

PG&E Manual for Commercial and Public Sector Whole Building Performance Based Retrofit Program Offering

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1. Program Overview

Pacific Gas & Electric's (PG&E) Whole Building Performance Based Program Offering has been designed to leverage smart meter investments while bringing the benefits of site-level Normalized Metered Energy Consumption (NMEC) to Commercial and Public Sector buildings. Site-level NMEC represents a new approach in energy efficiency by measuring, tracking, and incentivizing savings delivered at the meter. This program offering complements an owner's investment in energy efficiency by allowing participants to track savings and assure the long-term performance of their energy efficiency investments. It may also support their climate action plans. This comprehensive program manual describes the roles, requirements, and processes of the Whole Building Performance Based Program Offering.

1.1 Objectives

The normalized metered energy consumption approach has the potential to capture stranded savings and to improve the quality and reliability of projected energy savings in existing buildings. The Commercial and Public Sectors present unique characteristics that provide savings opportunities that can be measured through the NMEC approach proposed in AB 802¹. These opportunities include:

- **Accurately Quantifying Savings at the Meter** – Using industry accepted methods based on analysis of metered energy use data taken before and after energy efficiency measures (EEMs) are installed provides the most accurate determination of actual savings achieved by each project.
- **Help to Ensure Energy Savings Persistence** –The ability to track savings from EEM investments can help ensure participants meet their economic objectives. The monitoring component of the Program will provide regular feedback that will quickly shed light on projects that met or exceeded their financial performance requirements. In addition, metering and monitoring provide the feedback to help proactively manage buildings to ensure persistence consistent with the focus on Strategic Energy Management.
- **Reduce the Complexity of Multi-measure Projects for Existing Buildings** – Participants can take a comprehensive approach to energy efficiency, rather than completing applications for RCx, retrofit, and behavioral programs. The NMEC approach can greatly reduce participant transaction costs, while capturing comprehensive savings. A single point of entry and program process will greatly reduce administrative, implementation, and M&V costs.
- **Improve Delivery Timelines** – Separate applications, separate approvals, and separate processes will be eliminated through a single meter-focused energy savings measurement approach for all aspects of the building use. This will include retrofits, tuning, and any behavioral measures identified through the performance/meter-based approach. Pre-installation engineering analysis and review will be more efficient and less exhaustive since savings are derived through NMEC rather than through pre- and post- installation calculations.
- **Provide the Opportunity to Participate in Automated Load Management Benefits** – Facilities upgraded with controls and sensors benefit from participation in Peak Day Pricing and Demand Response programs. This participation is over and above energy savings so does not adversely affect business operations. This capability also qualifies customers for Integrated Demand Side Management (IDSM) financial benefits in addition to energy saving benefits.

The shift to NMEC has the potential to yield greater and more permanent savings, making energy efficiency a resource that can be relied upon. PG&E has developed this Program to eliminate barriers, improve transparency, ensure persistence, and increase overall energy savings. Details on how the Program will meet the Commercial and Public Sectors' needs, while delivering cost-effective and persistent energy savings is described below.

1.2 Roles & Responsibilities

A description of the role of each party and Customer are shown in the table below.

Table 1 – Role and Responsibilities

Roles	Responsibilities
Customer	An eligible ratepayer that receives energy services from PG&E and pays into the Public Purpose Program (PPP) surcharge.
Program Manager (PM)	The PG&E PM manages all aspects of the Program and makes final decisions.
Account Representative	The PG&E account representative is responsible for making Program presentations and assisting customers with various related Program applications, status reports, or other related assistance.
Program Implementer	<p>The Implementer may be a Trade Pro, or an authorized PG&E representative, or may be part of a Customer’s staff or engaged by the Customer and is responsible for:</p> <ul style="list-style-type: none"> • Identifying/Screening projects • Identifying EEMs and preparing the Feasibility Study • Preparing project M&V Plans • Verifying measures and completing Project Installation Reports • Tracking energy performance and identifying non-routine events and impacts • Preparing savings reports throughout the performance periods • Responsible for ensuring that all required project documentation is submitted correctly and responding to any concerns in the project reviews.
NMEC QA/QC	<p>The NMEC QA/QC Reviewer is a designated PG&E representative responsible for:</p> <ul style="list-style-type: none"> • Reviewing the M&V plan, including pre-screening data and analysis, data preparation procedures, and baseline energy models • Reviewing the Feasibility Studies, M&V Plans, Project Installation Reports, and other project documentation to ensure project viability • Reviewing periodic savings progress reports • Reviewing NMEC Savings Reports
Custom Implementation Team (CIT) QA/QC	The CIT QA/QC Reviewer is a PG&E engineer responsible for assuring NMEC rules and processes are followed.
PG&E Assigned NMEC Technical Reviewer	Reviewer is a PG&E assigned internal or third party engineer responsible for reviewing project scope, savings calculations, and other project documentation to ensure compliance.
Utility Administrator	PG&E administers the Program in its service territory.

1.3 High Level Program Process

The Program process, at its highest level, is shown in the table below.

Table 2 – Program Process

Step	NMEC Phase	Requirement	Description
1	Baseline	Project Screening	<p>The Account Representative in coordination with the Implementer will:</p> <ul style="list-style-type: none"> Inspect the site and review the Customer’s past participation Determine if sub-metering is necessary Pull/compile meter data Identify a high-level measure list & savings opportunities, including controls-based solutions to qualify as IDSM resources. Note the presence of, or potential occurrence of non-routine events throughout the project lifecycle Provide Program participation requirements to the Customer <p>Deliverables:</p> <ul style="list-style-type: none"> Customer Baseline Screen report - Includes baseline regression model and baseline documentation
2	Baseline	Deep Dive Analysis	<p>Once a project passes screening, Implementer will develop a feasibility study that:</p> <ul style="list-style-type: none"> Provides a facility description Identifies measures or measure combinations that are projected to attain a minimum of 10% overall energy savings at the facility, including behavioral, retrocommissioning, and operational (BRO) and capital measures. A minimum of one retrofit measure with a payback of 5 years or more must be part of the project as well. Estimates EEM savings and provides calculations, descriptions of assumptions, and data used. Documents individual measure costs Develops a weighted average of selected EEMs to create project Effective Useful Life (EUL) Shows the weighted useful life of the EEMs is longer than the project’s simple payback term Projects with estimated incentives less than \$5,000 are ineligible.
3	Baseline	Project Submission	<p>The Implementer will develop an M&V plan describing measures to be installed, NMEC M&V to be completed, per Program M&V Plan. It also requires static factors to be identified and monitored throughout the project. Changes in static factors may require non-routine adjustments to the savings estimations. M&V Plans must also assess impacts on building energy use due to the COVID pandemic and describe how its effects will be removed from the savings analysis.</p> <p>Deliverables:</p> <ol style="list-style-type: none"> M&V Plan Feasibility Study Report based on Deep Dive Analysis,

Step	NMEC Phase	Requirement	Description
			<p>containing the projected NMEC Payments with customer signature</p> <ol style="list-style-type: none"> 3. Data and live calculation files (spreadsheets, modeling code, etc.) 4. Influence Documentation, including marketing and sales collateral used 5. Three-Year Maintenance Plan for BRO measures 6. Small Business Certification (if applicable) 7. Customer Audit 8. Custom Application
4	Baseline	Project Review	<p>The Custom Implementation Team (CIT) Reviewer will review the measures according to rules described in the CPUC’s Rulebook for Programs and Projects Based on Normalized Metered Energy Consumption, project documentation and may direct that a pre-installation on-site visit be conducted to verify baseline conditions.</p> <p>The PG&E-assigned NMEC Technical Reviewer reviews the Project Submission package and verifies site-level NMEC procedures are properly developed, analyzed, and documented. The NMEC Technical Reviewer may elect to obtain baseline period data to confirm baseline models and goodness of fit metrics. The Reviewer may conduct a pre-installation site inspection to verify existing conditions. The Reviewer will review the site-level M&V Plan according to the Program M&V Plan, the Program Manual, and PG&E’s Rulebook.</p> <p>The Custom Implementation Team Reviewer and PG&E-assigned NMEC Technical Reviewer shall reasonably coordinate site inspections to minimize disruption in customer’s operations.</p> <p>Project equipment may not be ordered, purchased, or installed before PG&E has provided its written Project Approval Agreement Letter. For facilities requiring sub-metering, data will be continually monitored. The Program Manager may approve the Customer to begin procurement of equipment prior to receiving the full 12 months of sub-metered data if accurate baseline modeling is demonstrated. There is no guarantee of a Project Approval Agreement Letter and no installation can take place until a Project Approval Agreement Letter has been issued.</p>
5	Baseline	Project Approval	<p>Upon satisfactory completion of the Project Review, PG&E shall issue a Project Approval Agreement Letter as its notice of approval for the project. The Project Approval Agreement Letter shall include (i) a confirmation of the projected energy savings and demand reduction, (ii) confirmation of the estimated incentive of the project based on projected savings, and (iii) provides an Approval to Proceed, subject to terms & conditions set forth in this Manual and the Program Application.</p> <p>Upon receipt of the Project Approval Agreement Letter, PG&E funding for NMEC Payments for the facility will be committed, and the Implementer may proceed with installation.</p> <p><i>Projects participating in the Program that are selected for Energy Division review may proceed independent of the Energy Division review once the Project Approval Agreement Letter is</i></p>

Step	NMEC Phase	Requirement	Description
			<p><i>received. PG&E may issue a Project Approval Agreement Letter for projects independent of selection for Energy Division review. PG&E does not require Energy Division approval prior to issuing a Project Approval Agreement Letter to a project.</i></p> <p>Deliverables:</p> <ul style="list-style-type: none"> • Project Approval Agreement Letter
6	Installation	Project Post-Installation Report(s)	<p>The Implementer submits a Project Post-Installation Report, to the Program Manager after all Project measures have been installed, fully commissioned, and are fully operational. The Project Post-Installation Report Package must include:</p> <ul style="list-style-type: none"> • Documentation of installed measures and correct operation • A final estimation of the savings of the installed measures. This includes revising individual savings estimates for measures that were installed differently than planned. • Updated data and live calculations, for measures not installed as assumed in Feasibility Study • Updates to the 3-year maintenance plan for BRO measures • Customer written acknowledgment of installation, • The proposed Performance Period start date as the date that the final measures were installed and verified as operational • Large projects (projects that are expected to receive over \$50,000 in incentives for annual normalized savings) have an additional requirement to assure savings are accruing. The achieved savings at 3 months shall be determined using an avoided energy use calculation (see program M&V Plan). For these projects, the Project Post-Installation Report shall document the estimated savings of the installed measures and the 3-month achieved savings. <p>Deliverable:</p> <ul style="list-style-type: none"> • Project Post-Installation Report <p>Note that some project circumstances may make the determination of the post-installation expected savings difficult and the Program Manager may direct alternate methods to determine savings at their discretion.</p>
7	Installation	Installation Review	<p>After receiving the Project Installation Report from the Program Manager, the NMEC Technical and Custom Implementation Team Reviewers will evaluate the submittal package and may, in coordination, conduct a post-installation, on-site inspection to verify project installation and ensure the scope of work has not altered from the agreed-upon project. A final estimation of the savings of the installed measures must be provided. This includes checking savings calculation assumptions and revising individual savings estimates for measures that were installed differently than planned. If approved, a Notification of Approved Installation with the approved Performance Period start date will be issued.</p> <p>Deliverable:</p> <ul style="list-style-type: none"> • Notification of Approved Installation
			<p>After PG&E issues the Notification of Approved Installation, the Customer, implementer, or the designated payee becomes eligible for the applicable NMEC Payment. The Customer or Implementer will monitor and maintain each implemented measure's performance,</p>

Step	NMEC Phase	Requirement	Description
8	Performance	NMEC Payment	<p>check for NREs, and provide updates throughout the performance year.</p> <p>Project savings are based on the 12-month Savings Report, as this report is based on the complete data set required per the CPUC Rulebook. The total project incentive payment is based on the 12-month Savings Report. Preliminary incentive payments are made based on the Post-Installation Report. Payment calculations are described in Section 3.</p> <p>After installation, the first incentive payment is paid based on the estimated annual savings of the installed measures, capped at 40% as documented in the Post-Installation Report.</p> <p>At 12 months, all projects are required to determine the normalized savings based on 12 months of baseline period energy use and 12 months of performance period energy use, and thoroughly document the analysis in the 12-month savings report (see program M&V Plan). The project's second incentive payment is based on the 12 month normalized savings, less any prior incentive payments. The project incentive is capped at 80% of the project's total cost.</p> <p>The NMEC Technical Reviewer will review each report and advise the PG&E PM whether to pay the NMEC Payments for each submission.</p> <p>Deliverables:</p> <ul style="list-style-type: none"> • Project Post-Installation Report* • 12-month Energy Savings Report (per M&V plan, Implementer)* • Post-Installation NMEC Payment (PG&E) • 12-month NMEC Payment (PG&E) <p>* projects with incentives over \$50,000 kWh require a savings progress report based on 3-months of energy data.</p>
9	Baseline, Installation, Performance	Non-Routine Events	<p>During the entire project life, from the beginning of the baseline period to the end of the post-installation performance periods, the Customer or Implementer will be required to notify PG&E of significant changes to the building that impact energy consumption. This includes changes to static factors identified in the M&V Plan as well as other significant changes, if any.</p> <p>Deliverable:</p> <ul style="list-style-type: none"> • Notification of non-routine events (Customer or Implementer)

2.1 Program Process Detail

2.1 Eligibility

Customer screening to determine fit with the Program offering is important as it is a departure from past approaches in that performance payments are tied to the persistence of savings over time⁵. Projects considered for the Program offering must include a comprehensive approach including retrofit, load management controls, retrocommissioning and optimization to reach the 10% energy reduction threshold. Less than 10% energy reduction may be allowed on an exception basis by the PG&E Program Manager if documentation includes a rationale and explanation in the project-level M&V Plan of how savings will be distinguishable from normal variations in consumption and is deemed acceptable by PG&E.

Customers with less experience or understanding may not be comfortable with the inherent risks of the NMEC approach. Potential participants, not accompanied by a Program Implementer, will be screened to assist in identifying appropriate buildings and provided with a list of Program Implementers. For a project to be accepted by the Program offering, each facility will undergo the formal Project Screening process.

PG&E has developed this Program Offering with the intention of eliminating barriers, improving transparency, verifying persistence, and increasing overall energy savings. The Program offering's design produces a more comprehensive approach focused on savings persistence. Key interventions include:

- Facilitating the availability of technical support by including facility audit costs as an approved component of a project capital cost, to assist resource constrained customers to identify savings and building management opportunities;
- Providing a simplified and streamlined participation process to encourage comprehensive projects;
- Introducing a pay for performance approach that shifts energy efficiency incentives to the actual measured achievement of savings over the detailed up-front savings estimates and payments;
- Facilitating the installation of metering or sub-metering by including these costs as an approved component of a project's capital cost, and provide the data required to determine savings. Through energy monitoring, the program offering helps business owners maintain performance over time, and potentially drives greater energy efficiency by showing the direct ongoing economic impact of measures in existing buildings;
- Enabling projects on specific building subsystems through installation of energy sub-metering.

Compensation is provided to assist customers with Program participation costs through a performance Payment mechanism (NMEC Payments):

- NMEC Payments are paid after installation and at 12 months after measures have been installed and verified as operational, with final payments triuing up to the actual NMEC savings at 12 months
- Customer audit costs for the Program are captured in total project costs
- Ongoing monitoring and feedback of Program related savings from implemented recommendations will extend for a duration of one year, and PG&E may make ad hoc data requests for up to three years following project completion in addition to required quarterly reports.

NMEC Payments will be monitored through the review process to ensure the Program Offering such payments do not exceed the Program cap of 80 percent of project cost. Program tracking and reporting forms that document savings, incentives, and total project costs will demonstrate that Program costs and NMEC Payment thresholds have been satisfied.

2.2 Project Screening

The purpose of the screening process is to confirm eligibility for the Program Offering by confirming that energy savings opportunities and related projections meet or exceed 10 percent savings and that metered energy and other data show a likelihood that savings will be statistically significant (Less than 10% energy reduction is potentially allowable on a case-by case basis provided it is addressed in the Project M&V plan and approved by the PG&E Program Manager).

2.2.1 Project Screening Checklist

The Project Screening Checklist gathers general information to help establish eligibility for the Program Offering. The Implementer will complete the checklist with assistance from the Account Representative and Customer. If the building meets Program requirements, the project will proceed to Screening. If the building does not meet the Program requirements for participation, the PG&E Account Representative will identify a more appropriate program offering. The checklist below highlights the Minimum Requirements that must be met and a set of pre-defined desired characteristics to consider.

Account Representatives, Customers, Program Implementers or Program Managers may want to capture additional attributes that make the project particularly desirable. For example, a building that already has the necessary metering infrastructure in place and can readily gather 12 months of baseline data may be helpful to the project's timely completion.

Minimum Requirements

- Expected project savings must exceed \$5,000 in NMEC Payments
- Building size must exceed 50,000 square feet
- Install whole building level metering capable of collecting 60-minute interval data
- Agree to participate in a three-year Maintenance Plan for BRO measures

Desired Characteristics

- Systems level of control (e.g. HVAC level controls)
- Majority of the space is conditioned
- More than 2,500 operating hours
- Not designated for major re-design or re-use or other significant changes to building equipment or operations
- Buildings where most equipment may be beyond its useful life

The Implementer with support from PG&E Account Representative as needed will facilitate gathering customer energy usage data for buildings that have PG&E AMI meters installed. In cases where the data are collected through a customer owned meter, the customer will provide the available data to PG&E for analysis.

2.2.2 Metered Data Requirements

Projects require the collection of energy data. It is preferred that the energy data is measured in short time intervals. 15-minute, hourly, daily or monthly billing period data are acceptable, as long as accurate energy models may be developed. Data must be collected for 12 months prior to implementation through at least

12 months following implementation. PG&E may make additional ad-hoc data requests during the 36-month period following installation. Weather and other data correlated with energy usage will also be collected to normalize energy consumption data. Other data related to occupancy or building operations may be collected for use in the NMEC analysis may be required. Data collection needs will be determined with the Program Implementer or customer during the screening process.

As described in the PG&E M&V Requirements for Site-Level NMEC, Customers that use their own meters for energy baselines and savings estimation must submit the meter manufacturer’s specifications, and its recommended installation and calibration procedures. Customers are also required to submit calibration records that verify the installed meter is generating measurements within the manufacturer’s specifications. Calibration records shall report on the meter’s bias and precision error. The table below, taken from the CPUC NMEC Rulebook 2.0, provides recommended maximums for bias and precision error for meters anticipated in this program.

Table 3 - Recommended Maximums for Bias and Precision Errors for Meters

Energy Source	Meter Type	Minim Accuracy
Electricity	Solid State True Root Mean Square electric meter or watt transducer. ¹	+/- 0.5% of reading including current transformer accuracy and corrections for installed conditions.
Natural Gas	Positive displacement.	+/- 2% of reading.
Chilled Water / Hot Water	Solid state Btu meter ² with temperature sensors and flow meter.	Temperature sensors: +/-0.15F from 32F - 200F. Flow meter: +/- 2% of reading over expected flow range. Calculator accuracy: +/- 0.1% at 30F delta T. Btu measurement: 4% full scale
Steam	Solid state Btu meter ³ with a vortex shedding flow meter, pressure and temperature sensors.	Mass flow meter: +/- 2% of mass flow calculation. Btu measurement: 4% full scale.

The CPUC Rulebook states that other meter types may be permissible, subject to Energy Division staff approval. **In cases where customers do not have solid state Btu meters but have individual water flow and supply and return temperature sensors, the guidance specifically prohibits calculations of Btus based on instantaneous measurements of flow and temperatures. In these cases, the implementer may propose alternate methods to measure Btus and request approval.**

The quality of data shall be evaluated to ensure it is continuous and contains few repeated values, outliers, or abnormal amounts of zeroes. These erroneous outliers and zeroes can result from data transmission errors or other non-measurement-related factors. All data cleaning and preparation steps shall be documented in the Customer pre-screen report.

2.2.3 Preliminary Measure List & Savings Requirements

During the screening process, Customer will submit a list of measures being considered for further investigation. This preliminary list of measures must demonstrate energy savings of least 10 percent of total usage (unless granted an exception for less than 10% by PG&E, at which point an alternative threshold must be met) and **include at least one retrofit with a payback of five years or more.** Savings and cost

¹ Meters must consider bidirectional power flow when equipment is capable of supplying power to the grid.

² Continuous integration of flow and temperature difference required to measure delivered energy (Btu). Energy calculations based on Instantaneous measurements of flow and temperature not acceptable.

³ Continuous integration of mass flow, pressure and temperature required to measure delivered energy.

values will be budgetary at best since the audit will provide more detailed and accurate information regarding savings opportunities and their costs. The purpose this requirement is that the applicant understands that they must propose a portfolio of energy efficiency measures that will achieve 10 percent savings or better (unless granted an exception by the PG&E Program Manager). An example of potential Program measures is provided below in Table 3.

Table 4 – Examples of Potential Program Measures

Retrofit Examples	BRO Measure Examples
<ul style="list-style-type: none"> Constant to variable air volume in HVAC 	<ul style="list-style-type: none"> Scheduled Loads
<ul style="list-style-type: none"> Replace Pneumatic system with a DDC Building Automation System (BAS) 	<ul style="list-style-type: none"> Economizer/Outside Air Control Based on Occupancy
<ul style="list-style-type: none"> Variable Frequency Drives (VFDs) Add-On 	<ul style="list-style-type: none"> Controls: Retro-Commissioning
<ul style="list-style-type: none"> Boiler Replacement 	<ul style="list-style-type: none"> Controls: Setpoint Changes
<ul style="list-style-type: none"> RTU Replacement 	<ul style="list-style-type: none"> Controls: Reset Sequences based on Demand
<ul style="list-style-type: none"> Fume Hood Upgrades/Replacement 	<ul style="list-style-type: none"> Minimizing Simultaneous Heating and Cooling
<ul style="list-style-type: none"> AHU Replacement 	<ul style="list-style-type: none"> Dual Maximum VAV control sequences
<ul style="list-style-type: none"> Chiller Replacement 	<ul style="list-style-type: none"> Demand Control Ventilation
<ul style="list-style-type: none"> Primary-Secondary to Primary Only CHW loop Conversions 	<ul style="list-style-type: none"> Optimum Start/Stop Control Sequences
<ul style="list-style-type: none"> LED Lighting Retrofits⁴ (see footnote for eligibility) 	<ul style="list-style-type: none"> Dual Minimum Economizer Controls

Other possible behavioral measures could include, but are not limited to the following:

- Encourage task lighting rather than overhead
- Turn off monitors
- Power down computers entirely (for security and energy benefits)
- Close windows and/or draw shades
- Occupant thermal feedback smartphone apps (engagement)
- Optimizing building scheduling - open hours, concentrate activity in certain zones
- Improve signage on light and fan switches
- Remove or replace plug loads (hotplates, coffee machines, etc.)

Note: To-standard practice measures are permissible so long as there is documented influence.

2.2.4 Baseline Screening Evaluation and Goodness of Fit

A facility’s energy use patterns will be pre-screened to determine whether baseline energy use models may be developed that may accurately estimate savings within acceptable criteria at the end of the performance period. This requires that a year of energy use data be collected, and concurrent data for independent variables used in the model (usually ambient dry-bulb temperature, building occupancy or operation periods, etc.). A statistical model, usually a regression model, is developed and its goodness of fit metrics

⁴ **Lighting Eligibility:** Lighting fixtures must be on the DLC OR allowable via deemed and calculated energy efficiency programs.

are calculated and compared to the Program's acceptance criteria.⁵ When an energy use model meets the criteria, the building passes this screening threshold and confirmation is provided by PG&E.

The data used for pre-screening may not necessarily be from the period that defines the baseline period. The Program Offering requires that at least 12 months of data immediately prior to the start of measure installation will be used to develop baseline energy models. There is usually some delay while agreements are signed, measures are identified and quantified, M&V plans are developed, and measure installations begin. The actual baseline period is defined once the installation period starts. For the Program Offering,

we use a CV(RMSE) of 25%, and an NDBE of 0.005% to determine whether a baseline energy model is accurate. Buildings in which the baseline CV(RMSE) value is greater than 25 percent may need to adjust their models, install more direct metering or consider other EE programs. Pre-screen reports are required to provide:

- Summary of Baseline Screening findings
- Description of the data used, their sources (including weather stations), and a description of data quality (number of missing and erroneous values, etc.)
- Summary description of modeling algorithm used, including analysis time interval, model training period start and end dates, independent variables used and any notes to help clarify how the models were developed
- Summary table of model goodness of fit metrics for each model used (may be more than one).
- Supporting charts (time series, scatter charts, etc.) showing how model predictions compare with actual data, including any supporting data, such as from independent variables.

2.3 Project Feasibility

Once a project has passed Baseline Screening, the Implementer will proceed to formalize the project scope by completing a Project Feasibility Study. The following sections provide an overview of the investigation process and Feasibility Report requirements.

2.3.1 Building Investigation Requirements

During the investigation, the Program Implementer conducts an onsite investigation and analysis of the building operations, seeking to identify deficiencies and potential optimization of the mechanical equipment, lighting, and related controls. The Program Implementer determines opportunities for corrective action and other operational and maintenance improvements that reduce energy consumption and demand. These opportunities may be behavioral, retrocommissioning, or operational (BRO) items, or may be capital retrofits and equipment upgrades and replacements.

As in an energy audit, the Program Implementer gathers information to define the Customer's current facility equipment and operations including, but not limited to, building plans/schedules, operational schedules, building controls, and equipment conditions. A commissioning process such as observation, targeted functional testing, and trend data analysis, may also be followed to gather and assess operational and equipment performance data to identify deficiencies and measures for improvement.

Energy savings calculations for identified measures will be required as well as a proposed project schedule. Energy efficiency savings must be determined from an existing conditions baseline. The Program Implementer must ensure data collection is robust to produce all required documentation for PG&E review

⁵ See the PG&E Site-Level NMEC M&V Plan for details about model development and model goodness of fit metrics: CV(RMSE), NDBE, and savings uncertainty.

and approval. This may include, but not be limited to, all calculations and assumptions, trend and portable logger data, functional test results, site visit reports, photographs that were used to identify the opportunity.

2.3.2 Project Feasibility Study Report

The results of the investigation will be summarized in the Feasibility Study. The Feasibility report shall list in tabular format each EEM, its estimated electric and natural gas energy and demand savings, their expected useful life, and the estimated measure cost and approximate simple financial payback time. Documentation supporting measure costs and estimated useful life must be referenced. Each measure is supported by baseline documentation that clearly indicates the deficiency or problem. Baseline documentation may include name plate information, trend or portable logger data plots and files, functional test results, screen shots, site visit reports, and photographs, as appropriate. Energy savings are estimated

by the Program Implementer for each measure and/or combination of measures using one of the allowable calculation methods which may include custom spreadsheet calculations or building simulation models.

The final package of improvements is presented to the Customer in the Feasibility Study. The Study Report includes the recommended and selected measures and provides information to assist the Customer with implementation, including: energy savings and financial calculations, recommended approach to implement selected measures, estimated costs from contractor(s) for the selected measures, Program Implementer assistance (if chosen by Customer), and appropriate methods for verifying measures. The Feasibility Study must provide recommendations that are explicit enough for contractors or in-house staff to understand the scope of work.

2.3.3 Project M&V Plan

As part of the baseline period submission requirements, the Program Implementer will prepare an NMEC Site Level M&V Plan. NMEC savings procedures and documents must follow the guidance and templates provided in the PG&E NMEC Program M&V Plan: M&V Requirements for Site-Level NMEC. The Site Level Project M&V Plan shall contain the pre-screening results (also submitted as part of the Project pre-screening), independent variables, description of how the M&V analysis will proceed, when savings reports will be developed, all data sources and data preparation procedures, how baseline models will be updated, goodness of fit and accuracy metrics used, and a description of the contents of the Savings Reports.

M&V Plans must also identify static factors that will be tracked during the installation and performance periods. Building static factors are factors unrelated to the energy efficiency measures and that are not expected to change during the course of the project but have a significant impact on energy consumption if they do change. Such factors include operating hours, added or removed electric or gas equipment, large changes in occupancy, major building renovations, and so on. The M&V plan must describe how these potential changes will be tracked and how PG&E will be notified when they occur. Resources to address non-routine events have recently been published.⁶

Many buildings' energy consumption have been affected by the low-occupancy shutdown period caused by the COVID-19 pandemic. Various methods have been identified to account for the COVID period.⁷ If the customer's building has been significantly affected, the M&V Plan must describe how these impacts have been addressed so that the resulting normalized savings are representative of the installed measures.

⁶ IPMVP Application Guide on Non-Routine Events & Adjustments, October 2020, available from www.evo-world.org.

⁷ See EVO's M&V Focus magazine, March 2021 for three related articles: <https://evo-world.org/en/news-media/m-v-focus/884-m-v-focus-march-2021-issue-8>

If the customer has on-site generation such as a photovoltaic system, a cogeneration plant, or fuel cells, the M&V Plan must include a description of how it will be verified that the savings do not exceed the PG&E-delivered energy. Procedures for verifying savings in buildings with non-IOU fuel sources are provided by the CPUC.⁸

Regression models must be developed in publicly available tools or approved tools that provide transparency to the underlying code.

2.4 Project Submission and Technical Review

Documentation needed to complete the Pre-Installation Package for PG&E Technical Review and approval

to commence include:

- Feasibility Study Report and supporting data and calculation files and documentation
- Final M&V Plan with raw interval meter, independent variable data, and live calculations of baseline model
- Narrative demonstrating technical or financial influence of the NMEC Program offering on the Customer, which may include: communications between the Program Implementer and Customer, including initial proposal, related Program information and sales collateral, presentation of the projected NMEC Payments and related benefits, and Project financing, if made available.
- Three-year maintenance plans, either purchased or internal, will help Behavioral, Retro-commissioning, Optimization (BRO) measures persist. Maintenance plans will be scrutinized and must be approved by PG&E to ensure their effectiveness.

PG&E will review the package and will assign it for technical review, which has two components: NMEC Technical and Custom Technical. The NMEC Technical Review will review the pre-screen analysis and M&V Plan and verify that the information submitted is complete and the M&V Plan is sufficient to describe how savings are determined and conforms to requirements. The Reviewer will verify that the model developed from the monitored data follows standard statistical practices. The Reviewer may approve the report as submitted or request changes to the Baseline model and report. If the Program Implementer or Customer is unable to provide a Baseline report sufficient to meet the verification criteria, the reviewer may decline the report or request more information through a needs requirement document.

All BRO and capital measures are required to meet the custom program rules, as described in the CPUC's "Rulebook for Programs and Projects Based on Normalized Metered Energy Consumption."⁹ At the Reviewer's discretion, a pre-inspection to verify existing project site conditions may be required. The audit report will be submitted to a PG&E Custom Technical Reviewer to assure all requirements are met, including those for influence and free-ridership.

The Customer must receive a Project Approval Letter from PG&E before beginning measure implementation. The Project Approval Letter will serve as notice to the Program Implementer to proceed with implementation.

2.5 Project Approval

Upon receiving Project Approval Letter, the Implementer may begin the Implementation phase of the

⁸ Energy Efficiency Savings Eligibility at Sites with non-IOU Supplied Energy Sources – Guidance Document, ver. 1.1, August, 2014. Available at: https://pda.energydataweb.com/api/downloads/2118/EnergyEfficiency_Savings_at_Sites_with_non-IOU_Fuel_Sources_2015-11-06.pdf

⁹ Version 2.0, dated January 7, 2020, available at: <https://www.cpuc.ca.gov/-/media/cpuc-website/files/legacyfiles/n/6442463694-nmec-rulebook2-0.pdf>

Program. Implementers should plan on documenting all associated project costs through invoices, receipts, internal hour logs or internal work orders as appropriate. The total amount of project cost will be used to cap the amount of the NMEC Payment a Customer may be eligible to receive over the course of the Program. The PG&E NMEC Payment will be capped at 80% of documented total project costs.

2.6 Project Installation Report

The Program Implementer will notify PG&E when the Project is near completion. For long installation timelines, it is highly recommended that the Implementer appraise PG&E of the status of installation. A maximum of 18 months is allowed for installation. If additional time is needed for project installation beyond the 18 months, please notify the Program Manager as soon as possible. At project completion, the Program Implementer shall submit to the PG&E Program Manager, a Project Installation Report and supporting project cost documentation. PG&E may assign technical resources to commence post-installation verification activities.

2.6.1 Installation Report

Implementation and installation of the Program approved project measures is considered complete only after the Program Implementer completes a Project Post-Installation Report, signed by the Customer, along with supporting measure installation documentation. This Report affirms that installation activities have been completed by the Customer and/or their Program Implementer and that the measures are installed and operating properly, with supporting data and documentation, and ready to generate savings. The proposed performance period start date is provided in the report. For measures not installed or measures not installed according to the assumptions used in the feasibility study savings analysis, the estimated savings of the installed measures must be updated and reported. Customer agrees that PG&E may perform an inspection of the installed measures.

For projects with NMEC incentive payments in excess of \$50,000 based on the estimated savings of installed measures, a savings progress report based on 3 months of performance period data is required. This report documents the avoided energy use (savings under performance period conditions, see program M&V Plan) achieved at the 3 month mark and assures actual savings are being realized. The achieved savings is used to assure that the large project is generating savings, the NMEC incentive is not based on this analysis.

Some project circumstances may make the determination of the post-installation expected savings difficult and the PG&E Program Manager, at their discretion, may direct that alternate methods be used to determine savings.

2.6.2 Project Cost Documentation

Project cost documentation must be collected and submitted with the Project Installation Report. Project cost documentation must be complete and accurate, including contractor invoices, internal hours, etc. The total amount of project cost will be used to cap the amount of the NMEC Payment, a Project may be eligible to receive under the Program. Behavioral measure costs require pre-approval from the PG&E Program Manager to be considered as part of the project cost cap.

2.6.3 Operation & Maintenance Plan

A 3 Year Maintenance Plan is required for all BRO measures regardless of whether maintenance is being

implemented by the Customer, Program Implementer or through a contracted third party. In cases where the maintenance is completed by the Customer, Customer must submit a plan that must include the following, at a minimum:

- Description of primary maintenance activities;
- Identification of staff or contractor responsible for completing maintenance activities;
- Schedule for completing maintenance activities; and
- Description of system that will be used log to completion of maintenance activities.

For maintenance plans executed by the Program Implementer, a scope of work for the maintenance plan contract must be submitted. The scope of work should include the above sections.

In all cases, customer shall be given operating manuals and trained as necessary to operate and maintain installed equipment. In cases where the Program Implementer is managing the maintenance, Program Implementer shall provide no less than quarterly reports confirming performance of services and customer satisfaction.

2.7 Project Installation Review

The PG&E Program Manager will receive the Project Installation Report and accompanying documentation and will assign it to the NMEC and Custom Technical Reviewers. The Technical Reviewers will verify that the information submitted is complete and follows the Program Offering's rules for both NMEC and Custom processes. A post-installation site inspection may be required, as well as additional data, to assure all requirements have been met. Upon review and or approval of the package, the start of the performance period will be established, and a Notice of Approved Installation will be sent to the Program Implementer or Customer in the case where Customer does not have a Program Implementer.

2.8 NMEC Payments

2.8.1 Post-Installation NMEC Payment

The commencement of the performance period begins upon PG&E's issuance of the Notice of Approved Installation which has the performance period start date and ends after twelve months of metered performance (Performance Period). Upon commencement of the Performance Period, the Implementer (or Customer if Customer does not have a Program Implementer) will monitor the Project's energy performance and identify whether there have been changes to the static factors or whether there have been occurrences of any other non-routine events (NREs). This must include at a minimum, (i) collecting energy use no less than quarterly, and (iii) performing visualization or analysis to check that savings are in fact accruing, and checking for the presence of NREs. Any non-routine events that occur during the Performance Period are to be identified, and their impacts removed from the savings analysis. For large projects that are expected to exceed \$50,000 in NMEC payments, a savings progress report based on 3 months of performance period energy and independent variable data is required.

The NMEC Technical Reviewer will review the Post-Installation Report and 3-month savings progress report (for large incentive projects) to assure it is consistent with the requirements described in the PG&E M&V Requirements for Site-Level NMEC. All steps in the NMEC procedure from data collection and preparation, assuring enough data was collected and used, analysis procedures, model goodness of fit metrics, accounting for non-routine events, and final savings estimates will be reviewed. Particular attention will be paid to how the impacts of NREs are quantified.

The NMEC Technical Reviewer will either recommend approval for the first NMEC Payment, create a request for more information or clarification, or may recommend declining the Project. The Technical Reviewer may approve the Post-Installation Report as submitted or request changes to the energy savings calculations and report. The project cost documentation will be reviewed and judged for reasonableness for the installed measures.

The first NMEC incentive payment is based on the incentive rate times the estimated savings of the installed measures, multiplied by 40% and capped at 80% of total project costs. Note that this is a preliminary payment of the total incentive and does not have to be based on normalized savings. The second NMEC Payment (as described below) is based on the normalized savings at the meter, which may only be determined after 12 months of data has been collected, as described in the project's M&V Plan.

Note that some project circumstances may make the determination of the post-installation expected savings difficult and the Program Manager may direct alternate methods to determine savings at their discretion.

2.8.2 Twelve Month Incentive Payment

Continuing through the Performance Period, the Implementer (or Customer if Customer does not have a Program Implementer) will continue to monitor the Project's energy performance and identify the occurrence of any non-routine events (NREs). This must include at a minimum, (i) collecting energy use no less than monthly, (ii) collecting independent variable, and control system data, and (iii) performing visualization or analysis to check that savings are in fact accruing, and the affected equipment and systems are performing efficiently. Any non-routine events that occur during the Performance Period are to be identified, and their impacts removed from the savings analysis. At three months into the Performance Period, Program Implementers must provide a 12-month Savings Report according to the savings calculations described in the Site Level M&V Plan. The Savings Report must include all contents as described in the Site Level M&V Plan, with detailed descriptions of any deviations from the original plan.

The NMEC Technical Reviewer will review the 12-month Savings Report to assure it is consistent with the requirements described in the PG&E M&V Requirements for Site-Level NMEC. All steps in the NMEC procedure from data collection and preparation, assuring enough data was collected and used, analysis procedures, model goodness of fit metrics, and final savings estimates will be reviewed. Particular attention will be paid to how the impacts of NREs are quantified.

The NMEC Technical Reviewer will either recommend approval for the first NMEC Payment, create a needs requirement document to request more information or clarification, or may recommend declining the Project. The Technical Reviewer may approve the 12-Month Savings Report as submitted or request changes to the regression model and report. The project cost documentation will be reviewed and judged for reasonableness for the installed measures.

2.8.3 Continued PG&E Monitoring

PG&E may monitor the energy saving performance of the Project for a period of three years after PG&E's issuance of their Notice of Approved Installation. The Program Implementer (or Customer if Customer does not have a Program Implementer) will perform maintenance as required according to the Maintenance Plan for a period of at least three years. The Program Implementer will meet with PG&E as if requested, to discuss changes to maintenance activities, large changes to building operations and equipment that might require to non-routine adjustments, monitored savings, and if applicable, NMEC Payments.

2.8.4 Notice of Potential Building or Use Change- Non-Routine Events

In the event the building usage changes materially during the post-installation phase of the Project, Program Implementer is required to notify PG&E of any NRE. Program Implementers are required to submit a detailed narrative describing the changes that have occurred and the duration of the NRE. A revised baseline model will be developed to assess any major deviations from the post-installation usage pattern. The NRE identification process and appropriate corrections will be assessed on a case-by-case basis for projects where an NRE occurs. Any NRE adjustments, and related calculations, will be made available for review by CPUC Energy Division staff.

Examples of NREs include material changes in the following:

- 2.8.4.1 Changes to building size;
- 2.8.4.2 Additions of heating and cooling loads in the building;
- 2.8.4.3 Addition of load such as computers or data processing equipment;
- 2.8.4.4 Reductions in energy use due to effects of the COVID-19 pandemic;
- 2.8.4.5 Longer, or shorter operating hours, or material schedule changes; and
- 2.8.4.6 Changes in building usage such as converting lab space to office space.

Notification of NREs is required as soon as supporting information can be assembled and submitted to the PG&E Program Manager. Program Implementers are required to document the following;

- 2.8.4.7 Describe the change and its impact on energy usage;
- 2.8.4.8 Identify the date the change occurred and expected length;
- 2.8.4.9 Describe the systems that are likely impacted by the change;
- 2.8.4.10 If changing equipment, either adding or subtracting, note the load (kW) of the existing equipment, and the new equipment, if appropriate;
- 2.8.4.11 Method of adjusting energy use to remove the impact of the NRE.

NRE reporting is required through the three-year monitoring period.

3. Payments

This section describes the PG&E NMEC Payments.

3.1 NMEC Payments

NMEC Payments will be determined based on the Project's normalized annual kWh savings, permanent kW reduction and therm energy savings as measured according to the Site Level M&V Plan. The most a customer can receive is defined by their Maximum NMEC Payment Amount, which is the Gross energy and demand savings based on analysis of 12 months of data, multiplied by their respective Incentive Rates as described below.. The Maximum NMEC Payment Amount is capped at 80% of documented project costs.

Gross Savings is the analyzed electric kWh, kW and natural gas therm savings based on analysis of 12 months of baseline and 12 months of performance period data.

Installed Savings is the estimated electric kWh, kW, and natural gas therm savings of the installed measures based on the total of the updated individual measure savings of the installed measures.

Incentive Rates:

- \$200 per Gross kW
- \$0.12 per Gross kWh (plus \$0.06 per Gross kWh if load control and ADR is enabled)
- \$1.75 per Gross Therm

Performance Period:

- Post-Installation NMEC Payment = $(\$0.12 \times \text{Installed kWh Savings} + \$0.06 \times \text{Installed kWh Savings (for load control and ADR)} + \$200 \times \text{Installed kW Peak Reduction} + \$1.75 \times \text{Installed Therm Savings}) \times 40\%$
- 12-Month NMEC Payment = $(\$0.12 \times \text{Gross kWh Savings} + \$0.06 \times \text{Gross kWh Savings (for load control and ADR)} + \$200 \times \text{Gross kW Peak Reduction} + \$1.75 \times \text{Gross Therm Savings})$ minus the Post-Installation NMEC Payment

Project Cost Cap: Sum of the Post-Installation NMEC Payment and 12-Month Payment must be less than or equal to 80% of Project Costs. At each payment, the total of the NMEC Payments are checked against the

Project Cost Cap:

Projects in which the Post-Installation savings and 12-month savings increase by more than 20 percent over the original projections may receive site visits to ensure savings are related to measure installations and are not related to non-measure activities, such as NREs.

Appendix A: Feasibility Study Template



Project Feasibility Study: PG&E Public Sector Performance Based Retrofits NMEC Program

Project Name

Customer

Customer Contact

Date

CUSTOMER INFORMATION	
Customer Name	PG&E Service Account No. Electric: Gas:
Customer Contact	Customer Address
Telephone	E-Mail

PROJECT INFORMATION			
Project Name			
Project Site Address	City	State	Zip

PROGRAM CONTACTS			
PG&E Program Manager Alison Erlenbach	PG&E Engineer	NMEC Program Consultant	Other Consultant
Telephone 415.933.0407	Telephone	Telephone	Telephone
E-Mail: A1EG@pge.com	E-Mail:	E-Mail:	E-Mail:

___ understands that the energy savings described in this document are estimates only and are subject to change. Neither Pacific Gas and Electric or its consultants are liable if the projected estimated savings or project economics differ from actual energy savings and/or project economics because of variations in operating conditions, changes in project scope, changes to implementation based upon Commission Staff dispositions or Industry Standard Practice study findings, changes resulting from recommendations made by Pacific Gas and Electric's third party technical reviewers, or for any other reason.

___ understands that this project may be selected for an in-depth technical review by the Commission Staff of the State of California Public Utilities Commission. If selected, the Commission Staff reserves the right to review the project and all associated documentation to ensure the proposed energy savings are reasonable and correct. Any mandated changes to the project's energy savings or Energy Conservation Measures by Commission Staff must be implemented per the direction of the Commission Staff.

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1 Executive Summary

2 Influence Documentation

3 Project Description

3.1 Facility Description & Energy Use Summary

3.2 Facility Equipment Inventory

3.3 Proposed Energy Efficient Measures (EEMs)

3.4 Public Sector NMEC Whole Building Measure

Solution Code: CIA10 Integrated Building Nonres Whole building Approach.

IOU Install Type: Savings methodologies are based on Normalized Meter Energy Consumption (NMEC) that utilize existing conditions for all installation types.

Effective Useful Life (EUL/Remaining Useful Life (RUL))

EUL for each individual sub-component of the measure was determined from DEER. Total EUL was determined by taking a weighted average of all sub-measure EUL's. Weighting was based on each measure's percent savings of the overall project kBtu savings. The EUL calculation is included in the table below.

4 Measurement and Verification Plan

This project is utilizing the methodology described in the Normalized Metered Energy Consumption Savings Procedures Manual (NMEC Procedures Manual) v 1.01 to determine the final savings. In accordance with AB 802 and CPUC guidance, this methodology follows an IPMVP Option C approach in which metered energy use data prior to and after the EEMs have been installed are used to estimate savings. This approach requires that regression-based energy models be developed from baseline energy use and independent variable data. The model's goodness of fit is determined to assess its accuracy in ultimately calculating savings.

PG&E Commercial and Public Sector Whole Building Manual

We have attached the M&V Plan document separately to this PFS. As it is a first of its kind, we have provided extensive details to describe the procedures and baseline analysis, and to describe how savings will be reported after the EEMs are installed in this building.

5 Appendices

- A. Prescreen Report
- B. Energy Calculation Spreadsheet
- C. M&V Plan
- D. Other Project Documentation

Appendix B: Post-Installation Report Template



Post-Installation Report

PG&E Commercial Whole Building NMEC Program

Project Name:

PG&E Project Number:

Customer:

Prepared by:

Date:

The instructions in each section below have been provided as a guide. Please remove these instructions and any other non-pertinent information as each section is completed. [Shaded text] denotes an instruction or suggestion or cue to the developer.

Revision History

Rev	Date	Author & Organization	Summary of Changes
01	mm/dd/yyyy	Name, Title, Organization	Provide summary of changes

Check appropriate boxes:

- No changes to the proposed solutions have been made since the Project Application Review and Approval, and the Customer or Trade Professional verifies that the Application approved savings calculations are correct. For NMEC projects, I acknowledge that all measures are fully installed and commissioned.
- For Calculated projects, due to changes to the proposed measures, appropriate adjustments in the savings calculations have been made. For measures with changes made during installation, use this section and Section 5 to calculate the revised installed energy usage, energy savings, peak demand reduction, and incentives. Attach the appropriate calculation backup: the output from the Estimation Software, Calculated Energy Savings Total or the calculation sheets that document the engineering calculations.
- For NMEC projects, due to changes to the proposed measures, scope of work, and/or non-routine events, building repurposing, etc. adjustments in the savings calculations have been made. Use Section 5 to calculate the revised installed energy usage, energy savings, peak demand reduction, and incentives. Attach the appropriate calculation backup: the output from the Estimation Software, Calculated Energy Savings Total or the calculation sheets that document the engineering calculations. ALL NMEC savings and incentives will be calculated and paid at the end of the first full year of energy usage after project installation and commissioning.

I, the Customer or Trade Professional below, certify that (i) the Energy Efficiency Solutions have been completely installed, functionally tested and proven capable of operating and being maintained to perform in conformity with their design intent, and (ii) that a licensed contractor was used, where applicable, and all applicable permitting requirements for this installation were followed. The installation date of operation of the Energy Efficiency Solutions and any required monitoring data collection per approved M&V plan, are also certified.

I, the Customer or Trade Professional below understand that Southern California Edison has additional requirements that have been added to the statewide investor owned utilities Post-Installation Report template.

Name (please print)	
Signature	
Position / Title	
Date	

[INSERT PG&E DISCLAIMER HERE]

█ understands that the energy savings described in this document are estimates only and are subject to change. Neither Pacific Gas and Electric or its consultants are liable if the projected estimated savings or project economics differ from actual energy savings and/or project economics because of variations in operating conditions, changes in project scope, changes to implementation based upon Commission Staff dispositions or Industry Standard Practice study findings, changes resulting from recommendations made by Pacific Gas and Electric’s third party technical reviewers, or for any other reason.

█ understands that this project may be selected for an in-depth technical review by the Commission Staff of the State of California Public Utilities Commission. If selected, the Commission Staff reserves the right to review the project and all associated documentation to ensure the proposed energy savings are reasonable and correct. Any mandated changes to the project’s energy savings or Energy Conservation Measures by Commission Staff must be implemented per the direction of the Commission Staff.

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Customer Information

CUSTOMER INFORMATION	
Customer Name	PG&E Service Account No. Electric: Gas:
Customer Contact	Customer Address
Telephone	E-Mail

PROJECT INFORMATION		
Project Name		
Project Site Address	City	State Zip

PROGRAM CONTACTS			
PG&E Program Manager Monika Jesionek-Poggetti	PG&E Engineer	Implementer	Other Consultant
Telephone 415.531.7315	Telephone	Telephone	Telephone
E-Mail: MAJM@pge.com	E-Mail:	E-Mail:	E-Mail:

PAYMENT INFORMATION AND INSTALLATION DATES		
Form of Payment (Check to Trade Pro or Customer, etc.)		
PAYEE INFORMATION		
Payee/Customer Business Name	Attention to (only if required to be printed on the check)	Title
Company/Business/Mailing Address	City	State Zip
Point of Contact	Contact Telephone	Contact E-Mail
Federal Tax/Employer ID (EIN/SSN)	Identification Number	Tax Status
Exempt Reason:		
For Utility Bill Credit	Service Account Number	Customer Account Number
Complete Both Dates	Installation Commencement Date Month Day, Year	Installation Completion Date Month Day, Year

Please check this box if this project was approved for On-Bill Financing

Executive Summary

The purpose of this report is to document:

- The energy efficiency measures installed in this project,
- Describe differences or changes in the measures in comparison with the proposed measures,
- Verify that the measures were installed and operating correctly,
- Collect project cost information,
- Determine the NMEC program initial incentive payment, and
- Establish the performance period start date.

Description of Installed Measures

3.1 Description of proposed measures (from Feasibility Study):

EEM 1:

EEM 2:

Etc.

3.2 Description of installed measures (including differences or changes from proposed measures, identify any proposed measures that were not installed with a brief description why it was not installed):

EEM 1:

EEM 2:

Etc.

3.3 Description of how each measure installation was verified

EEM 1:

EEM 2:

Etc.

3.4 Table of measure installation completion dates

Measure Name	Installation Completion Date
EEM 1	
EEM 2	
Etc.	

3.5 Table of updated savings estimates and estimated useful life (EUL) and weighted EUL (for differences or changes to proposed measures, include and reference calculations in an appendix or workbook, if no changes, include original savings estimate).

Measure Name	Estimated Savings, Electric kWh	Estimated Savings, Natural Gas, therms	EUL
EEM 1			
EEM 2			
Etc.			
Total Savings			
		Updated Weighted EUL	

Project Cost Documentation

Provide line item project costs for installed measures

Incentive Calculation

Initial incentive payment is based on 40% of the total estimated savings of the installed measures, capped at 80% of the project cost.

Electric energy savings incentive rate: \$0.12/kWh

Electric demand incentive rate: \$200/kW (defined according to DEER peak demand method)

Natural Gas Incentive Rate: \$1.75/therm

Recommended Performance Period Start Date

Recommend the date the performance period should start and describe the basis for selecting this date.

Appendices

E. Updated Savings Calculations