



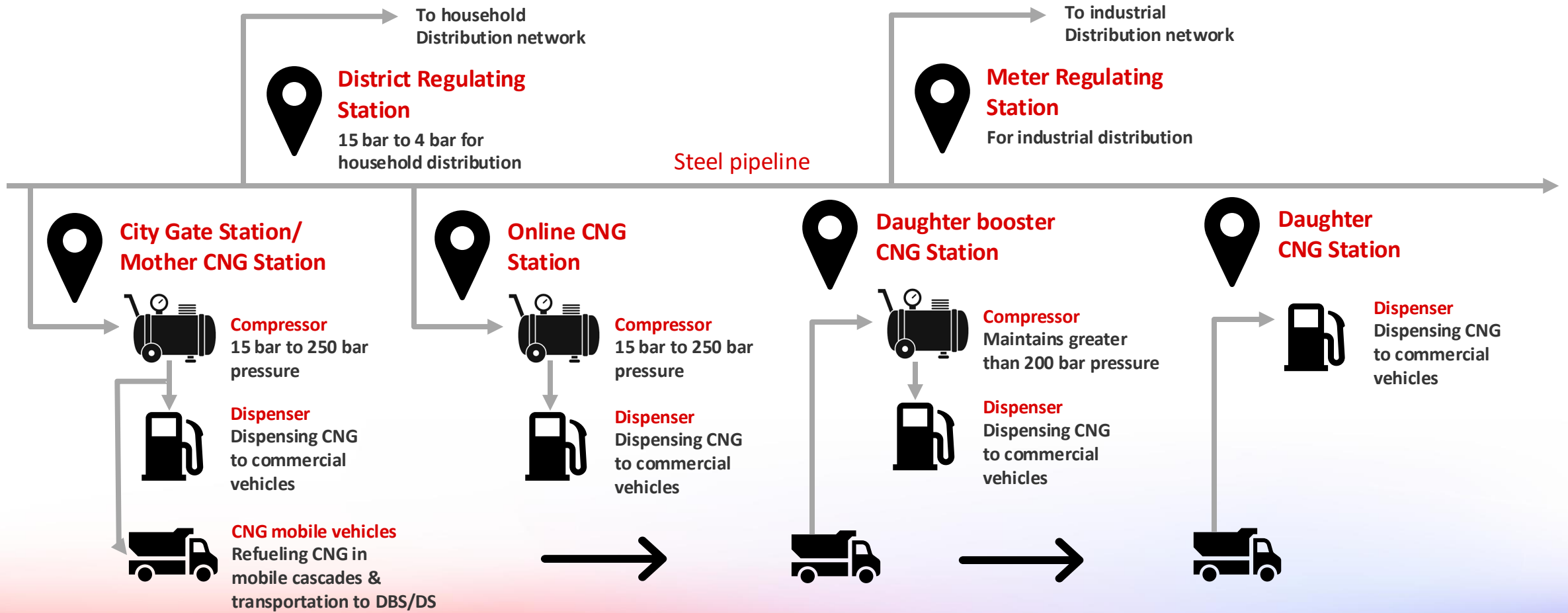
Automation & Digitalization in CGD sector

Diggamber Singh, Associate Director-Sales, ABB India Limited

**ENGINEERED
TO OUTFRAN**

CNG City Gas Distribution

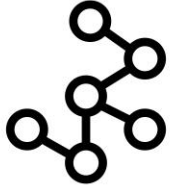
Process flow diagram



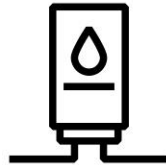
City Gas Distribution - Operation

Major challenges

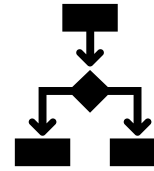
Distributed locations



Last mile connectivity



Flow & Pressure control



Dry Outs & Gas Loss



Manual data recording & billing



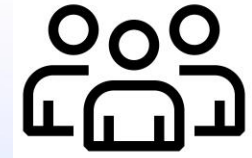
Centralized Price control



Expanding operations



Manpower intensive



City Gas Distribution - Infrastructure layer

Building strong base and backbone

Measurement

- Flow meters
- Flow Computer
- Gas Chromatograph
- Transmitters
- Detectors, control valves
- Leak Detection System



Control

- Metering Skid
- Pressure Reduction Skid
- District Regulation Skid
- Pressure Regulation Skid



Remote Telemetry

- Remote Terminal Unit
- Data concentrator
- Programmable Logic Controller
- IoT Device



Communication

- Protocol
 - DNP3/IEC 104
 - Modbus, OPC
- Media
 - OFC
 - MPLS
 - Wireless GPRS, VSAT



City Gas Distribution - Operation layer

Pre-requisites to select right operation technology-SCADA

- Sustainable & Scalable
- High Performance RDBMS
- Diverse architectures
- Distributed communication
- Rich data bank for analysis
- On-premise & Cloud enabled
- Cyber secured by design
- User friendly GUI

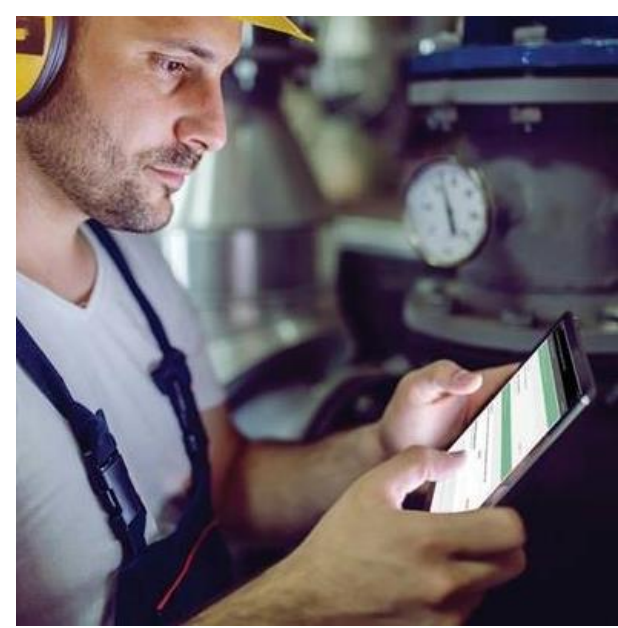


- Latest Operating System
- Low bandwidth operation
- Gas reconciliation
- Easy 3rd party interface
- Mobility
- Disaster Recovery
- Low OPEX
- OEM lifecycle support

City Gas Distribution - Security

Achieving and maintaining cyber security for ever expanding network

- Security Global Settings
- IP Whitelisting for Database Connections
- Password policy
- Application Users & user group
- Installation changes & Audit trail
- Security Log
- Digital signed application



City Gas Distribution - Integrated SCADA and ERP

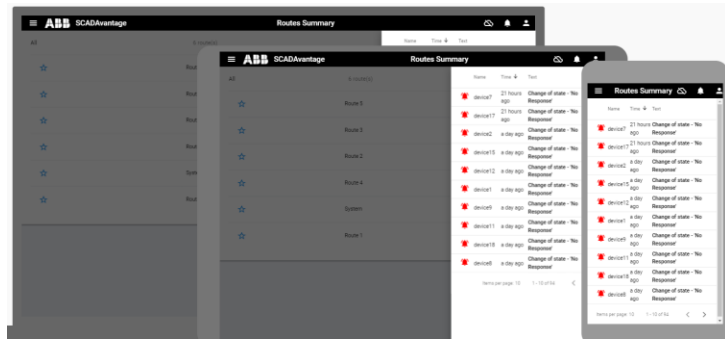
Swift and transparent data management system



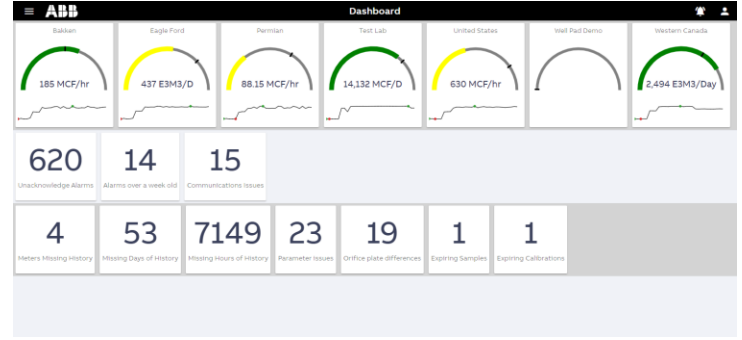
City Gas Distribution - Digitalization

Business efficiency and transparency

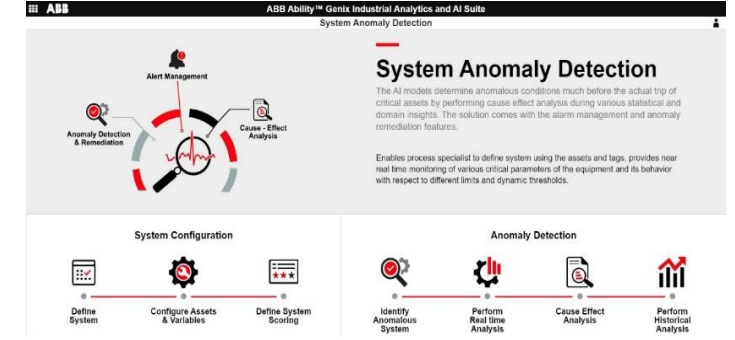
Mobility



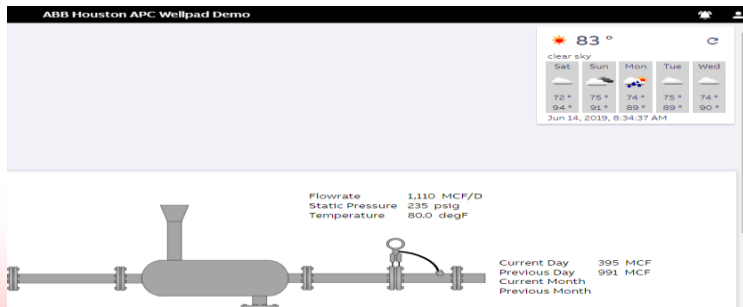
Dashboards



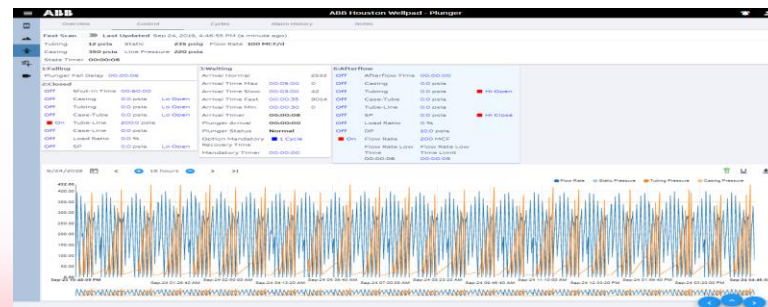
Artificial Intelligence



Forecasting



Product Optimization



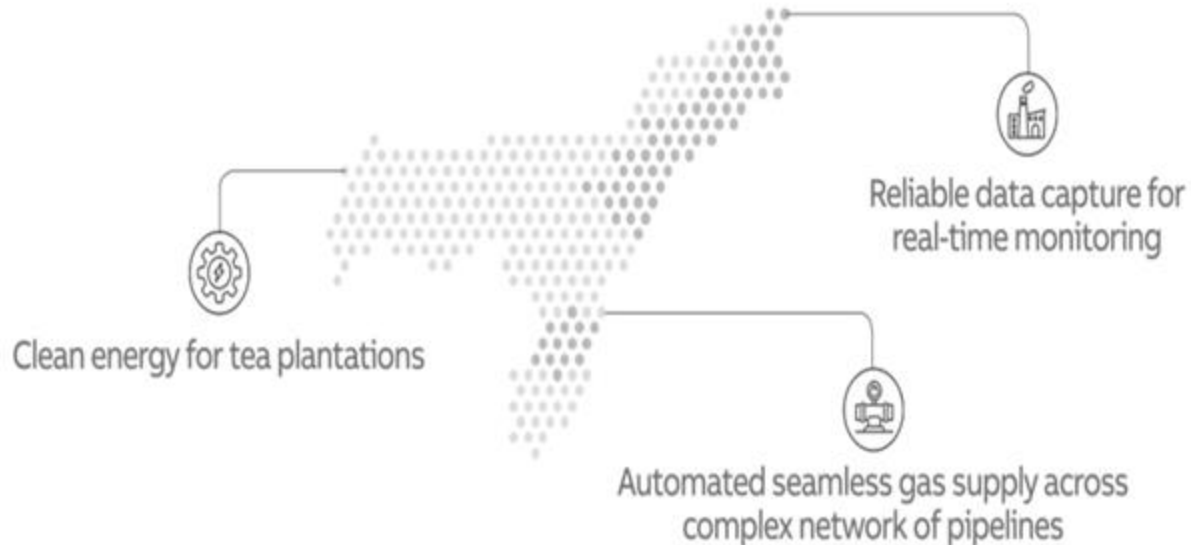
GIS Integration



Case study - Assam Gas Company Limited Duliajan

SCADA & Instrumentation for tea factories & industries of upper Assam

Assam's tea gardens & industrial customers up-grade to first of its kind ABB digital gas control systems for Assam Gas Company Limited



Challenges

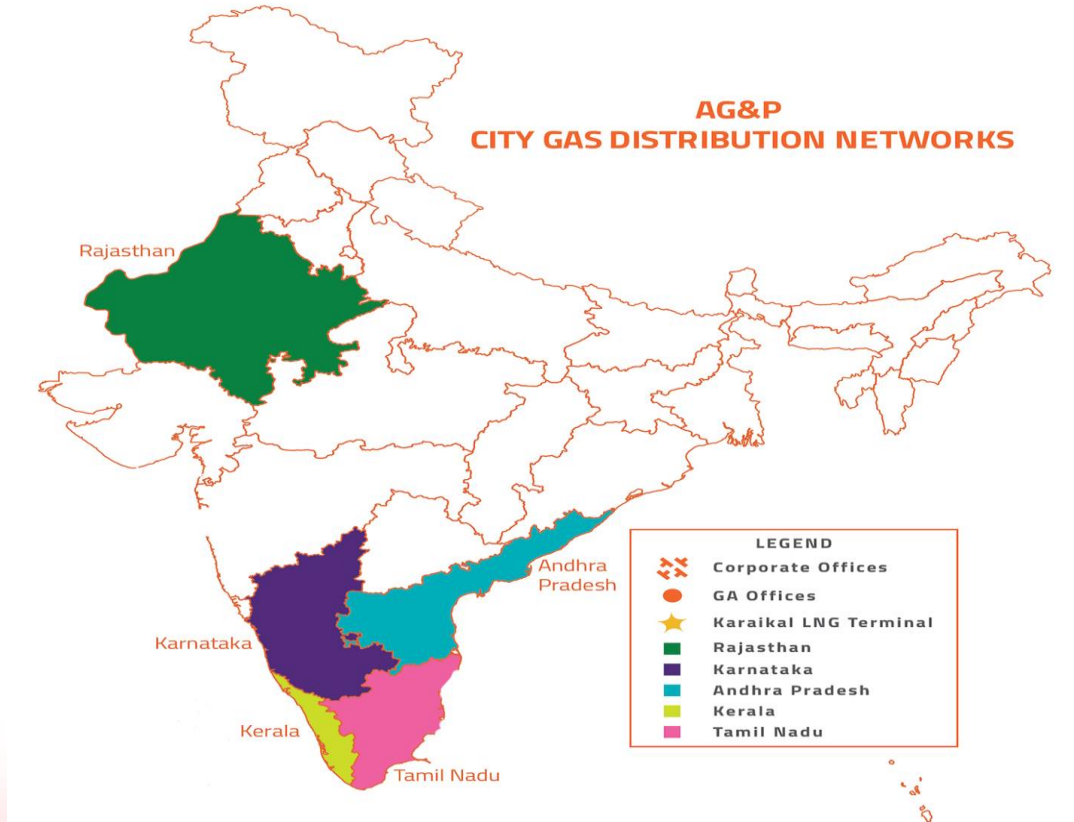
- Optimization of gas flow across pipeline network
- Pre-defined gas availability to last mile consumer
- Manpower intensive collection of data & billing
- Control on gas usage

Solution

- Centralized SCADA system with real time data
- Customized telecom solution to overcome limited bandwidth availability in region
- Remote Terminal Units to collect, store & transfer data to and from SCADA automatically
- Complete solution for Gas flow and pressure regulation & control
- Scalable solution that shall be expanded to cater 4 times the initially conceptualized architecture.

Case study-THINK GAS

Cloud based SCADA system with AI and RTU covering 5 states



Challenges

- Monitoring of gas distribution to 2000 CNG stations , CGS stations, SV etc. across 5 states
- Communication network
- Quick & full proof implementation
- Integrated system with GIS, CCTV, RFID, ERP, VTS
- Selection of right partner for solution

Solution

- PoC of solution
- Centralized low bandwidth operational SCADA system
- Wireless communication backbone
- Future expansion capability
- Centralized price deployment for CNG stations

Digitalizing THINK Gas's extensive city gas distribution network in 10 Indian states

Project Insights



Monitoring and controlling the gas distribution network that supplies compressed natural gas (CNG) to over 500 fuel stations nationwide with a provision to expand over **2000 fuel stations**.



Use of **wireless communication technologies** to securely connect field devices which are spread across geographical areas, to cloud based **ABB Ability SCADA Advantage**.



Sales & Operation KPI reports with basic analytics enabling customers to optimize operation, take **crucial business decisions and drastically** reduces manual efforts.

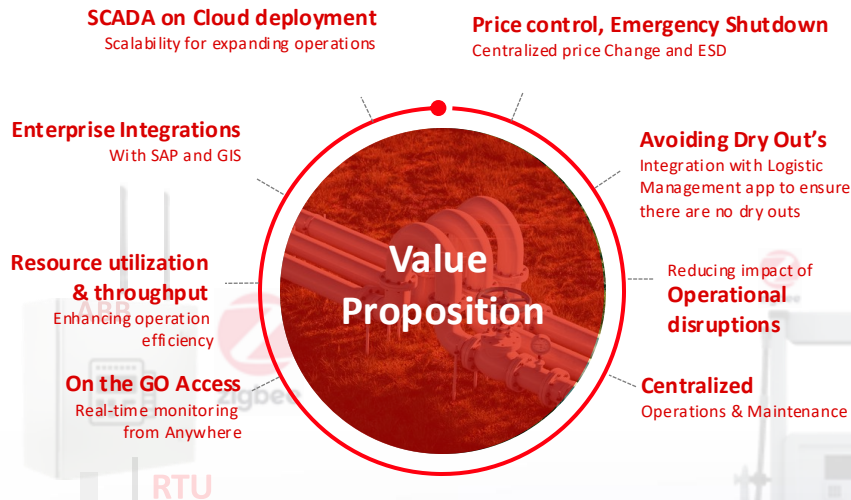


Automated Centralized monitoring and controlling thus enabling customers to become less **manpower** intensive entity and thus optimize operations.



Integration of **SCADA Advantage** with IT based systems like **ERP, Journey management system & GIS**. These systems use data received from SCADA Advantage for efficiently making data driven decisions.

Solutions Delivered



Press Release

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ABB powers THINK Gas with cloud-based automation across 10 states

PTI | Updated - July 30, 2025 at 04:00 PM.

The advanced system offers centralized price management, gas planning, reconciliation, and improved data accuracy, helping enhance efficiency from source to end user.

From its control room in Chennai, THINK now monitors and manages real-time operations across 19 Geographical Areas, supplying Compressed Natural Gas (CNG) to over 500 fuel stations.

“THINK Gas has achieved a 60% reduction in gas distribution operational costs and a 70% reduction in manpower requirement by implementing ABB’s automation system” – Think Gas (formerly AG&P Pratham)

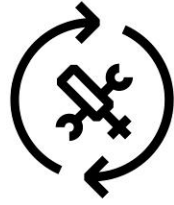
City Gas Distribution – Leveraging Technology

Summary

Centralized scalable system



Realtime data flow



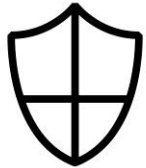
Flow regulation and control



Reliable data & communication



Cyber Security



Reliable automation partner



Digitally enabled decision making



Central price control and billing







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