Northwest Hydroelectric Association Annual Conference
System Integration Panel
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February 21, 2018
Changing industry landscape

Drivers of Change

Environmental leadership policies

- SB 32
- SB 350
- Cap and Trade

Rapidly advancing technology

- Rooftop Solar: 15¢ / kWh
- Tesla Model 3: $25,000*
- Lithium-ion Prices: -73% in 6 Yrs.

Increasing customer choice and engagement

- 3,200 MW Customer Solar
- 140,000 Electric Vehicles
- 21% CCA Customers

*With state and federal rebates
Clean Transportation requires a comprehensive approach

Clean transportation includes multiple fuels across vehicle class size

Electric Vehicles

Compressed Natural Gas and Renewable Natural Gas Vehicles

Hydrogen Vehicles
California will rely on Clean Transportation fuels to decarbonize

Electric Vehicle Forecast *(millions)*

- PG&E’s share of California Clean Vehicle target

EV Adoption Implications

- EV adoption is expected to:
  - Promote CA Energy Goals
  - Generate load growth
  - Drive infrastructure investments
  - Put downward pressure on rates
Lithium-ion storage prices are falling

Battery Storage market is still in early stages of maturity.

Estimates of need for storage over the next decade range significantly

Pumped Storage Opportunities?
PG&E is investing in the grid as a platform to enable decarbonization through new distributed technologies.

Grid with IGP investment

Today’s grid

Foundational

Grid Infrastructure

Traditional electric infrastructure

Market-based platform (future?)

Markets

Distribution Market

Advanced Markets

DER Grid Services

Visibility, analytics, management and control

System Monitoring and Management

Monitoring, outage detection and automation

Today’s grid
If this is the future in California, what role can you play?