Beneficial Electrification of Transportation

“The Future of Electric Transportation: Southeast Policy Forum”

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Outline

- *Beneficial Electrification* Defined
- Regulators’ Challenge
- Some Examples
- Takeaways
Isn’t all electrification created equal?

- Brattle: “Utility sales could nearly double by 2050”!
- Isn’t it all about load growth?
Beneficial Electrification (BE) - Three Conditions

1. Saves Customers Money Over Long-Term
2. Reduces Environmental Impacts
3. Enables Better Grid Management
1. Saves Customers Money Long-Term
Efficiency Across Fuel Types

2. Reduces Environmental Impacts
Power sector fuel mix is changing: MISO example

What are the marginal emissions?

Municipal waste, demand response, interface, and other fuels are marginal units less than 1% of the time and excluded from the chart above.

3. Enables Better Grid Management
Avoid High-Cost Hours

• Top 1% of hours = 9% of total spending

• Top 10% of hours = 26% of total spending

Source: Rhode Island Power Sector Transformation, Phase One Report to Governor Gina M. Raimondo (November 2017)
The Public Good – Regulators Must Balance Multiple Priorities

- Increasing EV adoption
- Equitable access
- Preserving/promoting competition
- Environmental concerns
- Reducing costs
- Fairness to ratepayers
Residential Charging

Key issues: cross-subsidization, increasing EV adoption, energy efficiency, encouraging off-peak usage

**Maryland** (Jan 2019): rebates for incremental cost of smart L2 chargers; customers must enroll in TOU

**Consumers Energy** (Jan 2019): $500 rebate for EV drivers with nighttime EV rate

**SDG&E** (May 2018): rebate for EVSE approved, utility ownership of customer-side infrastructure denied
Multi-unit Dwelling Charging

Key issues: lack of private market investment, “right to charge”, up front cost, equitable access

**Maryland** (Jan 2019):
Rebates for up to 50% of charger costs;
utilities not allowed to own EVSE

**Massachusetts**:
- Eversource (2017): 4000 “make ready” stations, 10% in low income;
- Nat’l Grid (2018): rebates for 600 L2 and 80 DCFC, performance incentive for installing 75% of target sites
Workplace and Commercial Charging

Key issues: important for a subset of EV drivers, electric ratepayers’ role?, reforming rate design

Maryland: rejected utility rebate proposals; approved 5-year demand charge waiver

AEP (Ohio) (April 2018): rebate for up to 50% of L2 charger cost, some may be located at workplaces

California (2016): approved all 3 utilities for workplace and public charging investment; since then, focused on reforming rate design
Public Charging

Key issues: preserving competition, lack of private market investment, reforming rate design

**Maryland** (Jan 2019): approved limited deployment, highlighted need to gather data on charging behavior, utilities can own and operate, must be at public properties

**NV Energy** (June 2018): Rebates for public charging on NV electric highway; must file demand charge transition tariff for DCFC
Other Transportation Electrification

Key issues: local environmental benefits, up front cost barriers, reforming rate design

California (2018):
all three large IOUs approved to implement programs to electrify airport, port, medium and heavy duty fleets, transit and school buses

Duquesne Light (PA) (Dec 2018):
$500k for DCFC for Port Authority of Allegheny County’s first electric transit buses
Takeaways

- Utility regulators are being asked to evaluate investments in EV proposals
- Regulators must balance multiple regulatory and policy priorities
- EV charging can reduce consumer costs, air emissions, and can benefit the grid
- State agency coordination can improve data, analysis, policy, and outcomes
• **Electrification** can mean innovation and opportunities for your state

• **Beneficial Electrification** is a framework to help you sort through those opportunities

• Circumstances will vary:
  • Analyze for local conditions and trends
  • ID opportunities
  • Remove barriers
  • Consider pilots
  • Educate consumers

https://www.raponline.org/knowledge-center/beneficial-electrification-of-transportation/
Thank you for your attention
Beneficial Electrification Resources from RAP

- Ensuring Electrification in the Public Interest
- Beneficial Electrification of Space Heating
- Beneficial Electrification of Water Heating
- Beneficial Electrification of Transportation
- Getting From Here to There: Regulatory Considerations for Transportation Electrification
- Utilities Can Get a “LEG” Up with Beneficial Electrification—But Regulators Also Have to be Ready
- Environmentally Beneficial Electrification: The Dawn of Emissions Efficiency (Electricity Journal)
About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

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