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<td>Doubling Energy Efficiency Savings</td>
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<td>Additional Topics CVRVVO, Fuel Substitution, and Reporting Requirements</td>
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<td>6.19.17: Additional Topics: CVR/VVO, Fuel Substitution, and Reporting Requirements. Presentation by Mike Jaske of CEC</td>
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<td><strong>Filer:</strong></td>
<td>Raquel Kravitz</td>
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Additional Topics: CVR/VVO, Fuel Substitution, and Reporting Requirements

Docket No. 17-IEPR-06

Michael Jaske
Energy Assessments Division, California Energy Commission

California Energy Commission, Arthur Rosenfeld Room
Sacramento, California
June 19, 2017
Utility-Related Topics to be Covered

• Conservation Voltage Reduction
• Fuel Substitution
• Reporting Requirements
Part 1: Conservation Voltage Reduction

- Explicitly included in PRC 25310(d)(9) as a compliance option
- CVR has evolved over time to be better described as CVR/VVO, e.g., CVR/Volt-Var Optimization (CVR/VVO)
- Only one utility deploying CVR/VVO at scale although several have conducted pilots
Old Style CVR
Modern CVR/VVO
Cost-Effectiveness Issues

• CVR/VVO can readily be part of a comprehensive distribution automation upgrade, but stand alone is more costly
• Loading patterns on some feeders and whole substations may not justify CVR/VVO deployment
• Evolving relationships for generation supply can reduce utility financial benefits
Policy Issues/Next Steps

• Policy Questions:
  – *Is additional research/demonstration needed to determine whether various CVR/VVO technologies are cost effective in loading conditions of feeder configurations?*
  – *Are further statutory changes warranted to encourage CVR/VVO even when it appears to be cost-effective?*

• Next Steps:
  – *Highlight potential focus for further effort in the next utility target setting cycle*
Part 2: Fuel Substitution

• January 2017 Framework paper defined:
  – fuel substitution to mean end-use device shifts from natural gas to electricity
  – Fuel switching to mean non-utility fuels shifting to electricity

• PRC 25310(a) excludes fuel switching, e.g., transportation electrification
Fuel Substitution Requirements

• PRC 25310(d)(10) requires both end-user energy savings and GHG emissions
• Means site energy savings and source GHG emission reductions
• Does not align directly with CPUC 3-prong test for fuel substitution programs
• No utility-proposed fuel substitution programs, so issues can be studied further
Site Energy Savings

• Energy consumption of a replacement electricity device must be lower than that of the natural gas device being replaced (both measured in btu units)
• Actual heat pump performance is important
• Should existing conditions or code baseline be assumed for natural gas equipment being replaced?
Source GHG Emission Projections

- Staff proposes that the net GHG emission reduction requirement be examined using:
  - a with/without analysis of the hourly shifts in load from penetration of electricity fuel substitution measures
  - a production simulation model with proper inputs for performance of renewable generation
  - a resource mix that accurately matches the end-use customers expected to participate in the fuel substitution program
Some Implementation Questions

• Should the resource mix used to assess GHG savings be utility-specific or statewide?

• What process should be used to develop minimum heat pump performance standards and performance of displaced gas devices?

• What process should be used to reconcile the existing CPUC 3-prong test versus SB 350 EE requirements?

• Which utility obtains credit towards SB 350 EE target compliance – the natural gas utility with departing load or the electric utility gaining load?
Part 3: Reporting Requirements

- **PUC 9505 and PRC 25310(b)** establish POU reporting requirements to the CEC:
  - Annual savings estimates submitted each March 15
  - 10-year projections submitted every four years

- **PUC 454.55** refines CPUC requirements and its consultation with the CEC for SB 350
  - CPUC develops energy efficiency potential and goals projections for IOU service areas
  - CEC and CPUC are coordinating efforts

- No statutory basis for non-utilities to report
New Data Needs

• PRC 25310(e) requires the Energy Commission to report biennially to the legislature about progress toward the SB 350 goal

• In addition to a basic report on progress, the CEC has two specific mandates: impacts on disadvantaged communities, and effect by local service areas on a seasonal and hourly basis

• Both appear to require additional data from utilities
Hourly Impacts by Utility

• Since each utility’s mix of programs and measures is unique, the hourly impact of these will be unique

• POUs are not now reporting seasonal or hourly impacts nor does the modeling by CMUA’s consultant address hourly impacts

• A new effort to develop seasonal and hourly assessments is needed
Savings in Disadvantaged Communities

• Only utilities can provide data about program participation in disadvantaged communities as defined by H&S 39711
• Tracking participation by Zip Code appears to be necessary
• Some utilities may have this capability already, while others may have to develop it
Implementation Issues

• Staff would like improved information from medium and large POUs as part of March 2018 annual reports
• A collaborative effort is needed, given this tight time frame
• Regulations may eventually be required, but are infeasible in this time frame
Questions?