CPUC Staff Ex Ante Review

CPUC Staff Project ID Number	PGE_20_C_C_520_Site Specific Project - 5151_NMEC
CMPA Directory Link	https://deeresources.info/cmpa/projects/17352
PA	PGE
PA Application ID	Site Specific Project - 5151
PA Application Executed Date	2/14/2020
PA Program ID	COWBDPGE19
PA Program Name	Commercial Calculated Incentives ? Whole Building
PA Program Year	2020
Date of CPUC Staff Review:	1/4/2021
PA CMPA Upload Dates Included in this review:	
First PA Upload	6/10/2020
Second PA Upload	10/27/2020
Third PA Upload	11/18/2020
PA Measure Description(s):	
Measure 1	NMEC Whole Building
Measure 2	
Measure 3	
Measure 4	
Measure 5	
Measure 6	
Measure 7	
Measure 8	
Measure 9	
Measure 10	
PA Project Description:	0
PA Ex Ante kW Demand Reduction	23.0
PA Ex Ante Annual kWh Impacts	98,818.0
PA Ex Ante Annual Therm Impacts	4,768.0
PA Proposed Incentive $ (to Customer)	$24,802.16
PA Proposed Total Payment to Implementer $ (not to include the above incentive to customer)	0
CPUC Staff Approved Ex Ante kW Demand Reduction	
CPUC Staff Approved Ex Ante Annual kWh Impacts	
CPUC Staff Approved Ex Ante Annual Therm Impacts	
CPUC Staff Primary Reviewer Name	
CPUC Staff Primary Reviewer Firm	SBW Consulting
CPUC Staff Review Supervisor Name	
CPUC Staff Review Supervisor Firm	BMI
PA Primary Reviewer Name	
PA Primary Reviewer Firm	
CPUC Staff Project Manager	
CPUC Staff Policy Authorization (as needed)	
CPUC Staff Recommendation Marked "X":	
	Application ready to proceed without exception
	Application ready to proceed with exception(s), as noted
	Application rejected.
x	Advisory only

Action Number:	Summary of CPUC Staff Required Action by the PA:	Action Category	Due Date	Summary of CPUC Post M&V Review Required Action by the PA:
1	Site specific NMEC project under PG&E Commercial Whole Building program. Review of projects done under designated NMEC programs are advisory only. Please upload first year savings report with supporting analysis and documenation at the conclusion of the first year performance period.	Continue document upload	Conclusion of first year performance period	Report provided. The calculation of fractional savings uncertainty (FSU) does not appear to be accounting for autocorrelation: using n instead of using n' , thereby underestimating the uncertainty in the daily models. The combined uncertainty of the baseline and reporting period models should be calculated through a root sum squared (RSS) calculation per ASHRAE Guideline 14 to obtain the overall uncertainty. Suggest checking the FSU calculations and updating as necessary. To facilitate future ex-post evaluation purposes please provide the daily and hourly model output data under both historical and normalized operating conditions.

2	NMEC Rulebook v.2 section C (3) states *"Baseline adjustment model must be assessed for goodness-of-fit (GOF). See LBNL Technical Guidelines for proposed thresholds."* LBNL Technical Guidelines v. 2 section 2.0 provides GOF statistic thresholds of CV(RMSE) < 25%, NMBE between -0.5% and +0.5%; and R^2 > 0.7. Submitted daily kWh baseline model GOF statistics are NMBE 0.0%, CV(RMSE) 3.6% and R^2 = 0.96. Hourly demand model GOF statistics are NMBE 0.0%, CV(RMSE) 6.6% and R^2 = 0.96. An independent analysis using ECAM provided similar results. Electric model GOF criteria are met. Submitted daily gas baseline model GOF statistics are NMBE 0.0%, CV(RMSE) 19.5% and R^2 = 0.89. An independent analysis using ECAM could not replicate these results. ECAM provided a CV(RMSE) of 27.6% which closely matches the CV(RMSE) = 28% shown in the Pre Screen report. Please verify the gas model CV(RMSE) calculations are correct and in compliance with the LBNL GOF criterion. If gas model CV(RMSE) exceeds the LBNL criterion, provide a narrative description to justify use of NMEC model for estimating gas savings.	Calculation method	Conclusion of first year performance period	Gas savings removed from the project due to poor gas model GOF statistics. No further action required.
3	Engineering estimates of therm savings do not include HVAC interative effects from lighting measures. Suggest including the HVAC interactions from lighting in the total gas savings calculation.	Analysis assumptions	N/A	Gas savings removed from the project due to poor gas model GOF statistics. No further action required.
4	Error noted in baseline lighting run hours. Existing hours should be reduced to account for existing lighting controls.	Analysis assumptions	N/A	Lighing calculations revised. No further action required.
5	ECM 1 Lighting measures consist of a combination of LED fixtures and screw in lamp replacements. EUL of 16yr used in project EUL calculation. Revise project EUL calculations using DEER EUL of 12 yr for LED fixtures and 5.1 to 10.2 yr for LED lamps based on lamp rated life.	EUL/RUL	Prior to savings claim	Project EUL updated. Note the savings weighted EUL should use the revised lighting savings calculations
6	ECM 3 Boiler controls are an add-on equipment (AOE) measure application type (MAT). EUL should be based on the remaining useful life (RUL) of the host equipment. DEER RUL for hot water boilers is 6.7yr. Revised the project EUL using 6.7yr for the boiler control measure.	EUL/RUL	Prior to savings claim	Gas savings removed from the project due to poor gas model GOF statistics. No further action required.
7	ECM 2 make up air unit ventilation rate turn down does not meet code minimum ventilation rate. 2019 Title 24 requires 0.15 cfm/square foot in office occcupancies. Turn down specifications provide 0.12 cfm/SF in Full Vent and 0.10 cfm/SF in Mid Vent mode which does not meet Title 24 requirements. The Statewide Custom Project Guidance Document Section 2.3.2 (7) Installations Adhere to Laws and Codes states *"All measures(s) must be installed in accordance with all applicable federal, state, and local laws, building codes, manufacturers' specifications, and permitting requirements."* Suggest revising ECM 2 savings calculations to include motor efficiency savings only. Note: Design flow of makeup air unit of 0.14 cfm/SF is slightly below the code minimum ventilation rate.	Eligibility	N/A	Space ventilation rate is controlled by CO2 sensor mounted in the return system Setpoint is 1000ppm CO2. ASHRAE ventilation criteria met. No further action required.
8	ECM 3 Heating boiler load based on difference between buiding and outdoor drybulb temperarure assuming a 70F balance point. Balance point temperature for commercial building should be lower than heating setpoint due to solar heat gains and internal heat gains from lighting and equipment. Suggest recalculating the balance point temperature based on solar and internal loads and revising the heating consumption and measure savings calculations. Note: total baseline gas consumption calculated for heating and service hot water is about 8.5% higher than baseline gas billing data.	Analysis assumptions	N/A	Gas savings removed from the project due to poor gas model GOF statistics. No further action required.

9	ECM 3 Energy savings from boiler scheduling is based on reduction in run hours only and does not account for energy required to return the building to operating temperature (pick up load). Energy savings from boiler scheduling may be over-estimated. Suggest adding pick up load energy consumption to calculations and recalculating gas savings for this measure.	Calculation method	N/A	Gas savings removed from the project due to poor gas model GOF statistics. No further action required.
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Note or Instruction Number:	CPUC Staff Notes or Instructions:	Instruction Category	Due Date
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CPUC Staff Recommendation Definitions	
CPUC Staff Recommendation	**Definition**
Application ready to proceed without exception	The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. A project is waived from further review at the post-installation stage by CPUC staff, but the PA is responsible for post-installation (IR) review. There will not be conditional approval.
Application ready to proceed with exception(s), as noted	The PA must make revisions or changes as noted in CPUC Staff's review comments. The PA will continue to upload application documents to the CMPA directory through the implementation and claims phases of the project. The PA may proceed to approve the project without waiting for CPUC Staff response. If CPUC Staff decides to perform IR review of a project, CPUC Staff will notify the PA. The scope will be limited to determine if the project was carried out consistent with the application and notes provided during pre-installation review and to obtain information pertaining to whether the eligibility criteria or metrics should be revised. Unless the scope of work presented in project application has changed at IR review, the project will not be reviewed again in the areas specified below. Scope change is defined by substantial changes include significant modifications to the proposed equipment type, size, quantity, configuration, the expansion of a project to include additional retrofits, or the splitting of a project into multiple phases. The following areas will not be reviewed again by CPUC Staff: • Calculation Tool • Calculation Methodology • M&V Plan • Baseline • Eligibility • EUL/RUL • Measure Type • Program Influence
Application rejected.	The application is rejected as submitted. The PA shall promptly inform the applicant as to the reasons why the project was rejected and the specific recommendations for the conditions under which the project would be approved. CPUC Staff shall provide the reasons for the rejection or request for modification, including each basis as to why the project is rejected, or modification is requested. In addition, CPUC Staff shall provide specific recommendations for the conditions under which the project would be approved. If any party to the project is unsatisfied with the Commission's directions for the project, a dispute resolution process may be initiated by that party. The Commission shall adopt rules for the conduct of the dispute resolution process. – Section 381.2 (g) (3) (F)
Application not ready for review, revised and resubmit as noted	The application has deficiency in the supporting documentation and the PA has provided incomplete documentation. The complete documentation has been defined in the Statewide Custom Projects Guidance Document. Please note that this is not a final recommendation from CPUC staff. This recommendation is limited to two requests per application.