Ex Ante Review Findings

Project Information

IOU	Pacific Gas and Electric
Application ID	NC0119568
Application Date	4/4/2011
Program Number	
Program Name	Non-Residential Customized New Construction
Program Year	2012
Itron Project ID	X096
IOU Ex Ante Savings Date	
ED Measure Group Name	Whole Building
IOU Measure Name	12 supermarket measures
End Use	Lighting, heating, cooling, fans, refrigeration
Date of Review	8/20/2012, 8/26/2013
Type of Review	Desk Review
Primary Reviewer and Firm	Doug Maddox, James J. Hirsch & Associates
Review Supervisor and Firm	Nikhil Gandhi/ Strategic Energy Technologies, Inc.
ED Project Manager	[redacted]
ED Recommendation	Conditional approval subject to recommended corrections.

Measure Description

Twelve measures were evaluated for a [redacted] department store that will include a grocery component. Details of the measures and modeling methods are described in the project files: "XXXX [redacted] – Final Report.docx" and "XXXX [redacted] – Simulation Assumption Summary.docx".

Summary of Review

Verification of measures by inspection is satisfactorily documented in the document "XXXX [redacted] verification pictures.doc".

For EEM 11, ED had previously found that the measure should become part of the baseline model. The 2008 Nonresidential ACM Manual has the following requirement on page 2-81, in the section for SYSTEM: FAN-CONTROL: Modeling Rules for Standard Design (New): 'For systems 1, 2, and 5, Compliance software shall assume the same fan volume control as the proposed design.' Additionally, as stated in the Phase I EAR, the override of the variable fan operation during heating should be modeled in DOE2.2 by setting the HMIN-FLOW-RATIO to

1.0 for each zone. PG&E should revise savings estimates for EEM11 per the above guidance and resubmit savings for ED's review.

Calculation of project effective useful life as a savings-weighted composite is needed based on the final savings results.

Description	IOU Proposed Ex Ante Data	ED Recommended Changes
Project Baseline (Early Replacement, Normal Replacement, Capacity Expansion)	New Construction	Move EEM 11 to baseline.
Project Cost Basis (Full Cost, Incremental Cost)	Incremental cost	Accept
RUL	n/a	
EUL	Not stated	Use DEER values for individual measures and savings-weighted composite for the project.
kWh Savings through RUL	n/a	
KW Savings through RUL per CPUC Definition	n/a	
Therms Savings through RUL	n/a	
kWh Savings through EUL	720,334	EEM 11 to baseline
KW Savings through EUL	148.8	EEM 11 to baseline
Therms Savings through EUL	n/a	
Lifetime Savings kWh		
Lifetime Savings KW		
Lifetime Savings Therms		
Secondary Impact kWh	n/a	
Secondary Impact KW per CPUC	n/a	

Description	IOU Proposed Ex Ante Data	ED Recommended Changes
Definition		
Secondary Impact Therms		
Interactive Effects kWh	Not reported	Accounted for in DOE2.2 modeling
Interactive Effects Therms	Not reported	Accounted for in DOE2.2 modeling but not reported separately.
Net-to-Gross Ratio	Not stated	NTG interview may be conducted.

Detailed Review Findings

Reviewed Parameter	Analysis
Project Baseline	IOU Proposal: Baseline characteristics are summarized in the following files: "[redacted] – Final Report.docx" "[redacted] – Simulation Assumption Summary.docx"
	ED Assessment: Baseline fan control should match proposed for packaged single zone systems.
	ED Recommendation: Set baseline to VAV with VSD to match proposed.
Project Cost Basis	IOU Proposal: Incremental estimated costs for all measures are listed in "XXXX [redacted] – Final Report.docx" $149,700 for full set of measures under consideration.
	ED Assessment: EEM 11 should be removed.
	ED recommendation: Remove EEM 11.
RUL	IOU Proposal: Not applicable

Reviewed Parameter	Analysis
	ED Assessment: None
	ED Recommendation: None
EUL	IOU Proposal: None
	ED Assessment: 10 to 20 years for most measures per DEER 2008.
	ED Recommendation: Report EUL for each measure and a composite savings-weighted EUL.
Savings Assumptions	IOU Proposal: Savings assumptions are summarized in the following files: "XXXX [redacted] – Final Report.docx" "XXXX [redacted] – Simulation Assumption Summary.docx"
	ED Assessment: Basic assumptions are reasonable.
	ED Recommendation: Accept
Calculation Methods/Tool review	IOU Proposal: DOE2.2 analysis summarized in "XXXX [redacted] – Simulation Assumption Summary.docx"
	ED Assessment: Most of the analysis is reasonable. The analysis of the variable speed supply fan measure would be improved by use of the heating minimum supply flow keyword (HMIN-FLOW-RATIO) in DOE2.2.
	ED Recommendation: Conditionally Accept subject to adding HMIN-FLOW-RATIO as described in the Summary of Review section.
Pre- or Post-Installation M&V Plan	IOU Proposal: "XXXX [redacted] – Inspection Criteria.doc". Post-installation verification has been conducted via inspection.

Reviewed Parameter	Analysis
	ED Assessment: Verification documentation is complete.
	ED Recommendation: Accept.
Net-to-Gross Review	IOU Proposal: Not stated
	ED Assessment: NTG interview may be warranted.
	ED Recommendation: NTG interview may be conducted.