

Deploying Innovative Solutions for Improved Grids

PG&E Overview

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Pacific Gas and Electric Company



Energy services for over 15 MM people:

- 5.2 M Electric customer accounts
- 4.4 M Natural Gas accounts

70,000 square miles with diverse topography and climate zones

22,000 employees

A regulated investor-owned utility

Over 50% of PG&E's energy supply comes from non-GHG emitting sources



Implementation Approach



Standards definition

- Shape and validate the standards that will underlie future smart-grid implementations



Testing

- Prototyping and testing of Smart Grid technologies before piloting
- Accelerate technology development and ensure early standards compliance
- Develop preliminary customer communications to support pilots



Controlled Pilots

- Implement tested technologies in a real-world but controlled setting to demonstrate value
- Work with customers to prepare for the new technologies and services



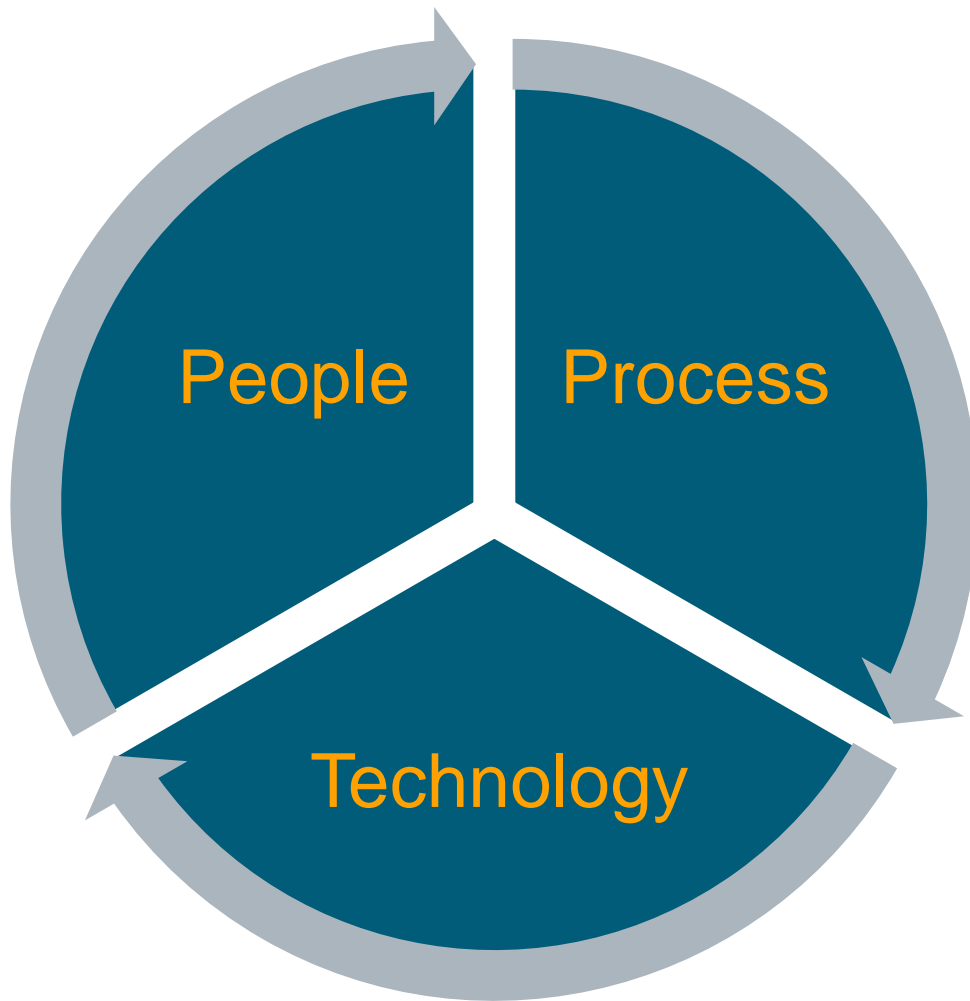
PG&E Service Area in Northern & Central California

Targeted deployment

- Extend pilots to targeted roll-outs based on benefits
- Insights used to feed the next cycle of technology deployment



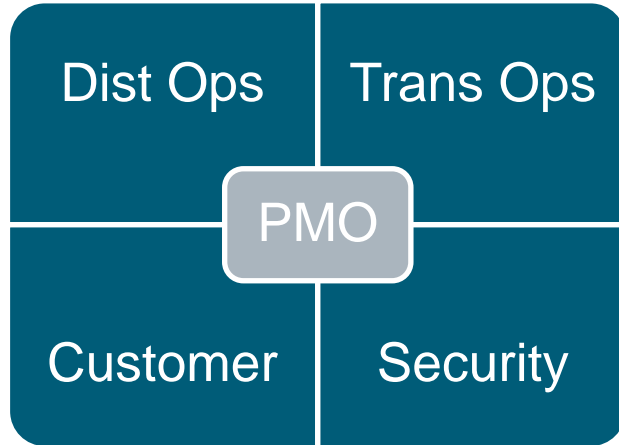
Keys to Success



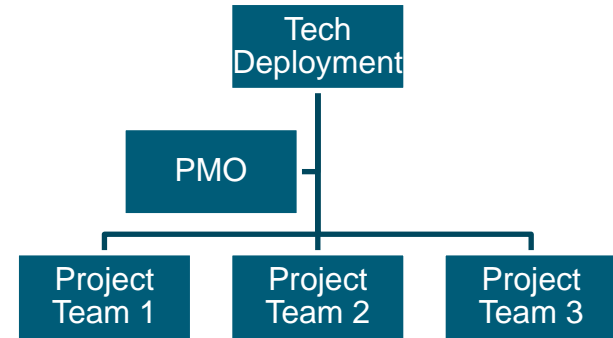
- Sponsorship
- Accountability
- Process Change
- Measurement



Deployment Organization



Matrix



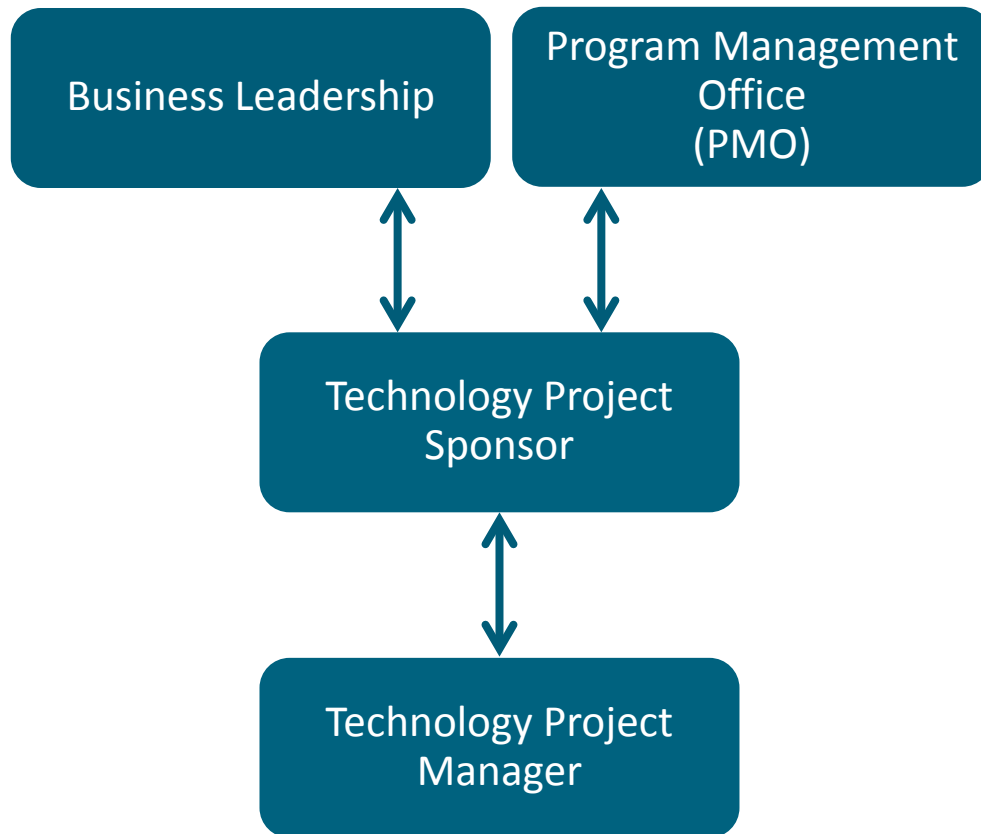
Centralized

Technology Pull

Technology Push



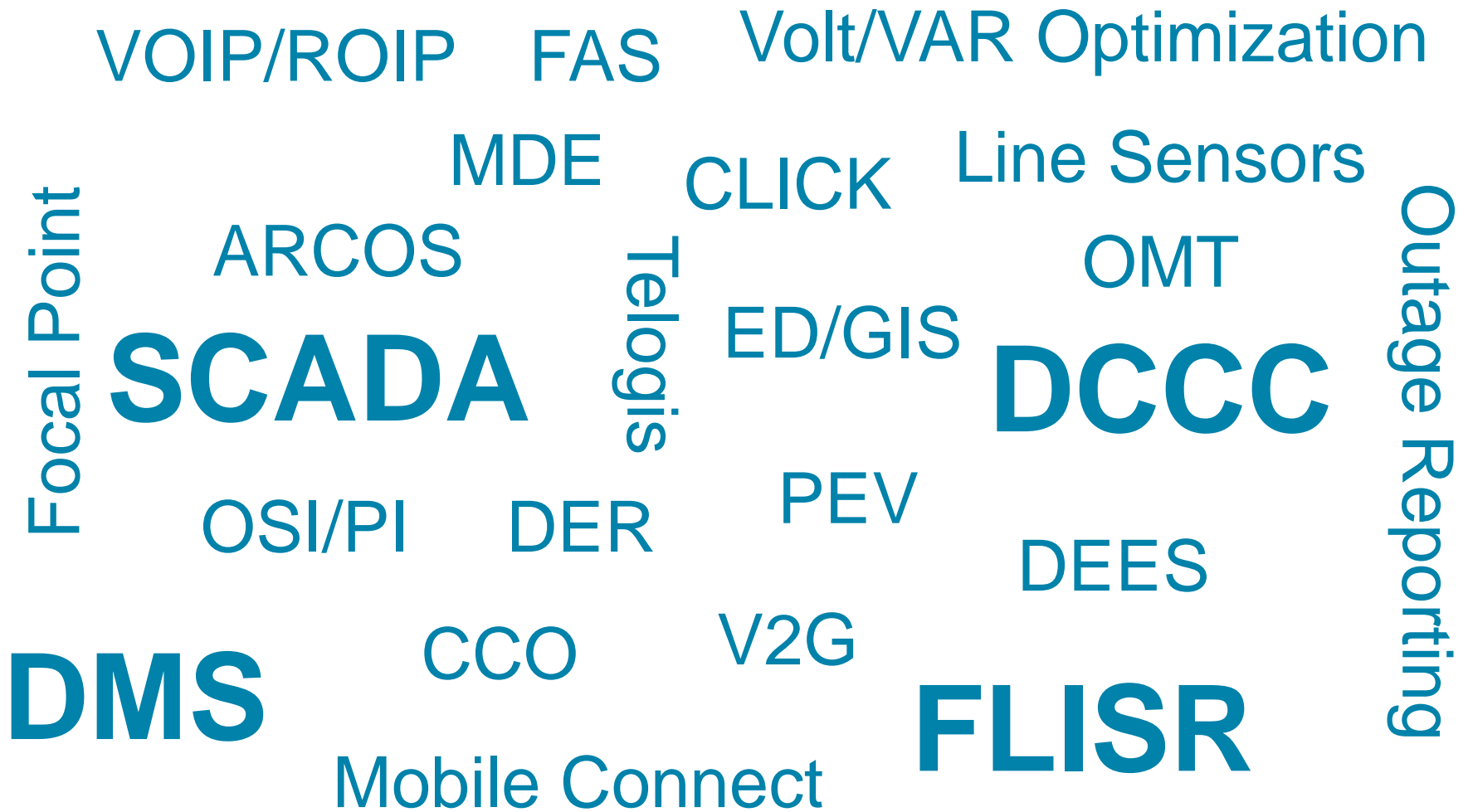
Technology Accountability Model



- Leadership champions Technology projects leading to successful execution
- PMO provides funding, technology governance, and has ultimate program oversight for all technology projects as a portfolio.
- Technology Project Sponsor is accountable to business leadership and the PMO to manage project cost, schedule, scope, implementation and post-project benefits realization.
- Technology Project Manager is accountable to the Technology Project Sponsor to deliver the complete project scope within budget and schedule.
- Technology Project Manager is accountable for all aspects of the project including change management and business activities on behalf of the Technology Project Sponsor

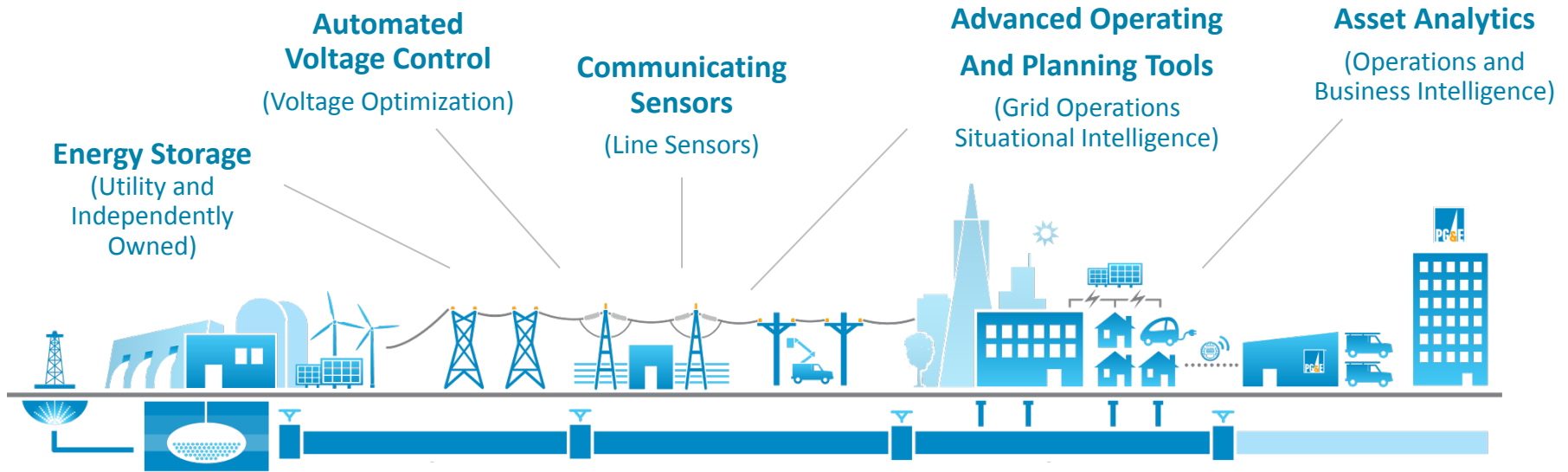


Distribution Operations Technologies





Getting Ready for the Future



Enabling The Grid of Things

Challenge	Technology Solution
Two-Way Power Flow	<ul style="list-style-type: none">Automated Voltage ControlCommunicating Sensors
Intermittent Supply	<ul style="list-style-type: none">Energy StorageCommunicating Sensors
Operational Complexity	<ul style="list-style-type: none">Asset AnalyticsAdvanced Operating Tools



Thank You!

