

Custom Retrofit Procedures Manual

7/1/2026

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1.0 Introduction

The Custom Retrofit program provides existing SMUD commercial customers an opportunity to receive design assistance and calculated incentives to optimize non-residential electrification and energy efficiency retrofit projects. Electrification refers to projects reducing gas use through implementation of efficient electric technologies, where savings are quantified in therms. Our free design assistance offers insights and considerations for review and support of the design effort. Financial incentives help cover the incremental cost difference between efficient and standard design.

Changes to incentives and program rules may occur between revisions of the Procedures Manual. Please visit smud.org/Custom to find the most current version of the Procedures Manual.

Incentives are first come, first served. No incentive is reserved for a project until SMUD provides a signed Reservation of Incentive. Any project completing without a Reservation of Incentive may risk losing the potential incentive.

2.0 Program overview

- 1) The Custom Retrofit program uses an incentive application available upon request by emailing CustomRetrofit@smud.org or calling (916) 732-5095.
- 2) Incentives are calculated using multiple methods and are dependent on annual electrification (therms) and energy (kWh) savings.
- 3) A Reservation of Incentive (ROI), signed by SMUD, is required before construction and/or when installation is completed.
- 4) SMUD, at its sole discretion, will determine annual electrification (therms), energy (kWh) savings and incentives.
- 5) For specific incentive requirements, refer to the Appendices.

3.0 How to apply

Request a copy of the Custom Retrofit program incentive application at CustomRetrofit@smud.org or call (916) 732-5095.

3.1 Requirements for an Application

The Custom Retrofit program incentive application is filled out and signed electronically using DocuSign[™] and consists of the following three forms:

- 1) Incentive program application (Form 3714A)
 - a) **Checklist** – Outlines the application process and lists required items for each step (page 1).
 - b) **Step 1: Statement of Interest** – The first step in the application process, providing background on the project (page 2).
 - c) **Step 2: Customer Information** – The information is filled in for the customer receiving the electrification and/or energy efficiency measures.
 - d) **Terms and Conditions** – The customer agrees to and accepts the Terms and Conditions and is signed when completing Step 1 and Step 2 (page 3).
- 2) Reservation of Incentive (Form 3714B)

- a) **Reservation of Incentive** – After the customer submits all required documentation, we'll review and return a signed Reservation of Incentive which sets aside incentive funds for the specified period if conditions and milestones for the Reservation of Incentive are met.
- 3) Incentive Payment Request (Form 3714C)
 - a) **Step 3: Incentive Payment Request** – Upon completion of the project, the customer submits the signed Incentive Payment Request to SMUD.

3.2 Requirements for a Reservation of Incentive

With sufficient information, an incentive may be reserved for projects planned for completion up to 36 months from when the Reservation of Incentive is issued. For eligible projects with completion lead times beyond 36 months, a pre-negotiated reserved until end date may be established for the Reservation of Incentive, pending SMUD approval.

Pre-determined milestones need to be met to maintain the Reservation of Incentive (i.e. SMUD energization, dates construction is completed, when equipment will be onsite, etc.).

If the milestones and project completion dates outlined in the Reservation of Incentive are not met, the Reservation of Incentive may be cancelled. At SMUD's discretion and pending budget availability, the project may be issued a new Reservation of Incentive under the rules of the current program year.

3.3 Requirements for incentive payment

Project completion is defined as when the incentivized equipment is energized and operational. Coordinate with SMUD for a site inspection to document the installed systems.

4.0 Eligibility for participation

4.1 Customer eligibility

The Custom Retrofit program is open to all SMUD customers receiving electricity under a nonresidential rate. The customer will be the beneficiary of any electrification and energy efficiency improvements.

4.2 Partner firm eligibility

Third parties (partner firms) including contractors, engineers, and energy services companies (ESCOs) may receive incentives on a customer's behalf.

The customer may assign the incentive to the partner firm on the Incentive Payment Request (Form 3714C). The partner firm receiving the incentive payment will be required to enroll as a vendor with SMUD, submitting a W-9 and, if applicable, a CA-590.

4.3 Project eligibility

Custom Retrofit program projects must meet the following criteria:

- 1) Located in SMUD service territory.

- 2) Annual electricity purchases must exceed the project's proposed savings. In the event the customer has less than one year of billed consumption, the annual consumption will be projected.
- 3) Customer is early enough in the project development to consider design changes, and a completed and signed incentive application must be provided to SMUD before equipment is ordered and any work begins.
- 4) Contractor must be licensed and qualified to perform the work specified in the Statement of Interest.
- 5) All applicable permits must be pulled and closed.
- 6) New equipment meets all applicable codes, including the State of California Title 24 part 6 and Title 20.
- 7) Payee must be willing to participate in SMUD's future review of the project's performance for the purpose of determining the Custom Retrofit program's performance. Payee may be requested to answer questions regarding the installed measures performance and agrees to the release of billing data to SMUD or its consultant. In the event the modification does not perform as well as expected, SMUD will not seek the return of incentives paid for projects negotiated in good faith.
- 8) The applicant has not been suspended from participating in the Custom Retrofit program.
- 9) Installed technologies do not appear on the Ineligible Measures List (refer to [Appendix F](#)).

5.0 Measure eligibility

Requirements of technologies applying for the Custom Retrofit program:

- 1) **Overlap other SMUD incentive programs** – Any measures included in the Custom Retrofit program application cannot apply for multiple electrification and energy efficiency SMUD incentive programs. SMUD, at its sole discretion and with preapproval, may make exceptions for projects using special SMUD programs. Cost caps will be observed when utilizing multiple programs.
- 2) **Fuel substitution measures** – SMUD can pay incentives on projects switching from a fossil fuel to an efficient electric energy supply, also known as electrification. Fuel substitution measures require additional approvals. Using less gas without the use of electrification technologies will not be eligible for electrification incentives.
- 3) **Savings must not be reliant on behavioral changes** – Projects are required to have permanent electrification and energy efficient modifications and/or automated controls. Exceptions at SMUD's discretion.

6.0 Changes in design and SMUD interconnection

Projects applying for incentives under the Custom Retrofit program may affect other parts of SMUD's interconnection process. It is important to note that [SMUD's Design & Construction Services](#) department must be made aware of design changes and updates to buildings during construction. Failure to work with [SMUD's Design & Construction Services](#) department has led to the need for infrastructure upgrades at the customer/owner's expense day 1 of occupancy. This section outlines the various departments a new construction project will engage with at varying stages of design and construction. The Custom Retrofit program is here to support and strengthen

the collaboration with the customer's team to streamline and guide successful project completions.

6.1 SMUD Commercial Development

SMUD's Commercial Development team can assist customers and developers looking to gain an edge building in [SMUD service territory](#). Our Commercial Development team is here to support developers through the build process, from project conceptualization and implementation to meter set up and utility account activation. Your dedicated Commercial Development representative will coordinate all the touch points at SMUD, as well as serve as a liaison to facilitate integration with other utility services.

6.2 SMUD distribution planning & operations

[SMUD's Distribution Planning & Operations](#) develops short-term and long-term plans for SMUD's distribution system to meet capacity, reliability and regulatory compliance requirements. This department is also responsible for the safe and reliable operation of SMUD's distribution system to deliver energy to our customers.

6.3 SMUD design & construction services

Whether you're adding an electric vehicle charger or building your dream house or a sports arena, [SMUD's Design & Construction Services](#) team is here to help you connect to SMUD's electric system.

6.4 Solar

Interconnected energy storage will be treated as distributed generation and falls under Rule and Regulation 21 – Interconnection Requirements. Please refer to [Rate Policy 11-01](#) for policy and requirements. To qualify for Net Energy Metering (NEM), all storage must be charged with renewable energy on site.

6.5 EV charging

To align with statewide goals to reduce carbon emissions, the SMUD Commercial Electric Vehicle (EV) program supports the growth of commercial vehicle electrification and the increased need for electric vehicle service charging equipment (EVSE) by offering direct incentives, as well as tailored consulting or installation services, for both fleet vehicles and installed on-site EVSE. SMUD is looking to lead other municipal utilities in working with customers, contractors, and industry, along with state and local governments, to expand EV adoption and support EV market transformation.

7.0 Incentive calculation

7.1 Performance

SMUD calculates performance incentives by determining the difference in annual energy consumption between the proposed efficient system and a baseline system.

Individual systems are calculated using spreadsheets, or with prior approval from SMUD, other building simulation software tools, to determine annual electrification (therms) and energy (kWh)

savings. SMUD accepts building simulation software approved by the California Energy Commission. With prior approval from SMUD, software not listed with the California Energy Commission (CEC) may be used to model systems not able to be modeled with CEC-approved software, such as underfloor air distribution, thermal mass, natural ventilation, radiant cooling & heating, heat recovery with heat pump technology, or other innovative strategies.

7.2 Prescriptive

SMUD offers fixed incentives for common measures with a streamlined process. The prescriptive Go Electric approach for electrification measures is offered to projects replacing gas-fired equipment with efficient electric equipment, streamlining the process for determining eligible incentives. Refer to [Appendix B](#) for more information.

8.0 Additional SMUD programs

SMUD offers several other programs for commercial customers

- 1) Greenergy[®] (smud.org/Greenergy) offers green pricing options.
- 2) Commercial Electric Vehicle (EV) (smud.org/Going-Green/Electric-Vehicles/Business) offers incentives for electric vehicle service charging equipment (EVSE).
- 3) PowerDirect offers incentives to participate in Automated Demand Response (smud.org/PowerDirect).
- 4) Multifamily (smud.org/Multifamily) offers incentives existing multifamily buildings.
- 5) All-Electric Smart Homes (smud.org/SmartHomes) offers incentives for new construction multi-family and mixed-use buildings.
- 6) Integrated Design Solutions (smud.org/IDS) offers design assistance and incentives for new construction commercial buildings.

Check [Business Go Electric](#) and reach out to your [Strategic Account Advisor](#) for the most current program offerings.

9.0 Incentive payments

9.1 First come, first served

Custom Retrofit program funds are available on a first come, first served basis. Incentive budgets are finite and could potentially be exhausted. Only projects receiving a Reservation of Incentive are guaranteed an incentive if the project meets prescribed milestones that best fit the project and are completed within the stated timeframe.

9.2 Incentives from other programs

SMUD, at its sole discretion, will determine the most applicable SMUD incentive program for a customer.

9.3 Incentive rates and caps

Custom Retrofit program project incentives are applied per customer site, per year, per completed and permitted project plan set. The customer site includes all buildings on a parcel or contiguous parcels (campus) considered by SMUD to be a single customer of record. A project seeking multiple permits (i.e. sitework, Core & Shell, tenant improvement, etc.) for the same building are

treated as one project. At SMUD's sole discretion, projects may be eligible for multiple incentives based on other factors such as "per building" or "per address".

Incentive caps and rates are determined at the time the customer applies to the Custom Retrofit program. At SMUD's sole discretion, a project can be divided across a calendar year to receive multiple incentives.

For projects incorporating both electrification and energy efficiency measures, the incentives will be additive.

Projects that exceed the project incentive caps and realize extraordinary utility benefits may be eligible for special incentives, at SMUD's sole discretion.

9.4 Changes to project scope

If the project scope changes between the Reservation of Incentive and the post-installation inspection, SMUD reserves the right to either modify or discontinue the incentive. If scope changes are brought to SMUD's attention prior to the equipment being ordered, SMUD may evaluate any scope changes for potential incentive adjustments.

When appropriate, scope changes with program participation also need to be brought to SMUD Design & Construction Services department in accordance with [Section 6.0](#).

9.5 Incentive payments

Provided the project has been installed, the customer (or the payee designated by the customer) indicated on the Incentive Payment Request can expect to receive a single incentive payment, by check, within 30 days of submission of all required completed incentive applications, technical data sheets, and other documentation. Failure to provide these documents within 60 days of project completion may forfeit the incentive for the project.

9.6 Duration of measure installation

Over the course of many years, SMUD gains long term environmental and electrical grid benefits from the installed gas and electrical saving measures receiving a financial incentive. The expectation is the measures remain installed for the operational life of the equipment. In the event SMUD determines that equipment is disabled or removed prematurely, outside of normal business practice and before the end of its useful installed life, SMUD reserves the right to reclaim any incentives paid to the project. Additionally, the customer could potentially be ineligible to participate in additional SMUD program offerings.

10.0 Post-installation inspection

Once the project is installed and operational, SMUD may inspect the new systems to verify the installed scope of work. Photographs will be taken to document how the project was implemented. The inspection will be conducted, either in-person or remotely, at SMUD's discretion. Remote inspections are performed over a video conferencing platform (i.e. Microsoft Teams, Google Meet, or Apple FaceTime).

11.0 Project costs

11.1 Project cost

The project costs are the entire cost of implementing the electrification or energy efficiency measure which is receiving the incentive.

When an electrification or energy efficiency measure is a component of a larger project, SMUD reserves the right to request documentation verifying the value of only the tasks related to the measures receiving the incentive.

11.2 Cost documentation

Prior to an incentive payment, SMUD may require the customer to submit project costs using the following protocols:

Acceptable methods of demonstrating project cost:

- 1) All invoices, receipts, etc. must include adequate detail of the new equipment/measures.
- 2) Copy of the contractor's final invoice indicating overall contract value.
- 3) Copy of the contractor's partial payment invoice indicating both the overall contract cost and enough invoiced payments to cover all the project incentive caps.
- 4) SMUD may require additional documentation in cases where invoicing is unclear or deficient in some way.

Eligible components of project cost:

- 1) Allowable project costs may include engineering, construction, equipment, materials, removal, recycling, overhead, tax and shipping.
- 2) When an efficiency project is a component of a larger project, SMUD reserves the right to request documentation verifying the value of only the tasks related to the efficiency project. For example, a customer replaces a swimming pool and associated equipment and is eligible for an incentive on the pump upgrade. SMUD may request the material and labor costs of the pump installation only.
- 3) Labor (self-install): Assuming all relevant codes and standards and program rules are complied with, SMUD permits customers to include their own employees' labor in the project cost. In this case, some substantiation of labor rates and labor hours shall be provided and may be negotiated. SMUD reserves the right to reduce or remove self-install labor from projects claiming unreasonably high labor rates or labor hours to perform a retrofit.
- 4) Labor required for self-install projects may be excluded from the project cost if the installation is piecemeal over a long period and is performed during normal work hours. A common example would be the installation of a few lamps every day over a month. In this case, the labor to perform the retrofit is considered part of normal operations and has negligible impact on the project cost.
- 5) Project cost may not include spare parts, maintenance supplies, maintenance contracts, standby/backup equipment or other equipment that does not contribute to the realization of energy savings.
- 6) Project cost may not include any costs incurred in advance of an executed contract or order such as sales, marketing, audits or assessments.

Combining measures to increase project cost

To avoid stranding difficult measures, SMUD will permit the combination of project costs between cost effective and expensive measures, subject to the following guidelines:

- 1) The combined projects must be related (for example, HVAC + retro-commissioning).
- 2) The projects must be completed simultaneously.
- 3) The projects are only for electrification and energy efficiency measures. For example, you cannot increase the cost of HVAC by including the cost of the simultaneous re-roofing.

For example:

Projects performed separately	
HVAC rooftop unit replacement Project cost: \$20,000 Savings: 10,000 kWh/yr Incentive: \$1,500 (\$0.15/kWh), or 50% of project cost, whichever is lower. Incentive = \$1,500 (\$0.15/kWh)	Retro-commissioning Project cost: \$20,000 Savings: 200,000 kWh/yr Incentive: \$16,000 (\$0.08/kWh), or 50% of project cost, whichever is lower. Incentive = \$10,000 (\$0.08/kWh)
Projects performed together	
Replace HVAC rooftop unit with retro-commissioning Project cost: \$40,000 Savings: 210,000 kWh/yr Incentive: \$0.15/kWh (HVAC) and \$0.08/kWh (Retro-commissioning), or 50% of project cost, whichever is lower. Incentive = \$17,500 (\$0.15/kWh HVAC + \$0.08/kWh Retro-commissioning)	

12.0 Project termination

SMUD values all customers who endeavor, in good faith, to participate in SMUD's programs and will make every effort to renegotiate completion dates or incentives prior to the expiration or termination of applications. However, projects may be terminated (cancelled) at SMUD's discretion if they satisfy any of the following conditions:

12.1 Projects with application completed

Projects with a completed Custom Retrofit program incentive application will be nullified:

- 1) One year after signature date unless progress has been made toward the Reservation of Incentive.
- 2) Customer is unable to provide appropriate and complete documentation (technical data sheets, signed contracts, etc.) for SMUD to issue the Reservation of Incentive before project is completed.

These projects may be reinstated at any time under current program rules provided the Custom Retrofit program still exists, incentives are available and the project is still eligible.

12.2 Projects with Reservation of Incentive completed

Incentive applications for projects with a completed Reservation of Incentive will be nullified if:

- 1) SMUD determines that significant information was purposely withheld or falsely stated in the incentive application.
- 2) Pre-determined project milestones are not met.
- 3) Customer formally requests to withdraw from the program.
- 4) Customer fails to provide complete documentation (incentive payment request, technical data sheets, invoices, etc.) within 60 days of project completion.
- 5) The Custom Retrofit program incentive application is a duplicate.

12.3 Appeal of termination

Prior to terminating or cancelling an application, SMUD will email a notice to the customer at the email address on the Custom Retrofit program incentive application. The customer has seven (7) calendar days to provide a written appeal to CustomRetrofit@smud.org with reasoning for an extension request. Note that failure to complete the project or provide the required documentation does not constitute a valid reason for extension.

After the seven (7) calendar day appeal period, the application will be cancelled.

13.0 Customer or contractor suspension

If SMUD determines that a customer or contractor has acted in a manner to indicate an intent to defraud SMUD, SMUD will restrict participation in its programs. Any project installed during the suspension period is ineligible for incentives.

SMUD will ask the party being suspended to acknowledge the suspension. Regardless of the acknowledgement, the suspension period begins on the date of the notice of suspension. Legitimate incentives for projects found to be erroneous will be forfeited in all cases except those warranting a warning letter.

SMUD may apply suspensions to individuals, businesses, customers, contractors, equipment distributors and vendors.

Infractions are removed one year from the notice of suspension. The following table contains guidelines. SMUD reserves the right to accelerate or lengthen the suspension period in its sole discretion.

	Example of issue (not a comprehensive list)	Suspension period
Carelessness or unintentional variance	- Minor error in equipment count - Minor error in determining equipment wattage or capacity	- First infraction: Warning letter - Second infraction: 90 Days - Third infraction: 180 Days
Deliberate miscalculation	- Substantially overstating wattage/horsepower/tonnage of existing equipment (ex: claiming 3-ton heat pump as a 5-ton heat pump, a 150-Hp motor as a 250-Hp motor, etc.) - Major overstatement of heat pump count (>10%) - Improperly claiming project completion	- First infraction: 90 Days - Second infraction: 1 Year (12 months)
Fraud	- Doctoring manufacturers data sheets - Doctoring project cost documentation (invoices) - Submitting different invoices to SMUD and the customer - Submitting multiple applications for same project - Relocating or reselling incentivized equipment before the end of useful life - Knowingly islanding incentivized equipment from SMUD's grid before the end of its useful life	- First infraction: 1 Year (12 Months) - Second infraction: Permanent prohibition from participation.

14.0 Contact information

A representative of the Custom Retrofit Program team can be reached by email at CustomRetrofit@smud.org or by phone at (916) 732-5095.

Appendix A: Performance incentives

Where applicable, individual systems are calculated using spreadsheets or other tools to determine annual site electrification savings (measured in therms) or energy savings (measured in kWh). Site therms is the baseline equipment's gas usage offset by electrification technologies.

Electrification incentive:

- 1) \$ / therm for first year energy savings
therms = Baseline gas usage in therms offset by electrification technologies.
- 2) Incentives are limited to the lesser of:
 - a. \$ / therm
 - b. 90% of eligible project cost (refer to [Section 11.0](#))
 - c. \$250,000

Energy efficiency incentive:

- 1) \$ / kWh for first year energy savings for non-lighting measures
- 2) Incentives are limited to the lesser of:
 - a. Calculated \$ / kWh incentive rate
 - b. 50% of eligible project cost (refer to [Section 11.0](#))
 - c. \$100,000

For current incentive rates, visit smud.org/Custom.

Dual fuel systems

Heat pump systems with gas supplemental heat are eligible for prescriptive incentives provided the electric heat pump can provide at least 90% of the heating required (annually). A sequence of operations (SOO) or letter from the equipment vendor may be required for verification.

The prescriptive incentive only applies to the compressor capacity of the heat pump and not the capacity of the gas heater.

Proposed projects with dual fuel systems may be subject to reduced incentive rates.

Systems with heat recovery

Heat recovery systems transfer heat from zones requiring cooling to zones requiring heating, providing simultaneous heating and cooling.

Proposed projects with heat recovery systems may be subject to increased incentive rates.

Appendix B: Prescriptive incentives

Customers participating in the Custom Retrofit program may be eligible for Go Electric prescriptive incentives.

Electrification incentive:

- 1) \$ / unit
- 2) Incentives are limited to the lesser of:
 - a. \$ / unit
 - b. 90% of eligible project cost (refer to [Section 11.0](#))
 - c. \$250,000

SMUD's discretion will be used on the applicability of the prescriptive incentives. Prescriptive incentives are fixed (per unit) and calculated by SMUD.

For current incentive rates, visit smud.org/Custom.

Dual fuel systems

Heat pump systems with gas supplemental heat are eligible for prescriptive incentives provided the electric heat pump can provide at least 90% of the heating required (annually). A sequence of operations (SOO) or letter from the equipment vendor may be required for verification.

The prescriptive incentive only applies to the compressor capacity of the heat pump and not the capacity of the gas heater.

Proposed projects with dual fuel systems may be subject to reduced incentive rates.

Systems with heat recovery

Heat recovery systems transfer heat from zones requiring cooling to zones requiring heating, providing simultaneous heating and cooling.

Proposed projects with heat recovery systems may be subject to increased incentive rates.

Appendix C: Retro-commissioning (RCx) incentives

The retro-commissioning program is a controls incentive intended to capture optimization of existing energy management systems. Automated improvements to commercial and industrial facilities are also supported with this incentive. Retro-commissioning incentives are calculated and paid after confirmation is received that operational changes (i.e. EMS programming) are implemented, accepted, and operating properly.

Energy efficiency incentive:

- 1) \$ / kWh for first year energy savings
- 2) Incentives are limited to the lesser of:
 - \$ / kWh
 - 50% of eligible project cost (refer to [Section 11.0](#))
 - \$100,000

For current incentive rates, visit smud.org/Custom.

Requirements to qualify for the retro-commissioning incentive may include:

- 1) Commercial buildings must have centralized EMS with some trending capability.
- 2) A detailed analysis shall be submitted for incentive approval. The analysis shall contain transparent savings calculations or use common energy modeling software with transparent reporting of assumptions. Note that the audit can be broad (holistic) or can be focused on specific measures.
- 3) Prior to incentive approval, a Measurement and Verification plan shall be submitted for approval that details the methodology that will be used to monitor and validate the actual building/system performance.
- 4) Existing system must be reasonably modern and maintained.

Retro-commissioning measure eligibility is complex. Contact SMUD early to discuss your project.

Examples (partial list) of eligible retro-commissioning measures (commercial):

- Correct actuator/damper operation
- Correct economizer operation
- Adjust or implement condenser water reset
- Adjust or implement supply air temperature reset
- Adjust zone temperature dead bands
- Adjust equipment scheduling
- Adjust or implement duct static pressure reset
- Adjust or implement hot/cold deck reset
- Optimize variable frequency drive on fans or pumps
- Reduction in simultaneous heating and cooling

Examples (partial list) of eligible retro-commissioning measures (industrial)

- Compressed air system optimization
- Process heating or process cooling optimization

Appendix D: Pump energy assessment incentives

SMUD's pump energy assessment incentives are a monitored incentive designed to encourage optimizing the performance of ground water and surface water pump systems. Pre- and post-monitoring incentive is paid following installation and monitoring of all qualifying energy-saving pump or system improvement.

Energy efficiency incentive:

- 1) \$ / kWh for first year energy savings
- 2) \$ / pump provided for pre- and post- monitoring of pumps completing the project
- 3) Incentives are limited to the lesser of:
 - \$ / kWh
 - 50% of eligible project cost (refer to [Section 11.0](#))
 - \$100,000

Program applies to systems using pumps 25 HP or larger.

For current incentive rates, visit smud.org/Custom.

Pump test reports must include specific measurements specified below:

- 1) Monitoring must be performed by a qualified third-party provider
- 2) The pump test report shall contain the following:
 - a. Contact Information of both the pump technician and SMUD customer
 - b. Test date, test location, pump tag/identifier, and SMUD meter number
 - c. Motor nameplate data (manufacturer, model, HP, voltage, full load amps, power factor, RPM, efficiency)
 - d. Pump nameplate data (manufacturer, model, serial number, rated flow, rated head, pump type, discharge flange size, pump length)
 - e. Measured hydraulic data (starting water level, drawdown, discharge pressure, total lift, well yield)
 - f. Measured flow data (measured flow, measured discharge pressure)
 - g. Discharge pipe system (regulator nameplate and settings, pipe size, opportunities for system improvement)
 - h. Measured electrical data (amps, voltage, power factor, kW input)
 - i. Calculated data (horsepower input to motor)
 - j. Hours of operation
 - k. Calculated efficiency data (actual motor load, hydraulic horsepower, overall plant efficiency)
 - l. Recommendations and opportunities
 - m. Description of test equipment

Use of motor nameplate data to calculate plant efficiency is not adequate for this program. Motor load and energy consumption shall be determined using suitable electrical testing equipment or a dedicated SMUD energy meter if available.

Determination of motor performance by attempting to disaggregate the pump energy from other loads on a SMUD meter is not adequate for this program.

Appendix E: Compressed air leak detection and repair

SMUD's compressed air leak detection and repair incentives are designed to encourage optimizing the performance of compressed air systems. Incentives are paid following customer payment to a qualified contractor for a compressed air leak survey and repair of identified leaks. Incentives based on the first year kWh savings from the repair of identified leaks.

Energy efficiency incentive:

- 1) \$ / kWh for first year energy savings
- 2) Incentives are limited to the lesser of:
 - 100% of eligible project cost (which includes leak survey and repair costs)
 - \$100,000

Program applies to systems using compressors 25 HP or larger.

For current incentive rates, visit smud.org/Custom.

Requirements of the compressed air leak detection and repair incentives:

- 1) Leak survey and repair must be completed by qualified contractor. A firm is considered qualified at ultrasonic compressed air leak detection if the following are met:
 - a. An individual employed at the firm has obtained Airborne Ultrasound Course Level II Certification from UE Systems Inc. (or, equivalent training or experience) within the last 5 years. Please provide a copy of certification provided by the trainer.
 - b. If the firm does not have UE Systems (or equivalent) certification, they must describe what their training/experience is detecting and estimating the size of compressed air leaks with ultrasound and provide examples of successful projects.
 - c. The firm should also be capable of repairing leaks as they are found if they do not require capital investment, equipment or compressed air system shutdowns. They must describe their experience performing this type of work.
- 2) Leak survey shall contain the following:
 - a. Contact information of both the leak technician and SMUD customer
 - b. Test date, test location, and SMUD meter number
 - c. Compressor motor nameplate data (manufacturer, model, compressor type, HP, voltage, full load amps, power factor, efficiency)
 - d. Compressor capacity control (constant, load/unload, inlet modulation, variable displacement, VSD)
 - e. Hours of operation
 - f. Quantity of leaks
 - g. Individual leak size and CFM
 - h. Estimated repair costs
 - i. Estimated kWh energy savings from repairing the leaks
- 3) Ask SMUD for a list of qualified contractors

Appendix F: Ineligible measures

Measures and products ineligible for the Custom Retrofit program include but are not limited to:

- 1) Lighting fixtures and lighting controls
- 2) Technologies that fail to meet state and federal standards including the State of California Title-24 building efficiency standards and Title-20 appliance efficiency standards
- 3) Measures that are not permanently installed and can be easily replaced, including but not limited to:
 - a. Refrigerant additives
 - b. High performance hydraulic fluid
- 4) Measures that save energy solely due to behavior changes, including but not limited to:
 - a. Changing the hours of occupancy
 - b. Manually turning off equipment
- 5) Solar water heating for pools and spas
- 6) Power factor correction and power conditioning equipment
- 7) Uninterruptable Power Supply (UPS) equipment
- 8) Duty cyclers
- 9) Self-generation
- 10) Server virtualization
- 11) Networked desktop power management software