Sacramento Municipal Utility District

Advanced Commercial Solutions Procedures Manual

August 28, 2024

Powering forward. Together.

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1.0 Introduction

The Advanced Commercial Solutions Incentive Program (ACS Program) provides design assistance and calculated incentives to optimize non-residential projects for electrification and energy efficiency. Electrification refers to projects reducing gas use through implementation of efficient electric technologies, where savings are quantified in units of equivalent kWh (kWh-e). SMUD's 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 equipment. Depending on the project, a design team incentive may also be available to support innovative and cutting-edge electrification technologies for all-electric designs.

The ACS Program is comprised of both the Custom Retrofit (existing system) and Integrated Design Solutions (new construction and extensive renovation) incentive programs.

Note that changes to incentives and the program rules may occur between revisions of the Procedures Manual. Please visit smud.org/Custom or smud.org/IDS to ensure your version of the Procedures Manual is the most current.

Incentives are first-come, first-served. No incentive is reserved for your project until SMUD provides a signed Reservation of Incentive.

2.0 Program overview

1) The ACS Program uses an incentive application available upon request at CustomRetrofit@smud.org or IntegratedDesign@smud.org, or **916-732-5095**.
2) Owner incentives are calculated and dependent on annual electrification (kWh-e) and energy savings (kWh).
3) A design team incentive is available only for all-electric new construction or extensive renovations offsetting natural gas use.
4) A Reservation of Incentive, signed by SMUD, is required before construction and/or installation of the measure(s) begins.
5) The ACS Program offers different participation paths. SMUD will use the most appropriate option for each project to determine annual electrification (kWh-e) and energy (kWh) savings:
    a) **Performance approach:**
        i) **System calculation:** Individual systems are analyzed using spreadsheets or other tools.
        ii) **Whole building modeled:** Energy modeling software compares the baseline building performance to the proposed project.
    b) **Prescriptive approach:** Fixed incentives for qualifying equipment. The application process is more streamlined than the systems or whole building modeled approach.
6) For specific incentive requirements, refer to the Appendices.

3.0 How to apply

Request a copy of the ACS Incentive Program Application at CustomRetrofit@smud.org or IntegratedDesign@smud.org or call 916-732-5095.

The ACS Incentive Program Application is filled out and signed electronically using docusign™, and consists of the following three forms:

1) Incentive Application (Form 3714A)
   a) **Instructions** – This page contains a checklist of required items for each phase of the project (page 1).
   b) **Statement of Interest** – This is the first step in the application process, providing SMUD with background on the project. This is completed by the applicant, which is the party completing the application (page 2).
   c) **Payee Information** – The incentive recipient fills in necessary information. The payee is the party receiving the incentive. Note that the applicant and payee can be the same party (page 2).
   d) **Terms and Conditions** – The payee agrees to and accepts the Terms and Conditions. This is signed when submitting the Statement of Interest (page 3).
2) Reservation of Incentive (Form 3714B)
   a) **Reservation of Incentive** – Once the applicant submits all required documentation, SMUD will return a countersigned 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) **Incentive Payment Request** – Upon completion of the project, the payee submits the Incentive Payment Request to SMUD.

3.1 Projects in the proposal stage

For projects in the early proposal stage or pre-schematic design phase, the applicant should submit the following information to receive an incentive estimate:

1) Incentive application, completed and signed.
2) Technical documents to allow estimation of incentive. Additional information may be required to support the analysis, such as equipment cut sheets, energy models, supporting calculations, etc.
3) For additional incentives, customers may consider participating in SMUD's optional automated demand response program, by submitting a PowerDirect® Statement of Interest.

Remember, it is never too early to reach out to SMUD for an estimated incentive.

Incentives are first-come, first-served. No incentive is reserved for your project until SMUD provides a signed Reservation of Incentive.

3.2 Projects under contract

For projects under contract where construction is imminent, the applicant submits the following information to receive a Reservation of Incentive:

1) Incentive application, completed and signed.
2) Technical documents to allow Reservation of Incentive.
    a. Additional information may be required to support the analysis for the systems that will be installed, such as detailed scope of work, equipment cut sheets, energy models, supporting calculations, etc.
    b. Copy of the purchase order, signed contract, or a notice to proceed.
3) Coordinate with SMUD for a site inspection ***before*** work begins to document the existing systems.

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

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

If the milestones and project completion dates are not met, the Reservation of Incentive may be cancelled. Pending budget availability, the project may be issued a new Reservation of Incentive under the rules of the current program year.

3.3 Projects ready for payment

When the project is complete and operational, the applicant must submit the following:

1) Incentive Payment Request
2) Technical documents to allow final calculation of incentive based on the installed scope of work.
3) Invoices capturing project cost, contract and/or notice to proceed. Refer to section 13.0 for more information.
4) Coordinate with SMUD for a site inspection to document the installed systems.

SMUD will inspect the project, adjust the incentive if necessary and release incentive funds for payment.

4.0 Eligibility for participation

4.1 Customer eligibility

The ACS 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 partner firm may also be eligible for a design team incentive through Integrated Design Solutions.

The customer must assign the incentive to the partner firm on the Incentive Payment Request (Form 3714C). The partner firm receiving an 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

ACS projects must meet the following criteria:

1) Located in SMUD service territory.
2) Is categorized as one of the following:
   a) Retrofit of existing systems (including retro-commissioning)
   b) New construction
   c) Extensive renovation, defined as complete replacement of two of the three building systems (mechanical, lighting, envelope).
3) 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.
4) Customer is early enough in the project development to consider design changes.
   a) For participation with Custom Retrofit, a completed incentive application must be provided to SMUD before equipment is ordered and any work begins.
   b) For participation with Integrated Design Solutions for a potential owner's incentive for the systems calculation, whole building modeled and prescriptive approach, the customer needs to provide a completed incentive application prior to 100% design development documents. For all-electric projects designed with beneficial electrification technologies to offset gas usage, refer to Appendix A for requirements for a potential design team incentive. For projects submitted after 100% design development, for potential incentives:
      i) Only measures that SMUD recommends and are incorporated into the design will be considered eligible.
      ii) Verification will be required that the design was altered based on the recommended measures from SMUD.
5) Contractor must be licensed and qualified to perform the work specified in the Statement of Interest.
6) All applicable permits must be pulled and closed.

7) New equipment meets all applicable codes, including the State of California Title 24 part 6 and Title 20.
8) Payee must be willing to participate in SMUD's future review of the project's performance for the purpose of determining the ACS 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.
9) The applicant has not been suspended from participating in the ACS Program.
10) Installed technologies do not appear on the Ineligible Measures List (refer to Appendix I).

5.0 Qualifying electrification and energy efficiency measures

Requirements of technologies applying for the ACS Program include:

1) **Cannot overlap other incentive/rebate programs –** Any measures included in the application cannot apply for multiple electrification and energy efficiency incentives or rebate programs. SMUD, at its sole discretion and with preapproval, may make exceptions for projects using special SMUD PowerDirect or SMUD R&D programs. Cost caps will be observed when utilizing multiple programs.
2) **Fuel substitution measures –** SMUD can pay incentives on projects that switch from a fossil fuel to an efficient electric energy supply, also known as electrification. Fuel substitution measures require additional approvals. Using less gas in the proposed buildings 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.

With prior approval from SMUD, manufacturing facilities and industrial processes may be eligible for an electrification incentive. An industry standard baseline that uses natural gas and is shown to be less expensive to implement needs to be established for the project.

For projects previously all-electric, pre-approval from SMUD is required to be eligible for electrification incentives.

6.0 Projects that increase electrical load

Projects applying for incentives may add electrical load to their existing condition.

6.1 Industrial production

Energy efficiency incentives are available for process improvement projects resulting in greater overall consumption provided the specific consumption (kWh per unit) decreases. For example, if due to improvements in technology, a manufacturer adds a second manufacturing line that has a lower specific consumption than the first manufacturing line, it would be considered energy efficiency for the purposes of calculating an incentive.

To be eligible for incentives, a project that adds load must demonstrate greater incremental cost for the efficient option when compared to the industry standard or other actual alternatives the customer considered. The incentive is intended to help bridge the cost gap. In the unlikely event that the more-efficient option is less expensive than the baseline option, the project will not be eligible for incentives.

6.2 SMUD Go Electric

Electrification projects switching from gas to electric, such as space, domestic hot water, kitchen appliances, industrial applications, or other projects adding electrical load, may impact SMUD's electrical infrastructure.

6.3 SMUD infrastructure evaluation

Existing infrastructure capacity was based on the calculated load of the existing building, thus while an electrical panel may have capacity to serve an added load project, SMUD's electrical infrastructure may need to be upgraded ***at the owner's expense***.

SMUD offers a preliminary assessment of transformer and infrastructure capacity serving businesses anticipating potential infrastructure impacts due to added load projects.

Request an assessment of existing infrastructure at CustomRetrofit@smud.org or IntegratedDesign@smud.org or call 916-732-5095.

7.0 Performance approach

Incentives are calculated by determining the difference in annual energy consumption between the proposed efficient system and a baseline system.

7.1 System calculation

Individual systems are calculated using spreadsheets, or with prior approval from SMUD, other software tools to determine annual electrification (kWh-e) and energy (kWh) savings.

7.2 Whole building modeled

SMUD accepts building simulation software approved by the California Energy Commission. With prior approval from SMUD, software not listed with the California Energy Commission 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. Refer to Appendix C for a more detailed description of the whole building simulation methodology.

8.0 Prescriptive approach

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. Please refer to Appendix D for more information.

9.0 Demand reduction incentive

The ACS Program does not offer incentives for peak demand reduction. However, SMUD's optional PowerDirect Automated Demand Response program offers payments to SMUD customers for reducing electrical demand during a PowerDirect event when needed. Visit smud.org/PowerDirect for more information.

10.0 Program alternatives

For existing buildings replacing HVAC, refrigeration and food service equipment, electrification and energy efficiency upgrades, the project may be eligible for the Complete Energy Solutions program (smud.org/CES). Additionally, there are several other program offerings through SMUD that may prove to be beneficial, such as Greenergy®, SolarShares®, PowerDirect and Electric Vehicle Service Equipment (EVSE) opportunities. Check smud.org/GoElectricBiz and reach out to your Strategic Account Advisor for the most current program offerings.

New construction multi-family and mixed-use buildings may use the All-Electric Smart Homes (smud.org/SmartHomes). Existing multifamily buildings can apply for Multifamily Whole-Building housing incentives (smud.org/MultiFamily).

11.0 Incentive payments

11.1 First come, first served

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.

11.2 Incentives/rebates from other programs

SMUD, at its sole discretion, will determine the most applicable SMUD incentive program for a customer. Once an application is submitted to one of SMUD's incentive or rebate programs, unless approved by SMUD, an application may not be resubmitted to a different program, even if the terms of the second program are more favorable.

11.3 Incentive rates and caps

The ACS 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.

Incentive caps are per program year (the current calendar year) and incentive payments are cumulative when compared to caps. A project cannot be divided across a calendar year to receive multiple incentives unless the phases are separately permitted with separate construction documents.

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

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

11.4 Multi-year projects

The ACS Program assists customers with projects having extensive development periods. Please refer to section 3.2 for program participation requirements.

11.5 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.

11.6 Incentive payments

Provided the project has been installed, the payee 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.

11.7 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 banned from participating in additional SMUD program offerings.

12.0 Post-installation inspection

Once the project is installed and operational, SMUD will 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 Duo, or Apple FaceTime).

13.0 Project costs

13.1 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.

13.2 Cost documentation

Prior to an incentive payment, SMUD requires the applicant 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, shipping and labor.
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 a rebate on the pump upgrade. SMUD may request the material and labor costs of the pump installation only.
3) 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. Project cost may not include any costs incurred in advance of an executed contract or order such as sales, marketing, audits, or assessments.
4) Labor (self-install): Assuming all relevant codes and standards are complied with, and program rules are otherwise 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.
5) 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.

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% or project cost, whichever is lower. **Incentive = $10,000 ($0.10/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)**

14.0 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:

14.1 Projects with Statement of Interest completed

Incentive applications for projects with a completed Statement of Interest will be nullified:

1) After one year unless progress has been made toward the Reservation of Incentive.
2) For a Custom Retrofit project, installation commences prior to the approved Reservation of Incentive.
3) Applicant is unable to provide appropriate and complete documentation (technical data sheets, signed contracts, etc.) for SMUD to issue the Reservation of Incentive before equipment is ordered.

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

14.2 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) The project fails to be installed, fully commissioned, or fully operational prior to the installation deadline.
3) Pre-determined project milestones are not met.
4) Applicant formally requests to withdraw from the program.
5) Applicant fails to provide complete documentation (incentive payment request, technical data sheets, invoices, etc.) within 60 days of project completion.
6) The application is a duplicate.

14.3 Appeal of termination

Prior to terminating or cancelling an application, SMUD will email a notice to the payee at the email address on the application. The payee has seven (7) days to provide a written appeal to CustomRetrofit@smud.org or IntegratedDesign@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) day appeal period, the application will be cancelled.

15.0 Payee suspension

If SMUD determines that a payee 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 or rebates.

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, 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 clear cases of fraud.

	Example of issue *(not a comprehensive list)*	**Suspension period**
Carelessness or unintentional variance	• Minor error in fixture count • Minor error in determining fixture wattage	• First infraction: Warning Letter • Second infraction: 90 days • Third infraction: 180 days
Deliberate miscalculation	• Substantially overstating wattage/horsepower/tonnage of existing equipment (ex: claiming 250W HID as 400W HID, 3 lamp fixtures as 4 lamp fixtures, claiming T8 fixtures as T12 fixtures, etc.) • Major overstatement of fixture count (>10%) • Improperly claiming project completion	• First infraction: 90 days • Second infraction: 1 year (12 months)
Fraud	• Doctoring manufacturers data sheets • Claiming already completed projects as new retrofits • 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.

16.0 Contact information

A representative of the Advanced Commercial Solutions Program team can be reached by email at CustomRetrofit@smud.org or IntegratedDesign@smud.org or by phone at 916-732-5095.

Appendix A: Design team incentive

The design team incentive will be available only for all-electric projects through Integrated Design Solutions. The design team may be eligible to receive this incentive, calculated as the lesser of:

1) For 2019 CA Energy Code (and earlier) permitted projects, 50% of the owner's electrification incentive or $10,000.
2) For 2022 CA Energy Code (and later) permitted projects, 25% of the owner's electrification incentive or $10,000.

The design team incentive is available if the following conditions are all met:

1) The customer has a completed incentive application (Form 3714A) on file with SMUD and is eligible to receive an electrification incentive.
2) The new construction or extensive renovation project is determined by SMUD to be all-electric, with limited to no gas infrastructure serving the building.
3) The design team incentive is only available for all-electric projects using the whole building modeled path.
    a. If the design team is submitting two separate models to better simulate the building systems, they are required to submit:
        i. A brief memo describing the project and specific electrification and energy efficiency upgrades in the Proposed design.
        ii. A table identifying the Standard and Proposed system type, efficiency and controls. For the Standard design, note the respective section from the permitted CA Energy Code and CA Alternative Calculation Method (ACM) Manual from which the measure was derived from.
        iii. The input and output reports of the Standard and Proposed models.
4) At least one beneficial electrification measure is designed into the project to offset gas usage. Examples of such measures are air to air heat pumps, air to water heat pumps, water to water heat pumps, water to air heat pumps, heat pump water heaters, or heat recovery chillers.
5) The items above are received and approved by SMUD prior to the Reservation of Incentive being issued for the project.

Appendix B: System calculation (electrification and energy efficiency)

Individual systems are calculated using spreadsheets or other tools to determine annual site electrification savings (measured in equivalent kilowatt-hours, or kWh-e) or energy savings (measured in kilowatt-hours, or kWh). Site kWh-e is the baseline equipment's gas usage (converted to kWh) less the proposed equipment's site electrical kWh usage.

Electrification Incentive:

1) $0.30 / kWh-e for first year energy savings:
   kWh-e = (baseline gas usage converted to kWh) – (proposed equipment electrical usage in kWh)
2) Incentives are limited to the lesser of:
   a. For Custom Retrofit, $0.30 / kWh-e, 90% of eligible project cost (refer to section 13.0), or $300,000.
   b. For Integrated Design Solutions:
      i. For 2019 CA Energy Code and earlier permitted projects, $0.30 / kWh-e, 50% of eligible project cost (refer to section 13.0), or $150,000.
      ii. For 2022 CA Energy Code and later permitted projects, $0.30 / kWh-e, 90% of eligible project cost (refer to section 13.0), $300,000.

Energy Efficiency Incentive:

1) $0.15 / kWh for first year energy savings for non-lighting measures.
2) $0.10 / kWh for lighting.
   a. For Custom Retrofit:
      i. All lighting applications submitted after August 15, 2024 will be reviewed on a case by case basis, and must be completed by September 30, 2024, no extensions.
      ii. All lighting applications submitted prior to August 15, 2024 must be reserved by September 1, 2024 and completed by June 30, 2025, no extensions.
      iii. Incentives are available on a first-come, first-served basis.
   b. For Integrated Design Solutions, the incentive for lighting design is only available for a whole building simulation, as described in Appendix C.
3) Incentives are limited to program $ / kWh incentive rates, 50% of eligible project cost (refer to section 13.0), or $100,000, whichever is less.
4) For the following specific technologies and strategies, please refer to the respective appendices for incentive rates:
   a. Appendix E: Horticulture operations
   b. Appendix F: Retro-commissioning (RCx)
   c. Appendix G: Pump energy assessment program
   d. Appendix H: Compressed air leak detection and repair

Appendix C: Whole building modeled (electrification and energy efficiency)

Whole building energy simulations are used to determine annual electrification (site kWh-e) and energy (kWh) savings using California Energy Commission approved software. Another software may be permitted with prior approval from SMUD.

Electrification Incentive:

1) $0.30 / kWh-e for first year energy savings.
   kWh-e = (Baseline gas usage converted to kWh) – (Proposed equipment electrical usage in kWh)
2) For Integrated Design Solutions, incentives are limited to:
   a. For 2019 CA Energy Code and earlier permitted projects, $0.30 / kWh-e, 50% of eligible project cost (refer to section 13.0), or $150,000, whichever is less.
   b. For 2022 CA Energy Code and later permitted projects, $0.30 / kWh-e, 90% of eligible project cost (refer to section 13.0), $300,000, whichever is less.

Energy Efficiency Incentive:

1) $0.15 / kWh for first year energy savings for non-lighting measures.
2) $0.10 / kWh for lighting design.
3) Incentives are limited to program $ / kWh incentive rates, 50% of eligible project cost (refer to section 13.0), or $100,000, whichever is less.

When modeling the baseline building, the design team may submit a separate building model, representing the permitted CA Energy Code Standard building, using the following guidelines:

1) Incorporate the defined HVAC system for the permitted CA Energy Code Alternative Calculation Method (ACM) Reference Manual (System Descriptions) for the building(s) on site.
2) Use the weather file as defined in the ACM Reference Manual (Climate Data) for CA Energy Code Climate Zone 12.
3) Incorporate the permitted CA Energy Code minimum performance on the envelope (wall, slab, roof, glazing), HVAC (efficiency) and lighting (LPD).
4) Include any operating conditions the permitted CA Energy Code (and the ACM Reference Manual, where applicable) impose on a Standard building, such as supply air temperature, temperature resets (water/air), ΔT across the coils, pumping energy, fan energy, equipment sizing, economizers (water/air), VFD (pumps/fans/compressors), controls, data center cold aisle/hot aisle containment, refrigerated warehouse, etc.
5) Maintain identical, as in the Proposed building:
   a. HVAC zoning
   b. Physical features (building area, room area, orientation, window size/locations, etc.)
   c. Internal loading (occupancy, sensible/latent loads, DHW, receptacle, process, etc.). The internal loads should match the design intent as closely as possible, using the same diversity factors.
   d. Schedules

6) For determining the percent below the permitted CA Energy Code, use the permitted CA Energy Code Time Dependent Valuation (TDV) values.
    a. For an energy efficiency incentive:
        i. The Proposed building design incorporating mixed fuel needs to be 10% or better than the CA Energy Code minimally compliant building using TDV for 8760 hours for California Climate Zone 12.
        ii. For an all-electric building design, the project only needs to comply with the permitted CA Energy Code to receive an energy efficiency incentive.
            1. Only areas with space conditioning technologies receiving an electrification incentive will be eligible for a potential energy efficiency incentive.
            2. All other areas need to comply with the 10% or better than the permitted CA Energy Code for a potential energy efficiency incentive.
    b. When determining the % better than the CA Energy Code with TDV, exclude receptacle, process, other lighting and process motors from the standard and proposed buildings.

For building projects required to tie into an existing central plant, use the following guidelines:

1) The Standard and Proposed buildings will use the existing central plant performance and control strategies.
2) Some examples of energy savings realized from the proposed building will be:
    a. Reduction in gas usage using beneficial electrification technologies (such as heat pumps).
    b. Electrical savings through more effective use of the central plant chilled water, such as four pipe VAV boxes, greater chilled water ΔT, or warmer chilled water set points.
    c. Central plant pumping energy realized as a benefit (or detriment) for the Proposed building.
3) The intent is the primary heating and cooling systems the building is tied to, beyond five feet from the building, are identical between both models.
    a. The Standard building would use the permitted CA Energy Code, using the ACM Reference Manual (System Descriptions).
    b. The proposed building model would be as designed.
4) If the central plant happens to also be undergoing upgrades, the standard building in that case would be modeled with the respective CA Energy Code for the specific upgrades made, with all other central plant systems remaining identical between the two models.

The electrification and energy savings would be determined by comparing the Standard and Proposed results. When comparing the results of the separate Standard and Proposed models, where a Standard and Proposed building is generated, use the “Proposed” model results of each.

Submit a memo describing the project, identifying notable electrification and energy efficiency measures (equipment and control strategies). Include a table highlighting the Standard and

Proposed building systems and control strategies that includes relevant sections of the permitted CA Energy Code and Alternative Calculation Method (ACM) Manual used to define the Standard building.

Once the results for the models are identified by building system (i.e. space heating, space cooling, indoor fans, heat rejection, pumps & misc., domestic hot water, indoor lighting, receptacle, process, other lighting and process motors), SMUD can determine the electrification and energy efficiency savings and incentive.

Appendix D: Go Electric prescriptive incentives

Customers participating in an ACS program can apply for Go Electric prescriptive incentives. Prescriptive incentives are fixed (per unit of capacity).

Note: Go Electric incentives are also available through the Complete Energy Solutions smud.org/CES program. The procedure manual for the CES program is available on the website.

Go Electric offers the three following prescriptive incentives to ACS projects:

1) **Permitting and engineering assistance –** For existing buildings, this incentive supports the electrical engineering and permit that may be required for many heat pump projects. All projects receiving SMUD incentives must finalize permits with the authority having jurisdiction. One incentive is available per permitted project. The incentive offered for eligible projects is up to $7,000.
2) **Electrical infrastructure improvement –** Electrification projects commonly require modification of existing infrastructure. For existing buildings, this incentive supports the electrical infrastructure that may be required for many heat pump projects. The incentive offered for eligible projects is up to $50,000.
3) **Equipment incentive –** Per-unit prescriptive incentives to replace gas fired equipment with electric equipment. The incentive offered for eligible projects is the lesser of:
    a. For Custom Retrofit, system prescriptive incentive, 90% of eligible project cost (refer to section 13.0), or $300,000.
    b. For Integrated Design Solutions:
        i. For 2019 CA Energy Code and earlier permitted projects, system prescriptive incentive, 50% of eligible project cost (refer to section 13.0), or $150,000.
        ii. For 2022 CA Energy Code and later permitted projects, system prescriptive incentive, 90% of eligible project cost (refer to section 13.0), $300,000.

Please engage SMUD for current incentive rates and requirements for participation.

Hybrid 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). Systems unable to achieve this threshold can apply for calculated system approach (Appendix B) or whole building approach (Appendix C).

Heat pumps used to provide supplemental heat to an existing gas water heater are considered hybrid systems and are ineligible for the electrical infrastructure improvement incentive and the permitting and engineering assistance incentive.

Heat pump systems with electric supplemental heat, occasionally called hybrid systems, are considered all-electric and are eligible for prescriptive incentives including permitting and infrastructure improvement incentives.

For current Go Electric incentives, see the latest update at smud.org/GoElectricBiz.

Appendix E: Horticultural operations

Depending on measure selected, SMUD uses a calculated or prescriptive approach to determine the incentives for equipment used in horticulture operations. Examples of these systems include indoor horticultural grow lighting, mixed lighting, high efficiency air conditioning and dehumidification equipment, horticultural product extraction and manufacturing process equipment for horticulturally derived products.

Horticultural grow lighting:

1) $200 / fixture
    a. LED horticulture fixtures replace HPS horticulture fixtures one-for-one.
    b. All fixtures must satisfy the technical requirements and must be listed on the Design Lights Consortium's Horticultural Lighting Qualified Products List (QPL) at designlights.org.
        i. Fixture types not categorized on the QPL may still be eligible. Contact the Cannabis Operations team for further details (smud.org/Cannabis).
    c. Mixed light (greenhouse) facilities are excluded from the $200 / fixture incentive. SMUD will use a calculated approach to determine the incentive at $0.10 / kWh.
2) Horticultural grow lighting incentives are limited to $200 / fixture (or $0.10 / kWh for a calculated approach), 50% of eligible project cost (refer to section 13.0), or $50,000, whichever is less.
3) Cannabis production facilities have valid licenses issued by the California Department of Cannabis Control (DCC).
4) For Integrated Design Solutions projects permitted under 2019 or earlier CA Energy Code, the incentive application needs to be submitted prior to the date the building permit (or any part thereof) is applied for and before fixtures are purchased.
5) For Integrated Design Solutions projects permitted under 2022 or later CA Energy Code:
    a. Horticultural grow lighting incentives will not be available.
    b. Mixed fuel projects 10% better than the permitted CA Energy Code and all-electric projects are eligible for potential electrification and energy efficiency incentives for measures other than horticultural grow lighting.
6) For Custom Retrofit and Integrated Design Solutions:
    a. All lighting applications submitted after August 15, 2024 will be reviewed on a case by case basis, and must be completed by September 30, 2024, no extensions.
    b. All lighting applications submitted prior to August 15, 2024 must be reserved by September 1, 2024 and completed by June 30, 2025, no extensions.
    c. Incentives are available on a first-come, first-served basis.

HVAC, process equipment and general lighting:

1) HVAC and process equipment
    a. $0.15 / kWh for first year energy savings.
2) General lighting
    a. $0.10 / kWh for first year energy savings.
        i. For Custom Retrofit:
            1. All lighting applications submitted after August 15, 2024 will be reviewed on a case by case basis, and must be completed by September 30, 2024, no extensions.
            2. All lighting applications submitted prior to August 15, 2024 must be reserved by September 1, 2024 and completed by June 30, 2025, no extensions.
            3. Incentives are available on a first-come, first-served basis.
        ii. For Integrated Design Solutions, the incentive for lighting design is only available for a whole building simulation, as described in Appendix C.
3) Incentives are limited to $0.15 / kWh (HVAC and process equipment) plus $0.10 / kWh (general lighting or calculated horticulture lighting), 50% of eligible project cost (refer to section 13.0), or $100,000, whichever is less.

The maximum total available incentive is $100,000 for any combination of energy efficiency measures including horticultural grow lighting, HVAC, process equipment and general lighting projects. Projects that involve electrification are subject to a separate incentive cap. Please contact SMUD for more information.

Appendix F: Retro-commissioning (RCx)

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) $0.08 / kWh for first year energy savings
2) Incentives are limited to $0.08 / kWh, 50% of eligible project cost (refer to section 13.0), or $100,000, whichever is less.

Other requirements of the retro-commissioning incentive:

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 G: Pump energy assessment program

SMUD's Pump Energy Assessment Program is 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) $0.15 / kWh for first year energy savings
2) $500 (per pump) provided for pre- and post- monitoring of pumps successfully completing the program
3) Incentives are limited to $0.15 / kWh, 50% of eligible project cost (refer to section 13.0), or $100,000, whichever is less.

Program applies to systems using pumps 25 HP or larger.

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 H: 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) $0.08 / kWh for first year energy savings
2) Incentives are limited to 100% of eligible project cost (which includes leak survey and repair costs), or $100,000, whichever is less.

Program applies to systems using compressors 25 HP or larger.

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 UESystems 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 I: Ineligible measures

Measures and products ineligible for SMUD's ACS Program:

1) Measures installed prior to application approval
2) Compact fluorescent lamps (CFLs)
3) Fluorescent products not meeting performance standards
4) Screw-in, medium base (E26) LED lamps
5) LED retrofit kits when an equivalent, complete LED fixture is available, unless existing conditions prohibit the use of a complete LED fixture and is also pre-approved by SMUD
6) Tubular LED (TLED) lamps
7) LED products that do not appear on either the Design Lights Consortium Qualified Products List or Energy Star certified products list, unless pre-approved by SMUD
8) Incandescent lighting used for general illumination
9) Technologies that fail to meet state and federal standards including the State of California Title 24 and Title 20
10) Measures that are not permanently installed and can be easily replaced such as:
    a. Refrigerant additives
    b. High performance hydraulic fluid
11) Solar water heating for pools and spas
12) Duty cyclers
13) Measures that save energy solely due to behavior changes (changing the hours of occupancy for example)
14) Building Envelope Measures:
    a. Cool Roofs
    b. Windows/Glazing
    c. Added Insulation
15) Power factor correction and power conditioning equipment
16) Self-generation
17) Repair or maintenance of existing equipment unless participating in a Retro-commissioning incentive or pump energy assessment project
18) Coil cleaning
19) Filter changes
20) Server virtualization
21) Networked desktop power management software