

Smart City Gas Distribution

Digital technologies transforming the City Gas Distribution value chain
from source to consumer

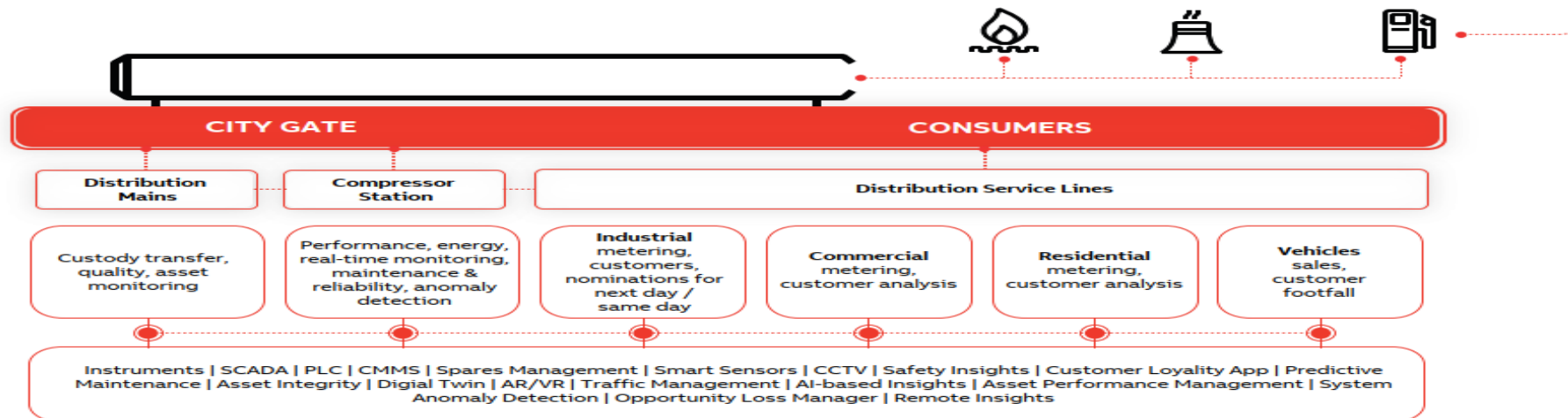
Speaker : *Diggamber Singh, Manager-Sales, ABB
India Limited*

- India is the world's third largest emitter of greenhouse gases
- India is committed to contribute towards climate change control
- India's commitment to reduce emission by 33%-35% of it's GDP by 2023 compared to 2005 levels
- Replacement of conventional fuel with cleaner fuel is key aspect
- Innovation & commitment to replace traditional fuel is key
- Answer lies in Natural Gas & CGD
- India is planning to raise natural gas in energy basket to 15% by 2030
- CGD: The fastest route from source to doorstep

Context

- Analysts predict that current and planned initiatives on CGD will help extend its coverage to 70% of India's population
- City Gas Distribution(CGD) is playing an important role in this effort
- CGD has its own operation challenges which needs to be addressed
- Integrating digital technologies with CGD can make major impact
- Contemporary digital resources are proving to be highly effective globally
- Using digital technologies for true impact
- Propelling India into digital age

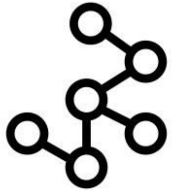
- Digital technologies have the potential to transform the entire chain for CGD from source to the customer's doorstep
- Combination of smart sensing and advanced analytics, digital technologies help make the CGD network safer



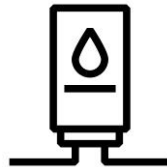
Integrated Digital Solutions

Major Challenges-CGD Operations

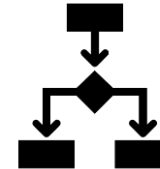
Distributed locations



Last mile connectivity



Flow & Pressure control



Inventory & Pilferage Control



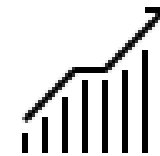
Manual data recording & billing



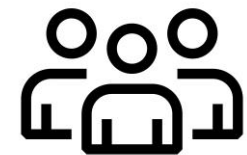
Centralized Price control



Expanding operations

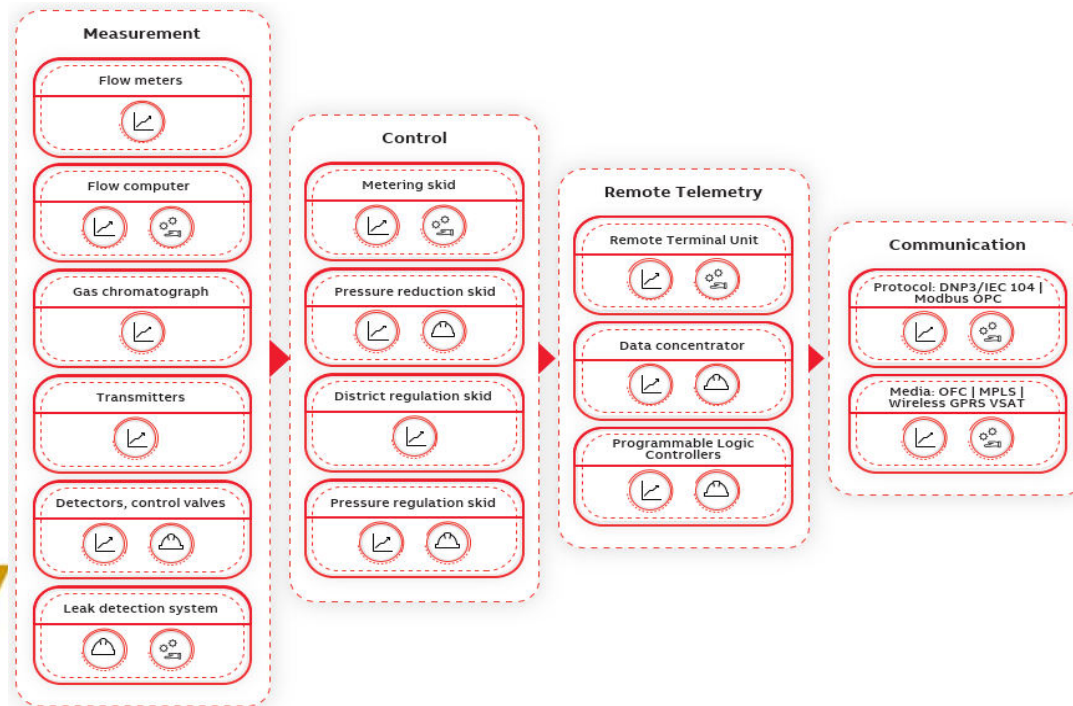


Manpower intensive

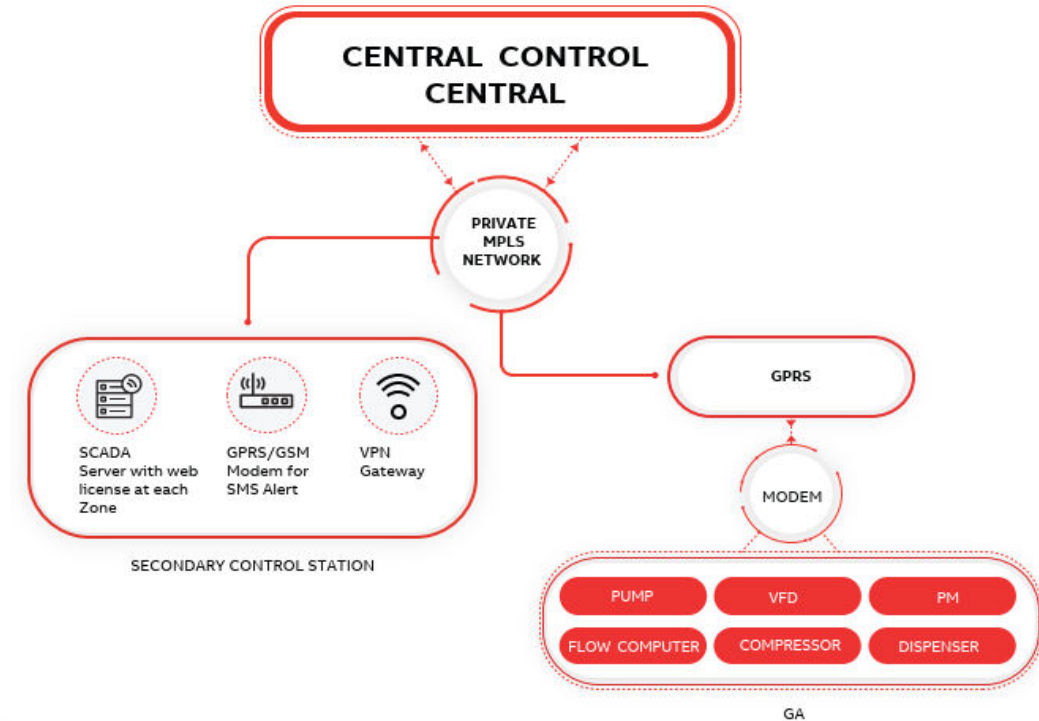


Presentation on the Topic

Building Blocks



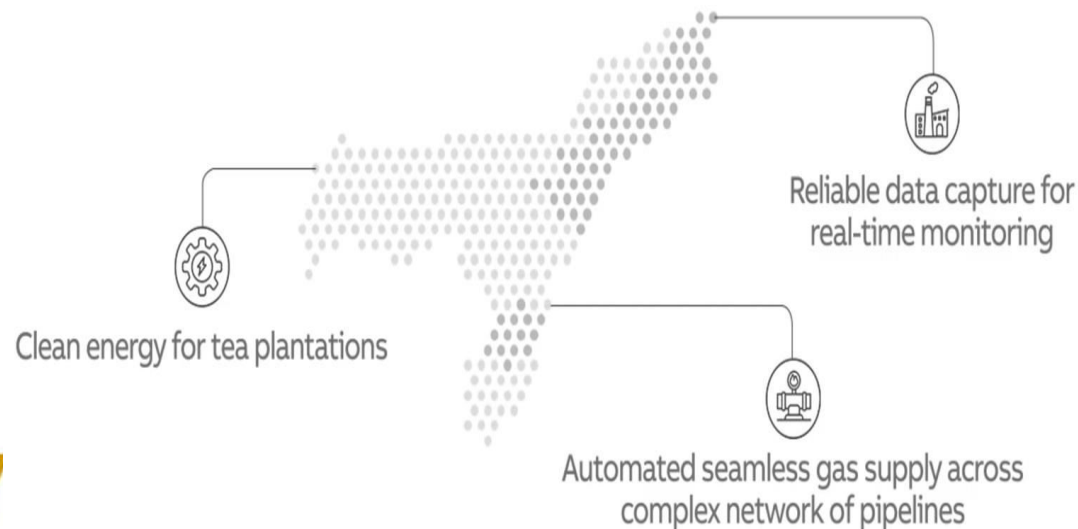
Transforming Blueprint



Use Case/Case Study

Assam Gas Company Limited-Smart Gas Distribution to tea states

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
- Automatic billing

Use Case/Case Study

Cloud based SCADA system with AI and RTU covering 4 states



- **Challenges**

- Monitoring of gas distribution to 150 CNG stations & CGS stations across 4 states
- Communication network
- Uncertainty on workability of cloud-based system
- Integrated system with GIS, CCTV, RFID, ERP, VTS
- Selection of right partner for solution

- **Solution**

- Centralized low bandwidth operational SCADA system
- Wireless communication backbone
- Future expansion capability
- Centralized price deployment for CNG stations
- Automatic billing

- CGD is a key enabler of the clean fuel initiative and drive for sustainability
- Digital technologies has answer for effective CGD operation
- Adopting strong & future proof digital backbone
- IT-OT integration with and fortified Cyber Security
- Utilizing benefits of Industry 4.0 technologies like Artificial Intelligence
- Aligning with all key characteristics of a smart city

Thank You

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[Links/References \(If any\)](#)

