Advancing Hydrogen Fueling Infrastructure

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About Black & Veatch

- Power Infrastructure / Clean Energy
- Transformative Technologies
- Mission Critical Facilities

- 11,000+ Professionals
- 110+ offices
- Six continents
- 7,000 active projects worldwide

- $3.4 Billion in revenue in 2017

- Safety Performance
  - 0.37 Recordable Incident Rate
  - 0.06 Lost Time Incident Rate
Carrier communications network power and fiber upgrades to improve resiliency, reliability

Adaptive planning to help HECO achieve 100% renewable goal by 2045

250 MW of EV charging infrastructure; support sponsored EV charging network

Chula Vista Smart City, Re-Development planning

Utility scale, Commercial/Industrial behind-the-meter battery storage

19 Hydrogen Fueling stations across CA; Sites in progress in Northeast
Advancing Hydrogen Fueling Infrastructure
OVERCOMING CHALLENGES TO STATION DEPLOYMENT IS CRITICAL TO EXPAND NETWORK

- **Public charging critical (no home option)**
  - Need a certain threshold to launch the market

- **Equipment and installation cost**
  - Cost should decline by 2020
  - Capital investment needed to meet adoption rates and capacity projections

- **Site location**
  - Zoning and permitting can be a slow process
  - Noise and traffic impacts to surrounding communities
  - Competing uses at the sites

- **Community technology education**

- **Hydrogen production**
  - Local, using renewables
DEPLOYMENT

• Integrated engineering and construction are essential to speed to market and success to deployment

• Shared responsibility to create convenient and serviceable sites
  • Automakers
  • Fuel providers
  • Governments
  • Communities