The Changing Electric Utility Industry – Roles & Opportunities for Local Governments

Statewide Energy Efficiency Coordinator Conference, Sacramento, June 21-22, 2018
Presenters

- Howard Choy Consulting, LLC – Moderator (blurb)
- Randy Britt, Vanir (Vanir blurb)
- Gene Rodrigues, ICF (ICF blurb)
- Craig Perkins, The Energy Coalition, (TEC blurb)
- Anne Falcon, EES Consulting, (EES blurb)
THIS IS NOT A COMMUNITY CHOICE AGGREGATION PRESENTATION

(You’re welcome!)
The Vertically Integrated Utility Model…
is changing rapidly!!
Policy, Regulatory, Markets, Technology are the Drivers

NEW PROVIDERS, NEW SOURCES

IOUs, CCAs, Direct Access
Solar, Storage Cost Competitiveness
CA Carbon Free Policies
CCA Policies
Distributed, Local Generation
Load Serving Entities
Procurement Options

GRID RELIABILITY, RESILIENCE

Regional, Local Focus
Distributed Generation/Resource Advancements
Grid Need Procurement Programs
CA Carbon Free Policies

CUSTOMER CHOICES

Customer Provider Options
New Customer Technologies
- EV, DG, Storage, EE,
  microgrids, smart buildings
Carbon Free Choices
Regional/Local/Community Focus
Where Are We Headed Technologically?

- Power Quality Analysis and Energy Dispatching Control
  Fault Analysis/Load Transfer/
  System stability/Dynamic Analysis
  Active/Reactive Power Compensation Analysis

- DER-EMS SCADA System
  DER-EMS Decision System

- Communication Control Interface
  Standard (CAN Bus/DNP3/
  IEC 61850) Communication Interface
  Hardware/Software

- Advanced Distribution
  Automatic System (ADAS)

- Demonstration
  Taiwan Power Research
  Institute, TPC

- Demand Response

- Smart Home Energy
  Management System
  (SHEMS)

- Renewable Energy
  Conversion
  Active/Reactive Power Control
  Voltage/Frequency Regulation

- Distributed Generators

- Energy Storage

- EV
Where Are We Headed Market-wise?

Total DSO

Bulk System

Distribution System

Independent System Operator Markets

Coordination

Transmission Operator

DO

Distribution Owner (Network Operator)

DO

Distribution Owner (Network Operator)

Coordination

Dispatch/ Market Schedule

Physical Energy Flow

Market Coordination

Settlement M&V

Energy & Services

Energy

Energy & Services

Network Control and Monitoring (SCADA)

Utility Network

DER Control and Monitoring (Internet)

Consumer

Prosumer (DER)

Third Party (DER)

Market Data (Internet)

Indirect DER control via DO

Aggregator

*Simplified version of PNNL "Grid Architecture 2", January 2016
New Local Government Priorities in Community Energy?

Decarbonize Everything - Grid Resilience for Buildings, Campuses, Communities, Regions - Avoided Fossil Fuel Generation Grid Reliability Infrastructure Development (in your communities!)

Energy Supply Management Decisions (local vs. centralized) - Local Policy and Decision Making
New peak period requires efficiency, reduced consumption

Growing need for flexibility starting 2015

New opportunities for electric consumption under solar peak periods.

significant change starting in 2015

California ISO
What Local Gov’t Resources Are Available?

- Municipal Financing
  - PACE
- Energy, Sustainability, Planning, Community Development ORGs
- CCA Programs
  - RENs, LGPs, IOUs
- CEC
  - CARB
  - Cap&Trade
- Internal Energy Management ORGs
- Community Marketing & Outreach, Program Branding
- Energy Districts
  - Taxing Authority
- Energy Ordinances
  - Code Compliance - Enforcement
The Hard Part – Where are the Opportunities?

**GENERATION**

IOU Long Term Procurement Plans, CCA Wholesale Procurement Plans, Load Serving Entity Integrated Resource Plans

Will all include procurement of DERs as part of portfolios

**GRID**

Local Capacity Restriction Request for Offers/Proposals

Preferred Resource Pilots

Distributed Resource Programs

Demand Response Auction Mechanism

All seek DER implementation, locational specific

**END USERS**

New Time of Use Tariffs

Rolling Portfolio for EE New RENs, CCA EE Programs

CEC EPIC and AEC Grants

DER Grid Programs, EV Charging

**REGULATORY**

Integrated Demand Side Management, Integrated DERs Planning, Transportation Electrification, Storage Multiple Use, Time of Use Rates

Massive DERs to Mitigate Diablo Canyon

San Onofre and Aliso Canyon Mitigated by DERs

Grid Operator Upgrades VS. DERs Conflict Being Mitigated?

DERs Enhanced by New Technologies

DERs Going In IFOM and BTM
Why is This Important to Local Governments?

NIMBY!!!

YIMBY!!!
Let’s Talk CCAs – Are They the Answer?

How Far Can Local Control Go?

- What is the definition of “local?”
- Procure DERs under Procurement, Resource Plans locational-specific
- “Local Rates” as DERs incentives?
- Customer behavior through rate design?
- Support programs in locational-specific communities
- Partner w/ IOUs on Grid Needs Programs
- Partner with Others (LGs too!)
- Acquire Other Funds
Well It’s Happening!

- Oakland Clean Energy Initiative, Local Business Development Plan
- RCEA administers all of the region’s energy programs
- Transportation Electrification, Fire Impacted Carbon Free Redevelopment
- Local solar ordinances, transportation electrification, CPUC EE Funding
- Local Distributed Generation, CPUC EE Funding
- San Francisco Energy Authority
OK, Let’s Call Out Our IOU Partners as Well!

- LCR RFP Moorpark/Goleta
  Encouraged bids to coordinate with LGs
- Proposal to City of San Diego for 100% Renewable Energy Supply
- Oakland Clean Energy Initiative
Time to Transition

“We (Local Governments) don’t have the: resource, expertise, time, ETC”

“The IOUs won’t let us…”

“It’s not a priority for our electeds…”

You have resource, expertise in CCAs, RENs, LGSEC

Engage your financially sustainable sources of expertise

Get involved in current opportunities, can be a revenue source

Work together on a Vision with clear CCA roles, local government and others’ roles
Thank You!