Ex Ante Team Feedback to Cal TF Staff: New VRF Workpaper

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Presentation Overview

CALIFORNIA TECHNICAL FORUM

Objective: Present ex ante team's feedback on issues to address in new VRF WP

- Question: Technology switch
- Issue 1: Must be statewide WP
- Issues 2: Collect data to establish baseline; don't just assume baseline
- Issue 3: Modeling tool needs to consider key system components
- Issue 4: Model needs to use DEER building prototypes and operating conditions
- Issue 5: Modeling of base vs. efficient technology, if technology switch, needs to be of similar conditions (such as part load conditions) so comparison is accurate

Technology Switch

- Observation: No other deemed measure in CA switches technologies (baseline to efficient case), although technology switches are done in custom projects
  - Question 1: Should a deemed measure allow a technology switch or should baseline be minimally compliant VRF?
  - Question 2: Is VRF even a good candidate for a deemed measure given that savings vary significantly based on configuration and operating conditions?

Issue #1: Statewide WP

- Commission directive is that all new WPs must be statewide.

Issue 2: Collect data to establish baseline

- Collect from existing projects (300 – 500 customers)
  - Building type, usage, size
  - Alternative (simplifying assumption):
    - Establish building types that VRF is going in (only 2 types), based on saturation of different technologies, estimate building type.
- For new projects, collect following:
  - Ask system designers and decision-makers
    - What configuration was installed?
    - What would customers have installed alternatively?
    - Why was VRF installed?

Issue 3:
Model Must Consider System Components

- Observation: Savings are highly dependent on equipment configuration.
- Therefore, model must be able to account for different system components, including at least:
  - Pipe length
  - Outdoor unit, including compressor and condenser fan
  - Indoor unit, including fans
  - Controls
  - Presence of ECMs and variable speed compressors
  - How outside air is configured, and distribution system design and controls

Issue 4: Model needs to use DEER Building Prototypes and Operating Conditions

- Model must use DEER Building Prototypes and Operating Conditions

Issue 5: Model must correctly construct base and efficient case

- Observation: If base case is different technology than efficient case, as is proposed, care must be taken to correctly construct and model base and efficient cases so that results are comparable.

Conclusion

- Cal TF questions or comments
- Cal TF agreement on issues/requests?