



RETROCOMMISSIONING PROGRAM PROCESS

Commercial & Institutional Buildings

San Diego Retrocommissioning Program

The San Diego RCx Program operates in six distinct phases: Project Start, Screening, Agreement Development, Investigation, Implementation, and Follow-Up. Each phase has key deliverables and milestones identified by the Program to ensure successful execution of the retrocommissioning of each building. Below, descriptions of each phase are detailed, including the deliverable(s) expected in each phase from the RCx Provider. Refer to the Program Flowchart at the end of this document for the expected duration of each phase.

Project Start

Through recruitment and marketing, a building owner learns about the San Diego RCx Program opportunity. The first step to participate in the Program is to fill out a *Program Application* (“Application”) and *Utility Data Authorization Form* (“Authorization Form”). The application gathers general information to help establish candidacy, and presents the requirements for eligibility. The Authorization Form allows release of the customer’s utility bill data to PECI for the previous 12-24 months, as well as for the duration of the Program should the customer qualify and continue with the entire Program. Upon submission of the Application and Authorization Form, a review is conducted and, if approved, a site visit will be arranged during which a Program Representative will meet with building staff and conduct a facility walk-through.

Candidate Screening

The overall purpose of candidate screening is to confirm eligibility for the Program and assess potential for cost-effective retrocommissioning opportunities. Screening includes recording information about the building and its equipment and identifying any issues that may preclude participation.

The screening generally takes two weeks to complete from receipt of the Application, depending on the size and complexity of the facility. A *Screening Summary* and *Scorecard* will be produced to establish the building’s eligibility for the Program. Additionally, the building will be benchmarked through the ENERGY STAR[®] Portfolio Manager to rate the building’s performance at project start.

If the screening finds adequate retrocommissioning opportunities to participate in the Program, the owner receives a “Welcome” letter. If retrocommissioning opportunities are not found, the owner receives notice and referrals to other SDG&E[®] programs for which they may be eligible.

Agreement Development

Once accepted, the owner selects a Retrocommissioning Provider (“RCx Provider”) from a pre-qualified list of providers to conduct the investigation. The investigation incentive for the RCx Provider and the implementation cost cap for the owner will be calculated. Prior to the RCx investigation, the owner is required to sign an *Owner Program Agreement* (“OPA”), confirming their understanding of and agreement to the Program’s requirements, terms, conditions, and process, and their obligations and willingness to proceed with RCx investigation and implement, at a minimum, the selected RCx measures that payback in one year or less. Upon receiving a signed OPA, the RCx Provider is issued a *Scope of Work*, which outlines the RCx Provider’s commitment and obligations for the project. The *Scope of Work* is submitted to the RCx Provider along with the screening findings. If the RCx Provider agrees to the *Scope of Work*, a contract is signed between PECI and the RCx Provider to complete the work.



Retrocommissioning Investigation

During the investigation, the RCx Provider conducts a rigorous analysis of the building operations. Through observation, targeted functional testing, and trend data analysis, the RCx Provider identifies deficiencies in the operation of the mechanical equipment, lighting, and related controls. The RCx Provider then determines opportunities for corrective action and other operational and maintenance improvements that reduce energy consumption and demand and records them in the Program's Findings Workbook.

While the RCx investigation focuses on low-cost improvements with short paybacks, major capital improvement opportunities may also be identified. Retrofit measures are beyond the scope of the Program; therefore, in these cases, the RCx Provider will direct the owner to other Programs offered by SDG&E[®] that may provide incentives or rebates for retrofitting.

The results of the RCx investigation are summarized in the *Master List of Findings* (included in the Findings Workbook). The *Master List of Findings* provides a complete set of measures identified during the RCx investigation and includes findings and measure descriptions, energy savings calculations, estimated costs, and simple payback calculations. When compiling the estimated implementation costs by measure, the RCx Provider should include estimated contractor costs and optional RCx Provider costs for additional implementation assistance. Additional assistance from the RCx Provider is encouraged, particularly for more complex or highly-interactive measures, though it is a completely optional service for the owner. Prior to completing the *Master List of Findings*, the RCx Provider should establish with the owner the level of assistance desired or warranted for potential measures and, as appropriate, detail that assistance in the estimated implementation costs.

Any proposed RCx Provider assistance included in the payback calculation in the *Master List of Findings* will be considered part of the implementation costs for the building owner. Ultimately however, the owner has the option on whether to accept these costs and contract with the RCx Provider for their implementation assistance. If the owner chooses not to utilize the RCx Provider during implementation, a recalculation of the estimated implementation costs (without RCx Provider assistance costs) will be performed to reexamine the paybacks and measure eligibility for the Program's implementation incentive.

Upon approval, the RCx Provider presents the *Master List of Findings* in a meeting with the owner and Program Representative. The RCx Provider and Program Representative assist the owner in selecting measures that have the greatest energy savings opportunities and best meet their needs and budget circumstances. An *Implementation Incentive Offer* is signed between the owner and PECO to determine the amount the owner will receive in incentives for measures that pay back in greater than one year.

The final package of improvements is presented to the owner in the *RCx Investigation Report*. The *RCx Investigation Report* is a narrative report detailing information from the *Master List of Findings* which includes the selected measures for implementation, the energy savings and payback calculations, and recommendations for implementation that are explicit enough for contractors or in-house staff to understand the scope of work. To help facilitate implementation of the selected measures, the RCx Provider assists the owner with determining more accurate costs than were indicated in the *Master List of Findings*. Upon completion of the deliverables, the investigation incentive is paid directly to the RCx Provider, 50% upon completion and approval of the *Master List of Findings* and the remaining portion upon submission and approval of the *RCx Investigation Report*.

Implementation

Using the *RCx Investigation Report* for implementation, the Program allows flexibility in how the owner wishes to implement the selected measures. For instance, the owner may utilize in-house building staff, hire the RCx Provider to implement or provide technical assistance, contract with outside service contractors, or



any combination of the above. The *RCx Investigation Report* will provide sufficient detail for the owner to accurately specify the implementation tasks to staff or contractors.

A portion of the project's follow-up incentive will be designated for the RCx Provider to be available to answer owner or contractor questions regarding measures being implemented and to verify measures, update savings calculations, and produce the *Implementation Summary Table*. Specifically, the tasks include:

1. Prior to work starting, review the contractor bids ensuring that the contractor scopes of work adequately reflect the intent of the original recommendations and include verification of performance sufficient to meet the Program's requirements. If needed, answer questions that arise during implementation, and provide clarification or advice on measures being implemented.
2. Report on the progress of each measure until implementation is complete using the Program's database.
3. If needed, attend implementation progress meeting(s) with the owner and Program Representative to discuss implementation actions taken to date and resolve any issues that have arisen.
4. Verify completion of each measure and update Findings Workbook including final savings, costs, and payback calculations to produce the *Implementation Summary Table* (included in the Findings Workbook). To support the *Implementation Summary Table*, all measures must have verification data and updated savings calculations. When feasible, verification data should include trends or functional test results, though other methods, such as copies of invoices, site visit reports, and before/after photos, may be acceptable.

Once implementation is complete, the Program Representative conducts a final site visit and transfers the project's ENERGY STAR® account created as a part of the candidate screening with the pre-implementation score. The owner is instructed on how to use benchmarking as an ongoing energy management tool and as an indicator that building systems may need to be further maintained, improved or adjusted.

Upon approval of the *Implementation Summary Table* and after a final site visit has been conducted, the owner receives the implementation incentive payment and the RCx Provider receives 50% of the follow-up incentive payment.

Follow-Up

After implementation, it is essential for the building owner and operators to have the resources they need to ensure that the retrocommissioning savings persist over time. The Program's protocols provide consistent methods for documenting all RCx measures. Project documentation and deliverables form the basis of the training that the RCx Provider gives to building staff. The training itself is formatted in a way that can be easily reviewed by subsequent operating staff.

The base persistence plan for each facility shall contain the following minimum elements:

- **Targeted Documentation:** The RCx Provider is responsible for developing an *RCx Final Report* describing the implemented measures, including: new or improved sequences of operation; the energy savings impact of the measures; the requirements for ongoing maintenance and monitoring of the measures; and contact information for the RCx Provider, in-house staff or contractors responsible for implementation.
- **Training:** Before handing over the targeted documentation, the RCx Provider and contractors provide follow-up training for the owner and the appropriate building operations personnel on the new documentation and implemented measures. The training covers the measures that were implemented and requirements for ongoing maintenance and monitoring.



Twelve months after the project completion or at such time as determined by PEGI, a final benchmark score is generated for the building. If the owner requests a certified Statement of Energy Performance, PEGI will assist in obtaining the documents necessary to complete the report according to EPA standards.

Lastly, both the owner and Program require assurance that the selected measures were implemented correctly and the energy savings and other benefits will be long-lasting. Therefore, for larger and more complex projects, the Program will set up a system for tracking persistence of savings through the end of the Program. The system will monitor the RCx measures by using the existing building automation system trending capabilities or independent data loggers. The Program will analyze the data and make the information directly available to the owner and building operators through the Internet whenever possible.