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Regulatory Considerations in Assessing Electrification

Developing New Models of Cost-Benefit Assessment
EPRI Electrification 2018
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Introduction

The Regulatory Assistance Project is a global, non-profit, non-advocacy team of veteran regulators advising current regulators on energy sector issues. (www.raponline.org)

Ken Colburn directs RAP’s U.S. Programs. His experience as a regulator came as NH’s Air Director, and he’s been at RAP for nearly a decade.
What’s “Beneficial Electrification”?
Isn’t ALL Electrification “Beneficial”?
Energy & Economy Have Decoupled

Source: Energy in Context, 15 March 2015
Beneficial Electrification (BE) Better Positions Utilities for the Future

1. Saves Customers Money Long-Term; More Services
2. Reduces Environmental Impacts
3. Enables Better Grid Management
Operationalizing Beneficial Electrification
New RAP Paper to help regulators:

**Beneficial Electrification: Ensuring Electrification in the Public Interest**

Sets out six principles for regulators to help ensure that electrification is beneficial to consumers, the environment, and the grid.

1. Put Efficiency First
2. Recognize the Value of Flexible Load for Grid Operations
3. Understand the Emissions Effects of Changes in Load
Electric Power is Getting Much Cleaner...

4. Use *Emissions Efficiency* as One Measure of Beneficial Electrification

![Diagram showing emissions efficiency comparison between different types of water heaters and their resource mix evolution over time.](image-url)
5. Measure Life Matters
6. Design Rates to Encourage Beneficial Electrification
TOU Rates Can Focus on System Peak

- Rate design should make customers’ choices to minimize their own bills…
- Consistent with the choices necessary to minimize system costs.

**Source:** Sacramento Municipal Utility District

Not All Smooth Sailing: Beneficial Electrification Will Encounter Policy Obstacles
Whose job is electrification, anyway?

• EVs?
  • Not regulators’ job
• EV Charging?
  • Maybe. Whose initiative? Against what criteria?
  • Utilities should propose projects (and don’t forget rate design)
• Water Heaters?
  • Ditto
• Space Heating?
  • Building codes
• Industrial Applications?
  • Probably not
Obsolete Regulatory Policies

- Remove prohibitions against electric utilities recovering costs of **fuel switching** activities where BE criteria are met (especially in ratepayer-funded DSM programs)

- Remove prohibitions against electric utilities recovering costs of **load-building** activities where BE criteria are met

- **Value** grid benefits, flexibility, non-energy benefits, etc.


Need to Re-Invent Energy Efficiency

- Revise state **EERS** to avoid kWh-consumption limits (BE reduces total energy use, but increases kWh)
- Revise state **RPS** where BE increases utility’s obligation
- **Don’t**: Implement BE as a traditional utility DSM program
- **Do**: Enable “**EE as a DER**” using modern analytics
Conclusions

• Electrification offers great promise…
  • “3D’s”: Decarbonization, Decentralization, Digitization

• Newly electrified load may buy time for utilities, but not a reprieve from business model change

• Electrification is uncharted terrain for regulators
  • Policy obstacles exist; utilities must lead
  • Opposition will occur

• “We must use less electricity where we can, so we can use more where we should.”
  (Former EPRI CEO Steve Specker)
Beneficial Electrification Resources from RAP

- Beneficial Electrification: Ensuring Electrification in the Public Interest
- Utilities Can Get a “LEG” Up with Beneficial Electrification—But Regulators Also Have to be Ready
- Beneficial Electrification: A Growth Opportunity
- Beneficial Electrification: A Key to Better Grid Management
- 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