

# 17<sup>th</sup> NATIONAL CONFERENCE ON BUILDING COMMISSIONING



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## Programmatic Approaches:

### The Future of RCx Program Delivery from California's Largest Utility

Keith Forsman  
Pacific Gas and Electric Company



Mike Anderson and Ann McCormick  
Newcomb | Anderson | McCormick



# AIA Quality Assurance



## Learning Objectives

- 1. Gain understanding of the delivery channels and programmatic approaches public utilities are employing to deliver large scale RCx programs.**
- 2. Recognize the tremendous opportunities and significant challenges associated with programs on this scale.**
- 3. Learn best-practices and innovations associated with RCx program processes and verification of energy savings.**

# About Pacific Gas and Electric Company



- One of the largest combined Gas and Electric utilities in the nation.
- Energy Services to:
  - 5.0 M Electric Customer Accounts
  - 4.1 M Natural Gas Customer Accts
- 70,000 square miles with diverse topography
- ~ 20,000 Employees
- Regulated by the California Public Utilities Commission (CPUC)

# Overview

- In concert with California's Energy Efficiency Strategic Energy Plan, PG&E anticipates energy efficiency program spending approaching a 2 billion dollars over the next three years with savings goals exceeding 5,700 GWh and 100 million therms.
- To achieve these unprecedented goals, PG&E, under the auspices of the CPUC, will continue to implement programs through three delivery channels which are defined as:
  - core programs,
  - government and statewide partnerships,
  - third-party programs.

# Overview, continued

- Building and Industrial Process Retrocommissioning (RCx) is considered a significant priority in this program delivery and is widely regarded as an untapped opportunity for significant and sustainable energy savings across various target markets.
- Standardization is necessary given the expanding scale of PG&E's RCx programs and the inherent rigor required for reporting and verification of program results in the regulated utility environment.

# Retro Commissioning at PG&E

- The first RCx programs appeared as CPUC approved programs in 2004 as part of a CPUC third party solicitation to allow outside vendor programs.
- Since 2004, PG&E's RCx programs have grown: Approximately \$3 million for core program and \$9 million for third party programs in 06-08 budget cycle.
- Some initial RCx program evaluations have not lived up to expectations, others have exceeded.

## Retrocommissioning at PG&E, continued...

- Continuation and expansion of programs require consistency & better performance
  - PG&E has developed minimum Submittal Standards and Guidelines for all programs to follow in order to manage this risk.
  - Work coordinated by PG&E with significant input from Flannagan Associates and Energy Metrics

# Purpose of RCx Guidelines

- Establish rules and guidelines for developing and implementing M&V plan that are appropriate for each project (both 3P and core).
- Describe a clear and consistent process and associated documents and data that must be submitted, reviewed and approved before proceeding to the next step.
- Ultimately, standardize processes and requirements across delivery channels.
- Measurement and Verification (M&V) Requirements Based on:
  - International Performance Measurement & Verification Protocol (IMPV) Options A-D
  - California Energy Efficiency Evaluation Protocols (aka Evaluators Protocols)
  - California Commissioning Collaboration guidelines

# Documentation Requirements

- Project Initiation Report: Facility description, gas/electric usage data, systems description, and preliminary RCx and M&V plans.
- Project Findings Report: Base Case established, recommended measures identified and any changes to the Initiation Report necessary.
- Project Implementation Report: Summary of measures implemented, measured savings, costs and supporting data.

# Standardization/Guidance Includes

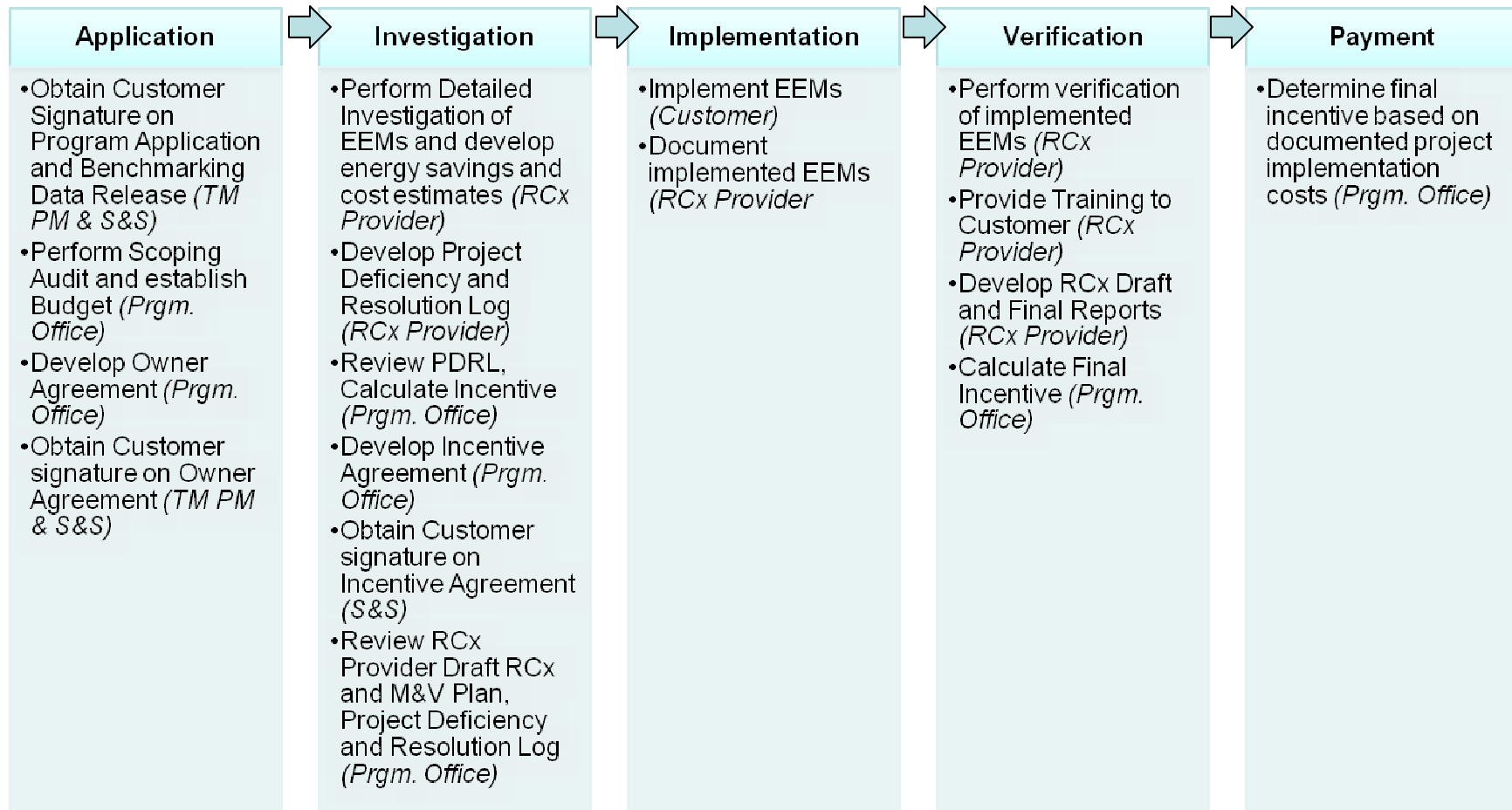
- Program qualification
- Eligibility of Measures and measure life
- Definition and documentation of baselines
- Required level of rigor of M&V
  - Moving toward 3 tier approach with ranges based on scale of energy saving
- Peak demand definition (per CPUC)
- Monitoring strategies and duration
- Measure analysis and reporting

# Core Program Review

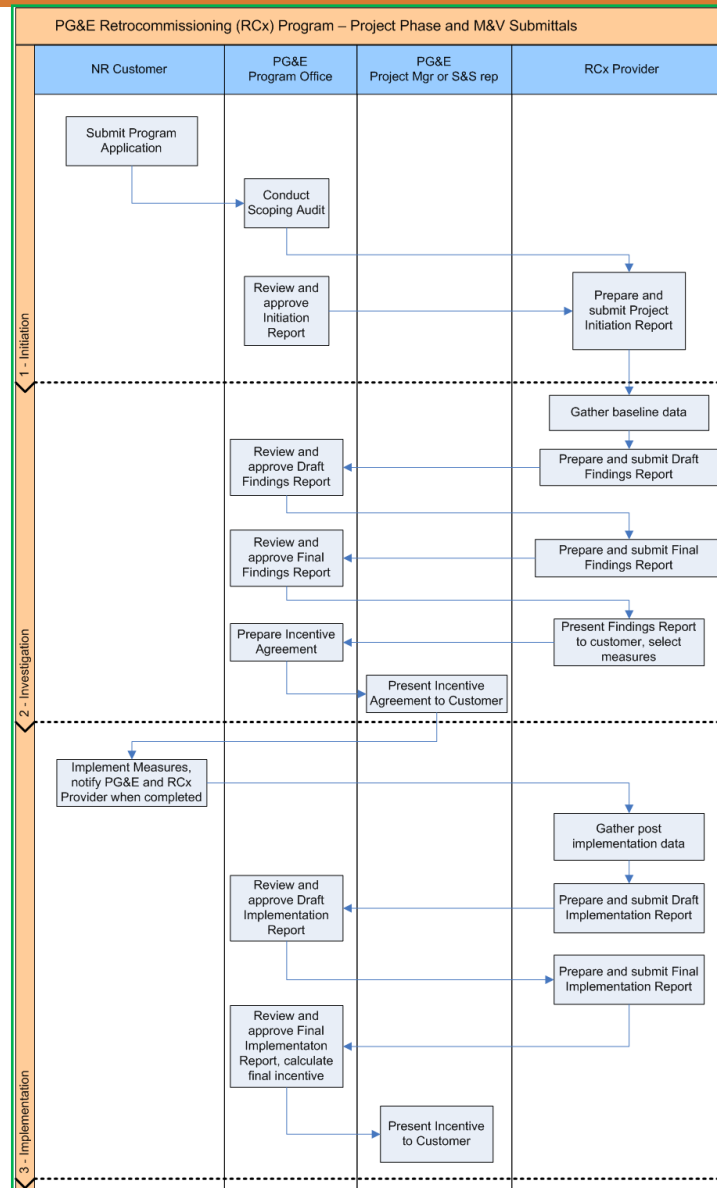
- The RCx Program provides incentives for building tune ups and optimization of equipment operation.
- Targets customers with >100 ksf of conditioned space or 500kW process load, but flexible requirements that include various market sectors, including industrial, high tech, agriculture and food processing.
- Program requires:
  - Documentation of savings, primarily through measurement and projection to annual results
  - Measures implemented after documented influence
  - Customer to implement measures with less than 1 year simple payback
  - No other rebate pending or received for measure
- Incentive \$100/kW, \$0.09/kWh, and \$1/therm annual achieved savings
  - Capped at 50% of total measure implementation cost
  - RCx Provider study, final report and training included

# Core Program Process

## RCx Project Phases



# RCx Program- Project Phase and M&V Submittals



# Roles and Responsibilities

## Core RCx Team Members

### Target Market Project Manager

- Ensure Project is progressing, inc. follow up on delayed deliverables
- Ensure applications are complete and accurate (Tax ID, SAID)
- Negotiate with customer regarding measures and incentive
- Coordinate closely with Program Office, Service and Sales, and Customer
- Communicate key issues to Program Office

### Service and Sales

- Qualify Projects, obtain customer signatures on Program Application, Owner Agreement, and Incentive Agreement
- Route signed applications through the Program Office
- Distribute incentive payment
- Refer customer to other programs (as needed)

### Program Office

- **Develop and maintain program policies and procedures**
- Perform scoping audit and budget assignment
- Assign RCx Providers for each committed project
- Perform technical review of deliverables, calculate incentive
- **Obtain support from IPC**

### RCx Provider

- Conduct Kick Off with Customer following Owner Agreement execution
- Develop Draft RCx and M&V Plans
- Obtain baseline performance data
- Develop and maintain Project Deficiency and Resolution Log
- Verify measure implementation
- Produce Draft and Final RCx Reports
- Provide Customer training

### Customer

- Work with PG&E and Assigned Consultant to provide facility access and staff
- Implement measures.

# Next Steps

- Continued development and roll out of standardized guidelines across delivery channels.
- Ongoing evaluation of program results, cost effectiveness; continuous improvement on lessons learned and simplification opportunities.
- Continued outreach to other program providers in California and beyond.

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Thank you!

Keith Forsman, Program Supervisor  
Pacific Gas & Electric  
415.973.2380  
[kef1@pge.com](mailto:kef1@pge.com)

Katie Elliott, Program Manager  
Pacific Gas & Electric  
415.973.3403  
[kxeb@pge.com](mailto:kxeb@pge.com)

Michael K.J. Anderson, Principal  
Newcomb Anderson McCormick  
415.230.8402  
[mike\\_anderson@newcomb.cc](mailto:mike_anderson@newcomb.cc)

Ann L. McCormick, Principal  
Newcomb Anderson McCormick  
415.230.8403  
[ann\\_mccormick@newcomb.cc](mailto:ann_mccormick@newcomb.cc)

