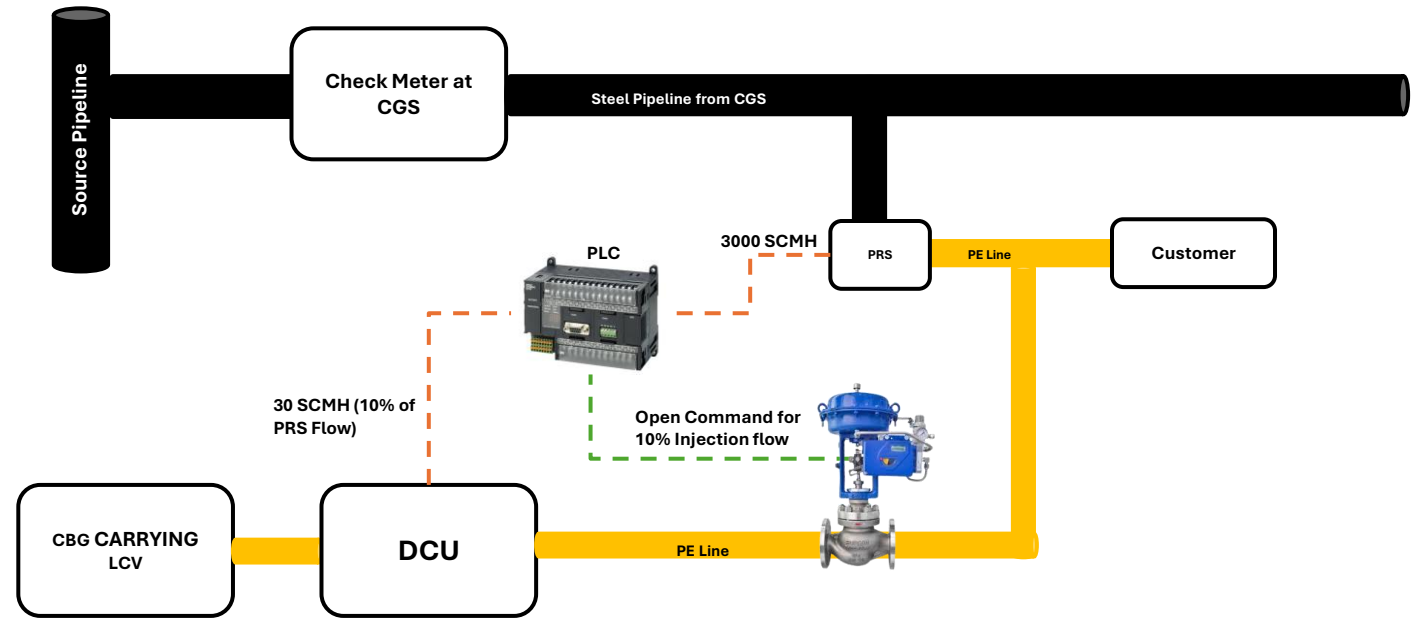
Safe, Reliable, Compliant & Efficient Operations

-  **Automated PM Order Generation via SCADA–SAP Integration** – Measuring counter readings are captured in real time from SCADA and automatically trigger preventive maintenance orders in SAP
-  **Mobile Work Order Management** – Create & close notifications/orders with on-the-go photo uploads
-  **Digital Checklists Execution** – Preventive & General Maintenance, PNG Service Notifications, Store Preservation & AMC Orders assigned & completed digitally
-  **E-Sign Review & Approval** – Maintenance & PNG checklists approved via mobile app
-  **Service Charge Posting (Tariff Card)** – Seamlessly integrated with ISU & CRM
-  **Domestic PNG AMC via TIPM (SAP)** – Auto job scheduling, technician assignment & OTP-based job closure
-  **Real-Time Stock Visibility** – Check warehouse availability & create reservations instantly
-  **TIPM: One-Stop Plant Maintenance Platform** – Future-ready with GPS tagging & barcode-based automated readings

OPERATIONAL SAFETY INNOVATIONS : FLOW-BASED CBG BLENDING

Quality Assurance & Monitoring

- CBG supplier Gas Chromatograph (GC) / Gas Analyzer (GA) integrated with Think Gas SCADA for real-time quality monitoring
- Live gas composition and quality parameters telemetered to the control room
- Automatic alerts generated for any deviation in gas quality
- Operators continuously monitor quality to ensure compliance.



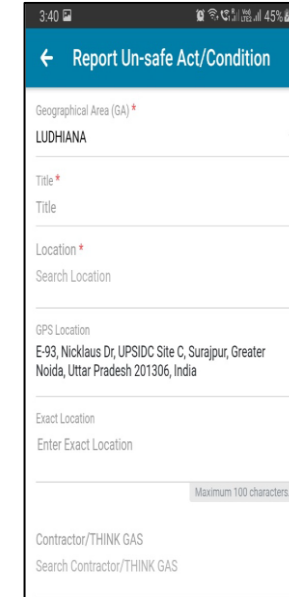
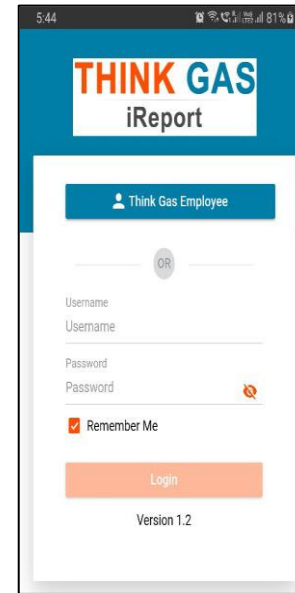
Flow-Based CBG Blending at LCNG / CGS Stations

- Natural Gas (NG) flows through pipeline via **check meter / PRS**, forming the base stream
- A **Flow Control Valve (FCV)** continuously monitors NG flow rate and automatically injects CBG at a predefined blending ratio (~10%)
- Fully automated blending ensures proportional injection based on real-time flow conditions

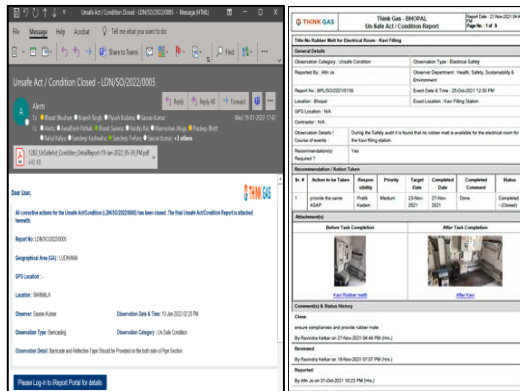
SL NO	Industry Name	Comm. Sts	Power . Sts	CBG CH4		CBG O2		CBG H2S		CBG CO2		VOLUME FLOW		MASS FLOW		MASS TOTALIZER		DEW POINT(DP)		TEMPERATURE		RH		
				Min	Max	Min	Max	Min	Max	Min	Max					Min	Max	Min	Max					
1	ENERGIM CDLR - KAN	●	●	95.40	%	0.20	%	0.00	PPM	20mg/m3	3.30	%	0.00	M3/Hr	0.00	Kg/Hr	0.00	Kg	0.00	deg C	35.25	deg C	0.00	PPM

OPERATIONAL SAFETY INNOVATIONS: ONLINE INCIDENT REPORTING AND PERMIT TO WORK

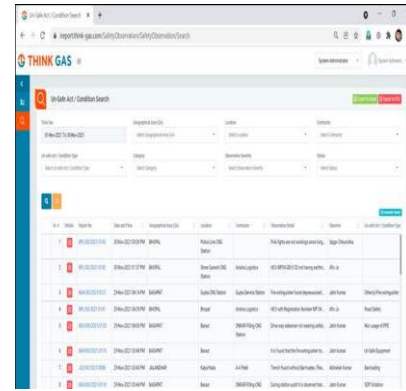
iReport



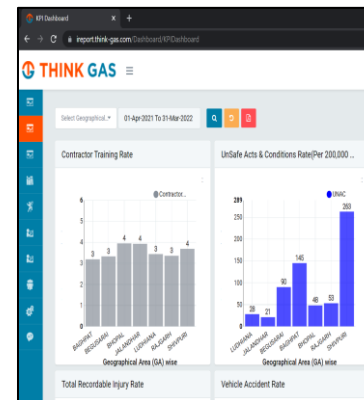
iReport Mobile App



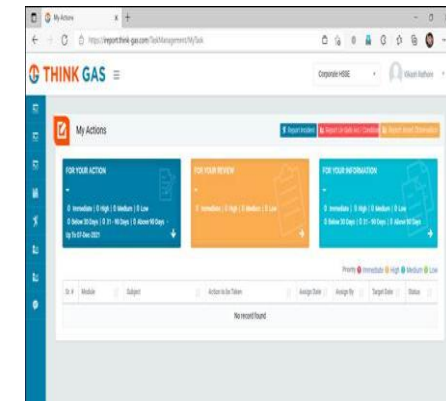
Email Alerts with PDF Report



Tracking of Open Action Items



Corporate Dashboard



Reporting via Desktop Browser

NETWORK INTELLIGENCE & MEASUREMENT ACCURACY: SMART PREPAID METER

A **Smart Gas Meter** is an advanced metering device that automatically measures and records gas consumption using **digital communication technology** (such as NB-IoT and BLE). Unlike conventional meters that require manual reading, smart meters enable near to **real-time data transmission** to the Head End System (HES) for data repository.

Enables **consumer** and **Think Gas** to monitor usage remotely, detect anomalies (like leaks or tampering), and ensures **accurate, transparent, and timely billing.**

Has features like **remote valve control, prepaid functionality, and integration with mobile or web applications** for user convenience.



Benefits :

Enhances operational efficiency by reducing manual meter reading

Remote monitoring & valve control with Improved safety via automated alerts

Accurate and transparent Billing

More Data Points for analysis on Gas usage analysis.

User-friendly web applications for consumers to monitor gas usage & ease of Recharge.

OPERATIONAL EFFICIENCY : CUSTOMER RELATIONSHIP MANAGEMENT



OPERATIONAL EFFICIENCY : CUSTOMER RELATIONSHIP MANAGEMENT

Communication Campaign Glimpse

Safety Alert SMS - LPG

सुरक्षा चेतावनी:
अपने PNG कनेक्शन पर LPG
सिलेंडर का उपयोग न करें। यह
खतरनाक है और इससे आग लगने का
खतरा हो सकता है। आइए अपने घरों
में सुरक्षा को प्राथमिकता दें। किसी भी
आपातकालीन स्थिति में कृपया हमें
[18005727105](tel:18005727105) पर कॉल करें।
Team THINK Gas

Safety Alert:
Please DO NOT use a LPG
Cylinder on your PNG
connection. It is extremely
dangerous and may cause a
fire hazard. Let us prioritize
safety in our homes. In case
of any emergency please call
us at [1800-2022-999](tel:1800-2022-999).
Team THINK Gas

CNG Station Opening



**ప్రియమైన CNG వాహన
వినియోగదారులకు శుభవార్త!**

శ్రీ అనంతపురం జిల్లా, అనంతపురం పట్టణంలో కొత్తగా
Think Gas వారి CNG స్టేషన్ పారంభించబడింది. ఈ స్టేషన్
ఫోటీస్ ప్రరేడ్ గార్డ్ సమీపంలో అందుబాటులో ఉంది.
వినియోగదారులకు 24x7 సేవలు అందించబడతాయి.

అలాగే, అనంతపురం నగరంలోని ఇవ ఫిల్లింగ్ స్టేషన్
నందు నిర్వహించబడిన ఆన్లైన్ పనులు విజయవంతంగా
పూర్తయ్యాయి. అందువల్ల, ఈ స్టేషన్ ఇప్పుడు మళ్ళీ CNG
వినియోగదారుల కోసం తెరవబడింది.

అలాగే కడప నగరంలోని సీస్ రెడ్డి ప్యూయల్ పార్క్ నందు
నిర్వహించబడిన ఆన్లైన్ పనులు విజయవంతంగా
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వినియోగదారుల కోసం తెరవబడింది.



అనంతపురం: 94410 60780 | శ్రీ విశ్వనాథం జిల్లా: 63017 73219 | కడప - 6303616901

LNG Station Opening



**NEW LNG STATION
OPENING
SOON**

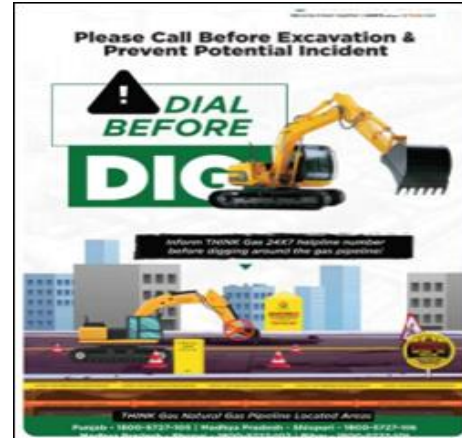
@ VALLAM, KANCHIPURAM.

USP OF THINK GAS LNG

- Cost Savings** (BoG icon)
- Customer is paying net of BoG** (BoG icon)
- Operational Efficiency** (Gears icon)
- End to End Solution** (Recycling icon)
- Cold LNG dispensing (like a water)** (LNG icon)
- Extended Vehicle Range** (Truck icon)

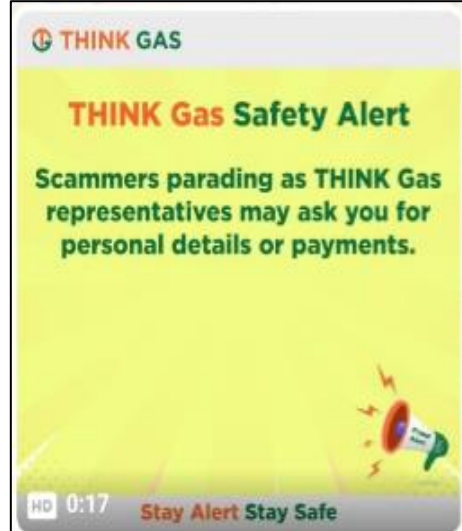
For more information contact:
99625 34422 / 70102 21963 www.think-gas.com

Dial Before Dig



Important
Dear Customer,
Please **DO NOT** carry-out or
allow any kind of digging near
the gas pipelines.
In case of Emergency or
any excavation near the gas
pipelines, please inform us on
[18002022999](tel:18002022999)
Stepping Ahead Together AG&P
Pratham & THINK GAS 12:08 pm

Safety Alert - Cash



Dear Customer,
"Stay Alert, Stay Safe."
Stepping Ahead Together AG&P
Pratham & THINK Gas 4:32 pm

RECOGNIZED FOR EXCELLENCE AT PNGRB EXCELLENCE AWARDS 2025

Awards Received

- **Operational Excellence Award** – Barmer, Jodhpur & Jaisalmer (BJJ) Geographical Area
- **Special Jury Award for Best Performing GA (BJJ)** – Virtual Pipeline Category
 - Presented on 6th October 2025, during the 19th Foundation Day of the Petroleum & Natural Gas Regulatory Board (PNGRB)



Key Highlights and Metrics of BJJ

- **4.5 years** of uninterrupted operations in the **BJJ GA** (3 Districts)
- Supported by a **robust virtual pipeline**, transporting **~106 MMSCM of LNG** via **4,610 tanker trips** (Jodhpur ↔ Dahej/Hazira)
- **Network Infrastructure:**
 - **208 In-km** steel pipelines
 - **1,390 km** PE distribution network
 - Serving **33,000 domestic**, **130 industrial**, and **184 commercial** customers
 - **2 LCNG stations:** Salawas & Daijjar
- **50+ dedicated MCVs** for transporting CNG to DB stations



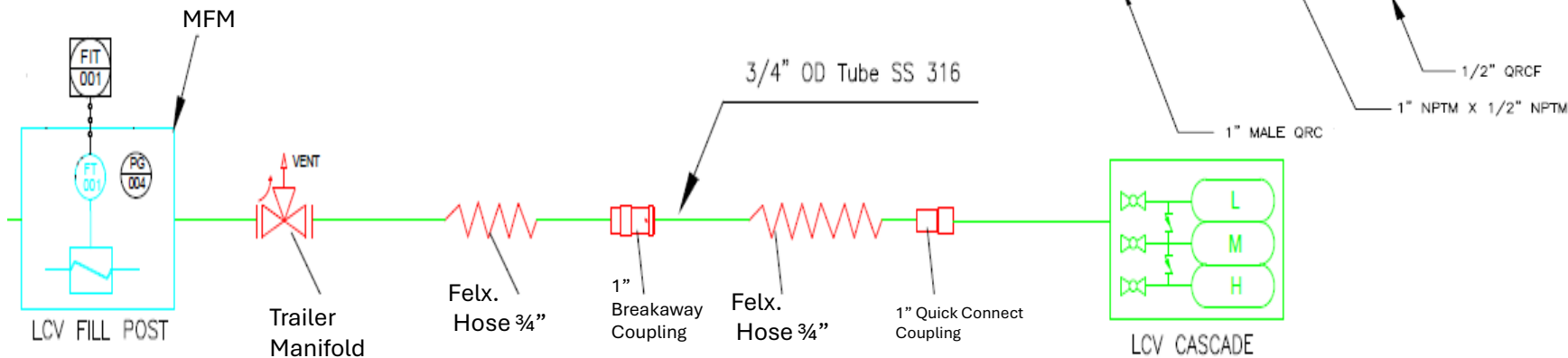
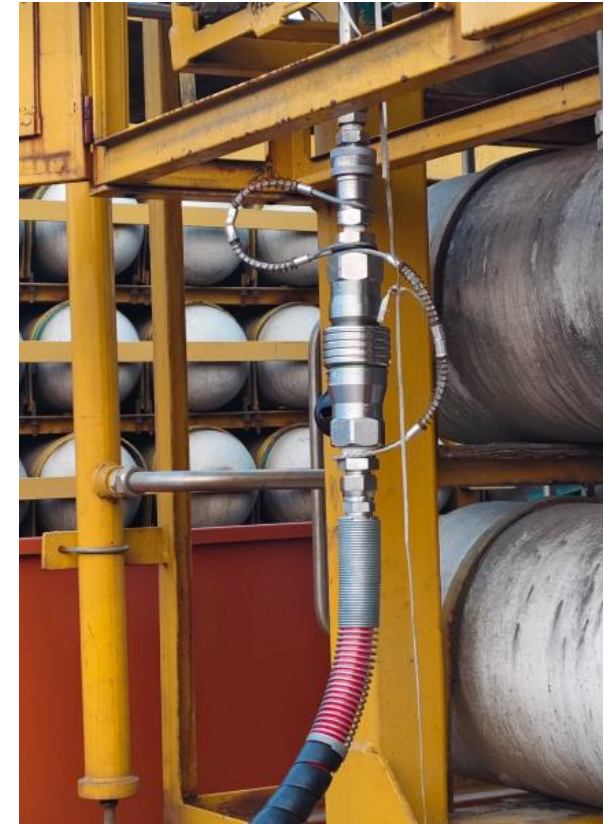
THANK YOU ...!



OPERATIONAL SAFETY INNOVATIONS

Fast Filling System for LCVs

- **Upgraded filling hose, quick connecting coupling, and breakaway coupling from 3/4" to 1" to improve gas flow during LCV cascade filling**
- **Reduced filling time per cascade by ~27%**, enabling faster operations
- **Improved cascade turnaround time** supporting optimized mobile cascade deployment
- **Reduced vehicle idle time and better utilization** of filling infrastructure



OPERATIONAL SAFETY INNOVATIONS

Prevention of Hose Pulling Incidents in LCVs.

- Introduced **Hose Pulling Prevention System** to reduce accidental hose damage and safety hazards.
- **Camlock mechanism** added to LCV filling hose, linked to the vehicle's ignition key.
- LCV driver must unlock camlock and keep key near hose during filling, stopping the vehicle from moving.





THINK GAS