



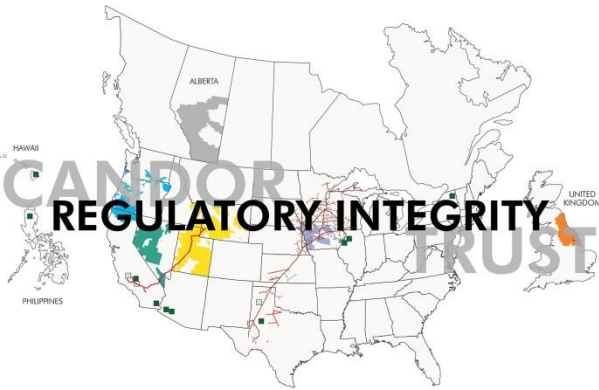
CUSTOMER SERVICE



EMPLOYEE COMMITMENT



ENVIRONMENTAL RESPECT



OPERATIONAL EXCELLENCE



**BERKSHIRE
FINANCIAL STRENGTH
OWNERSHIP**

Governors Energy Office

Gary Smith- Director, Customer Energy Solutions

June 29, 2016



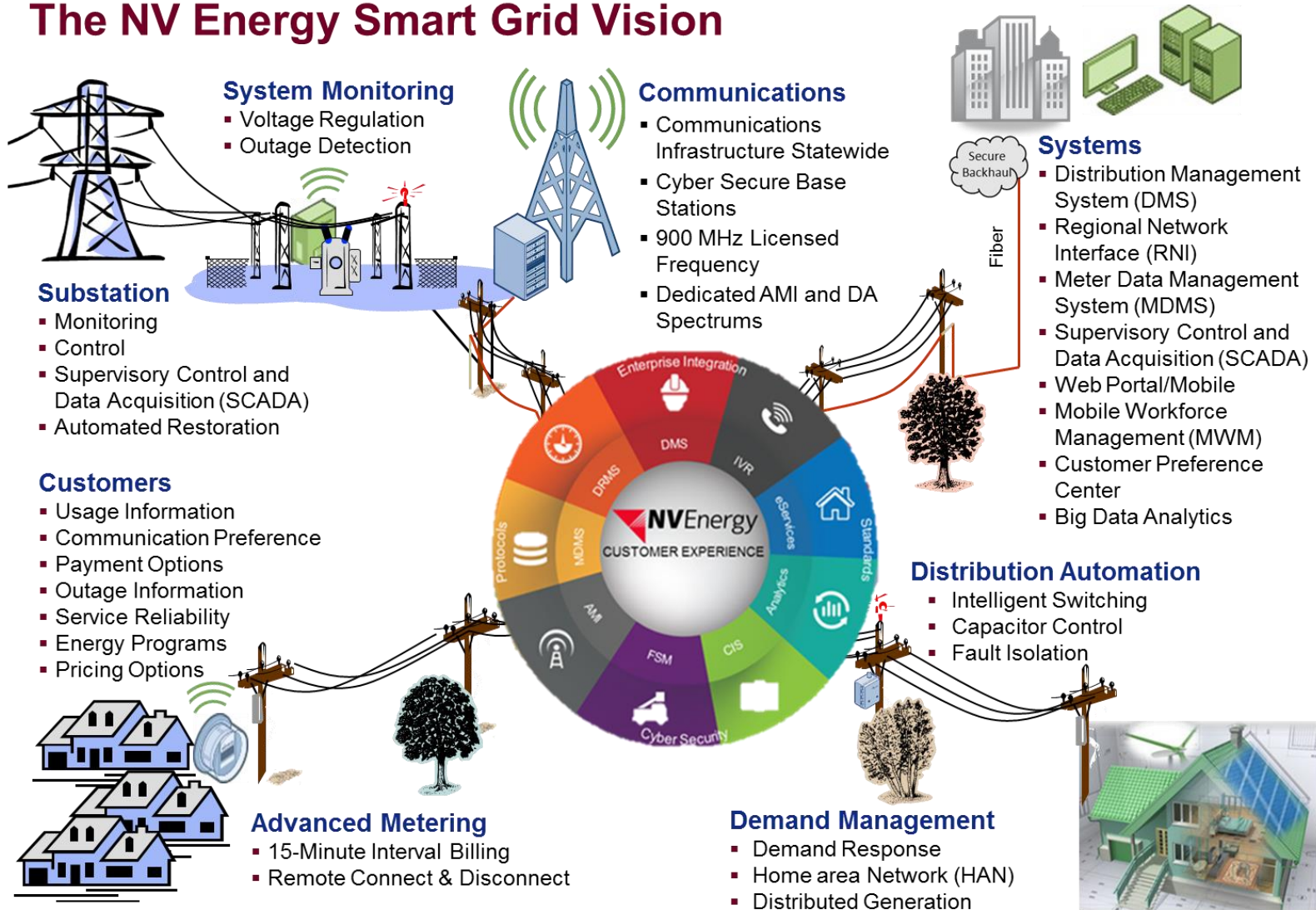


- Modernization of the grid
 - Smart Grid Vision Board
 - Smart Grid Infrastructure
 - Smart Meters
 - Systems Integration and Big Data
 - Communications Infrastructure
 - Security
 - Customer Programs and Services
 - Distribution Automation
- Emerging technologies
 - Grid Modernization – What's Next?

Grid Modernization Vision Board



The NV Energy Smart Grid Vision

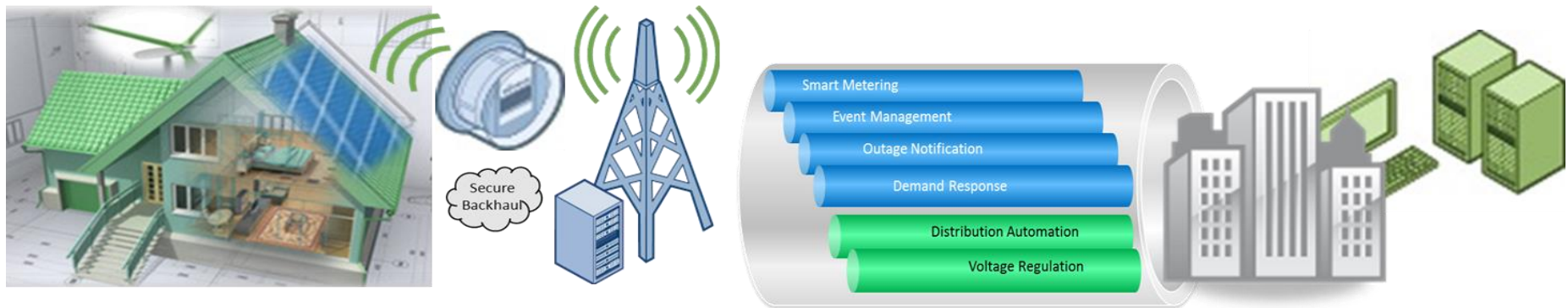


Modernization of the Grid Smart Grid Infrastructure



Smart Grid

Foundational Infrastructure



Electric

1.23 million
15-minute intervals

Gas

157 thousand
60-minute intervals

126 Communication
Tower Base Stations

122 million
Interval reads per day

\$139 million DOE
Smart grid investment grant

\$186 million
In general rate base 2014

\$20 million NET
Steady state annual benefits

3.5 million
Remote connect/disconnect

Cyber Secure
Encrypted network

900 MHz
FCC licensed frequency

Dedicated
AMI and DA spectrums

Fiber
Secure backhaul

Modernization of the Grid Systems Infrastructure

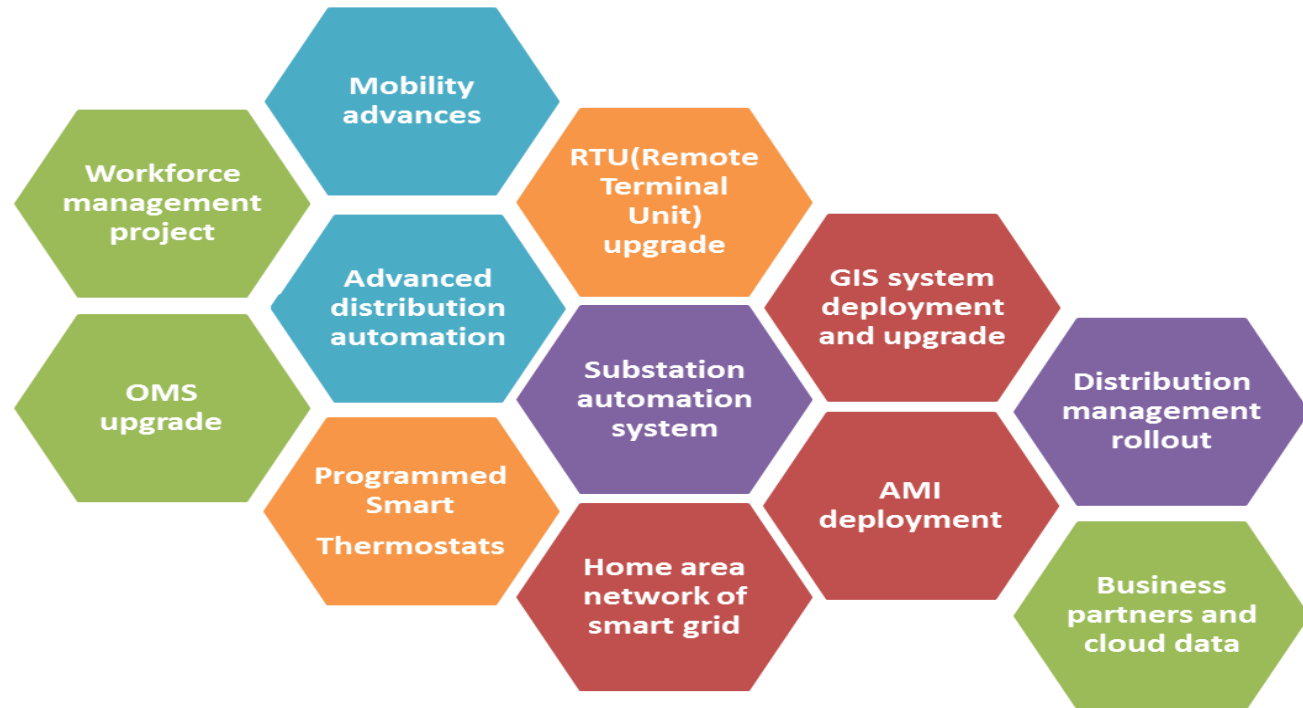


Smart Grid

Systems Infrastructure

New Systems Integration

- Distribution Management System (DMS)
- Regional Network Interface (RNI)
- Meter Data Management System (MDMS)
- Supervisory Control and Data Acquisition (SCADA)
- Web Portal/Mobile
- Mobile Workforce Management (MWM)
- Customer Preference Center
- Demand Response Management System (DRMS)



Big Data Platform
Service Oriented Architecture (SOA)

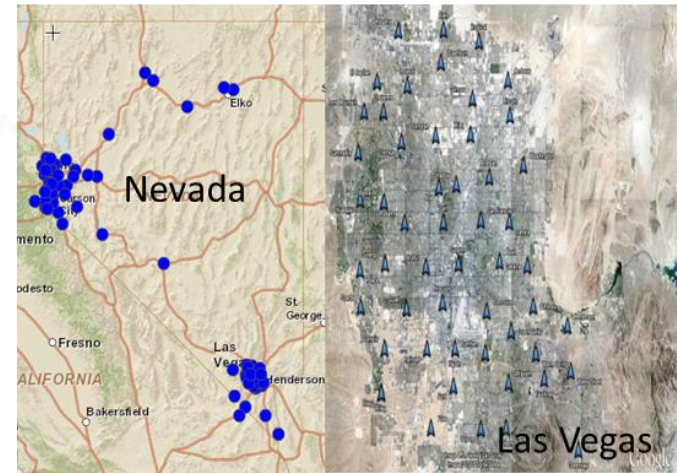
Modernization of the Grid Communications Infrastructure



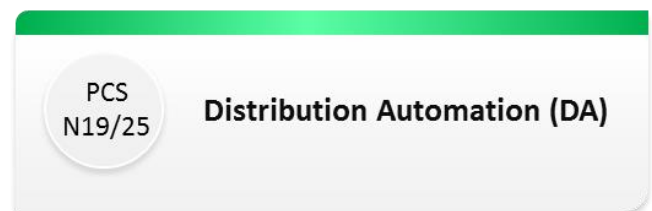
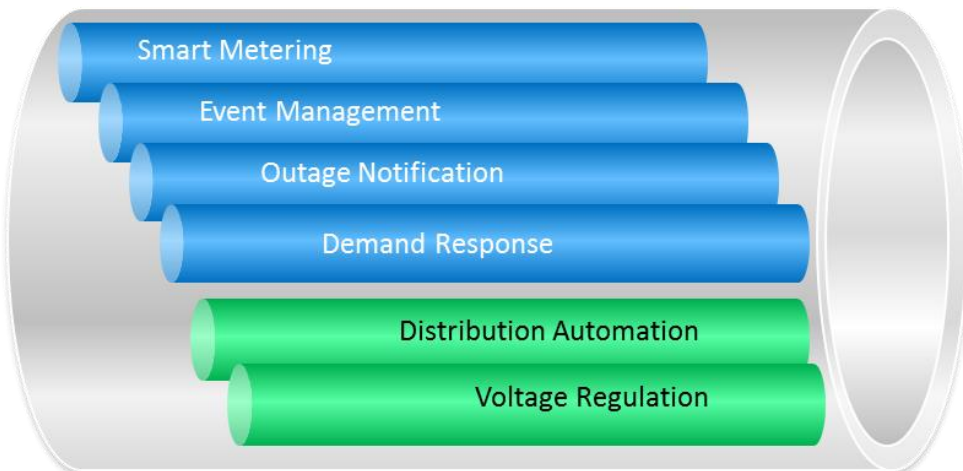
Smart Grid

Communications Infrastructure

- Communications Infrastructure Statewide
- Cyber Secure Base Stations
- 900 MHz licensed Radio frequency
- Dedicated AMI and DA spectrums
- Fiber and Microwave backhaul



Multiple Prioritized Channels

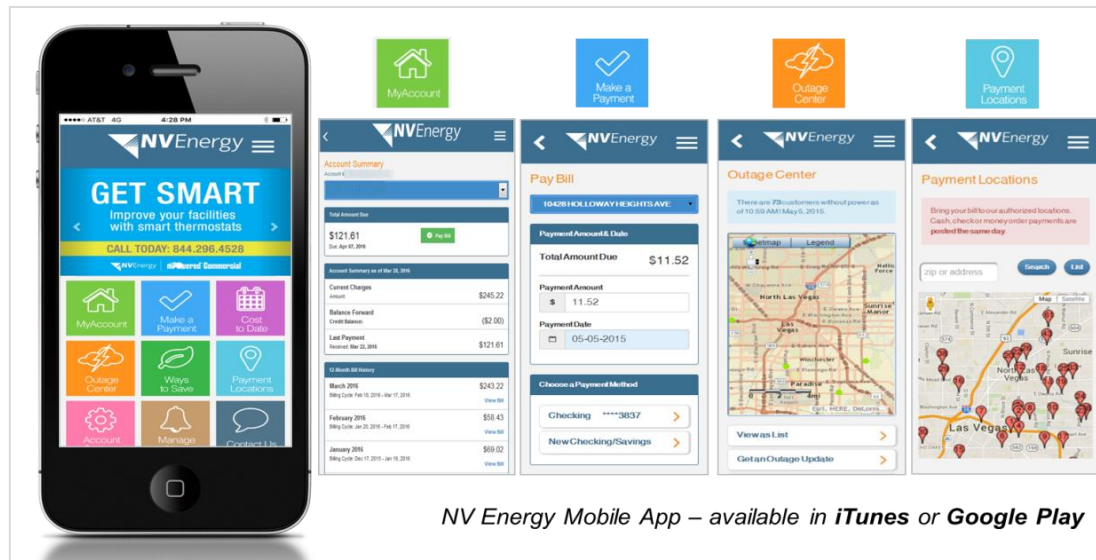
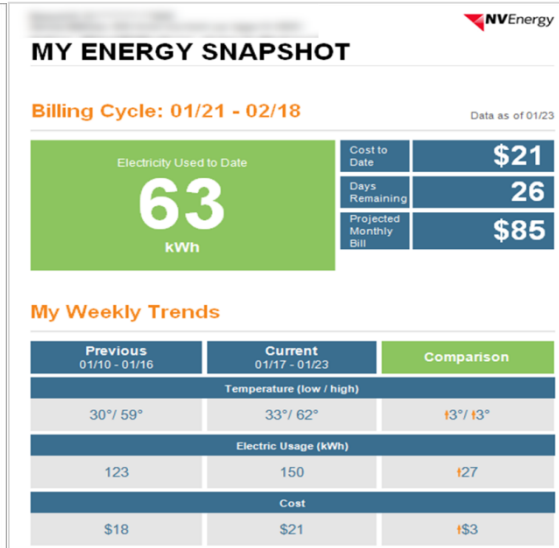
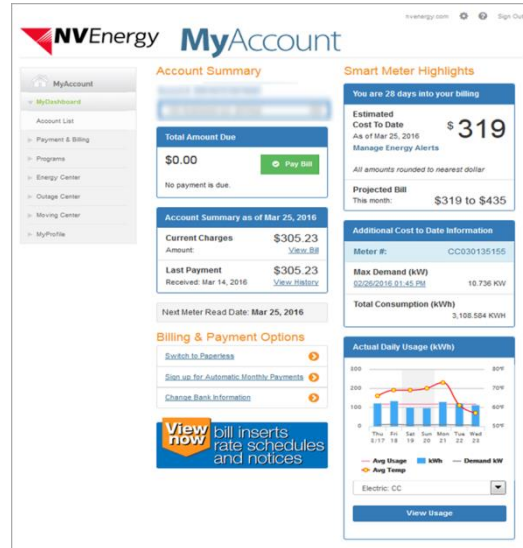


Modernization of the Grid Customer Programs and Services



MyAccount

- Over 600,000 accounts (70,000+ annual increase)
- Multiple new features added in December 2015
- New dashboard
- Scroll over data on temperature, use and cost
- Downloadable two-year data
- New net metering usage/production graphs
- Time of use and demand (for commercial customers)
- Outage map utilization growing dramatically
 - 1.4 million total hits in 2015 (web and mobile)



NV Energy Mobile App – available in iTunes or Google Play

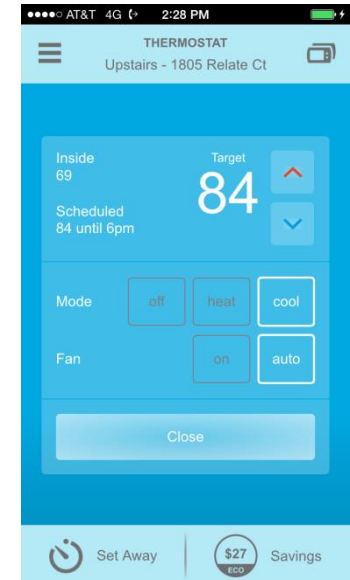
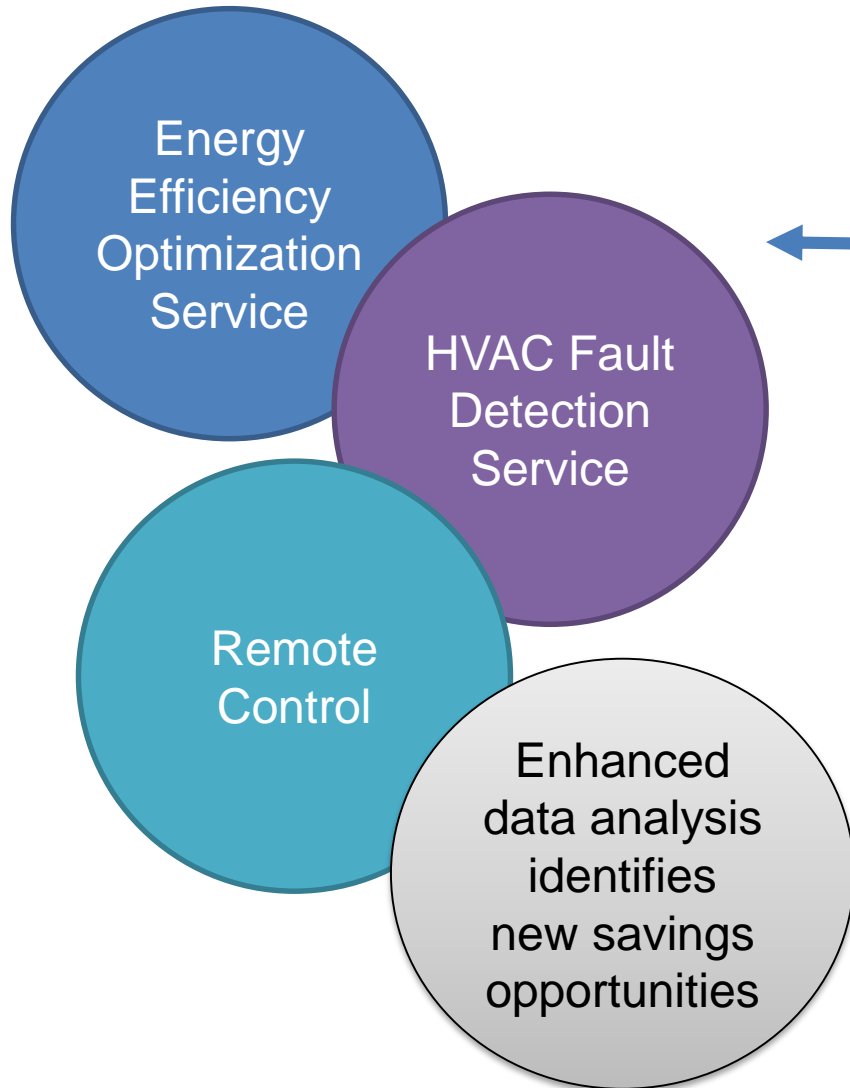
Modernization of the Grid

Role of Demand Response



- Demand response – programs that allow NVE to control customer's loads to assist in meeting the electric peak load without adding generation
- NVE's Program is one of the largest in the country
 - Controls over 244 MW of load thus avoiding the need to construct new generation to serve the load
 - 201 MW at Nevada Power
 - 35 MW Irrigation load at Sierra Pacific
 - 8.4 MW other load at Sierra Pacific

Modernization of the Grid New Customer Solutions

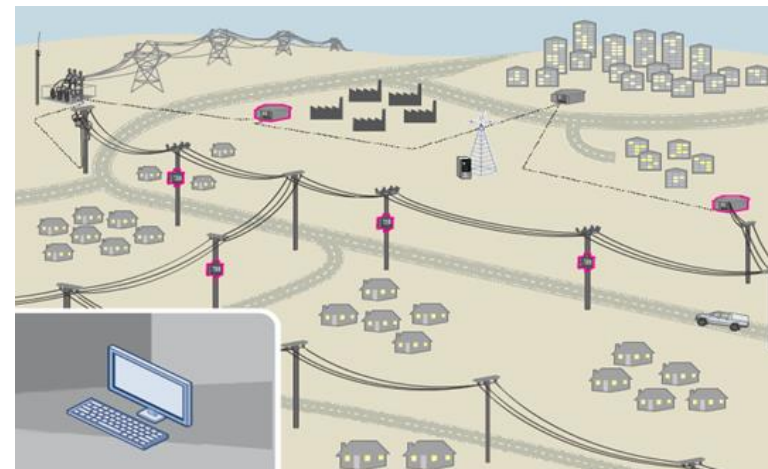


Modernization of the Grid Distribution Automation



Distribution Automation - Remotely monitors and controls basic switches, capacitors, relays, reclosers, and other devices that control a large and complex array of power lines, substations, and other components of the system:

- Distribution Line Capacitor Automation
- Substation Automation and Restoration Schemes
- Distribution Automation – Intelliteam Switches
- Substation Gas Detection
- Substation Transformer Bushing Monitoring
- Distributed Generation Monitoring (Primary)





- **Distribution**

- Distributed generation integration and impact to the grid
- Study the benefits of smart inverters
- Volt/Var optimization pilot program
- Fault location, isolation, and service restoration
- Remote controlled switching
- Integrated mobile dispatch

- **Customer service offerings**

- Continue to develop emerging technologies and interfaces with customers offering a suite of products and services to help customers track and manage energy consumption

- **Use of Emerging Technologies**

- Use of storage technologies
 - Batteries - Technology assessment as related to grid integration
- Electric Vehicles (EV)
 - Infrastructure needed to promote EV use across Nevada - The “Electric Highway” is a catalyst
 - Potential use as a demand side resource either through demand response or acting as a storage device



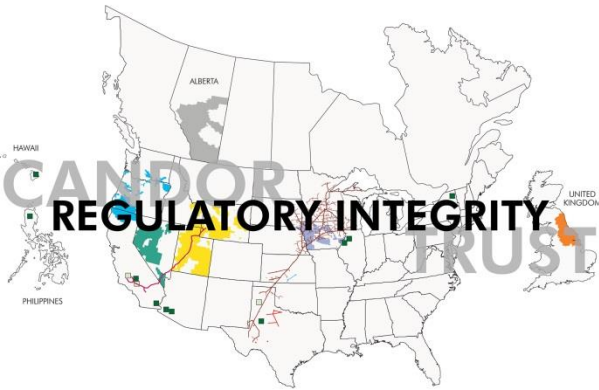
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Questions?

