
Mainstreaming Retrocommissioning in a Utility Program: Lessons Learned

Steven Long, P.E.

Southern California Edison

Eliot Crowe

Portland Energy Conservation, Inc.

Overview

- Observations based on the 2006-2008 Southern California Edison Retrocommissioning Program
- Highlights:
 - Program design
 - Results to date
 - Lessons learned
 - How challenges have been addressed



Overview

- Topics:
 - Marketing
 - Screening
 - Benchmarking
 - Owner commitment & timelines
 - Qualification of providers
 - Incentives/offer
 - Baseline data & calculations
 - Grocery store RCx
 - Peak demand reduction
 - Persistence



SCE RCx Program Background

- Original goals:
 - 39 million kWh net (NTG = 0.8)
 - 9,600 kW net
 - Estimated 150-250 projects
- Revised goals:
 - 24,000,000 kWh net
 - 4,470 kW net
 - 81 projects
- Results to date (Installed):
 - 1,520,972 kWh net
 - 3,019 therms net
 - 37kW net



Program Challenges

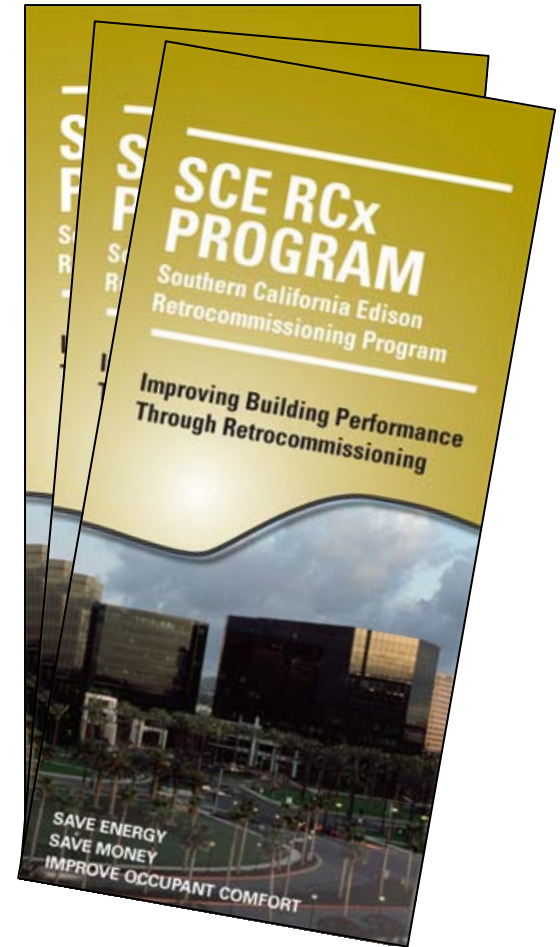
- Marketing
- Implementation of Measures
- The RCx Program Offer
- Maintaining Project Timelines
- Quality of Documentation and Backup
- Provider Qualification
- Persistence

Program Challenges

- **Marketing**
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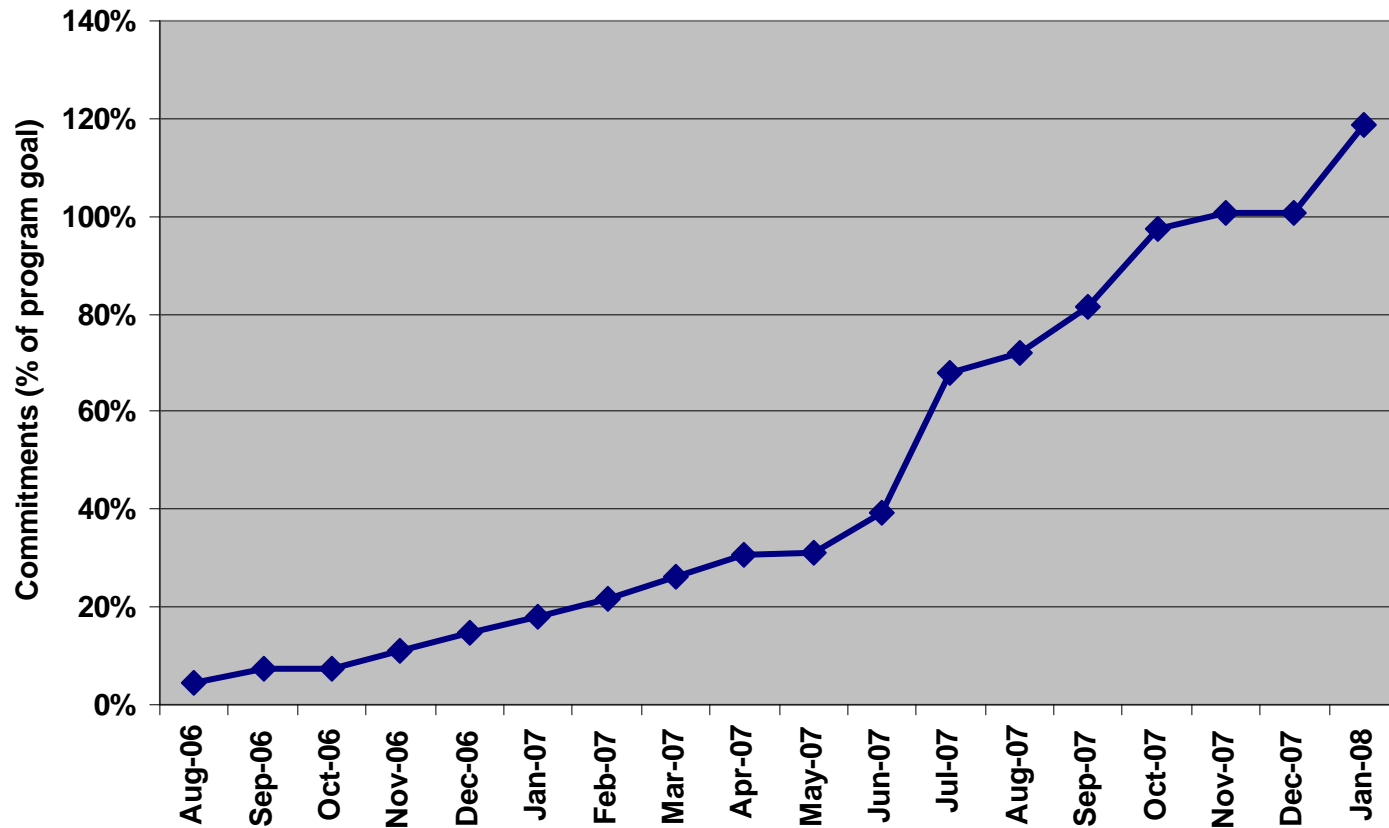
Marketing

- Perceived challenges
 - Limited market recognition
 - Low level of market momentum
- Approach taken
 - Multiple marketing channels
 - PEI field representatives, SCE account managers, RealWinWin, providers, BOMA
 - Marketing materials
 - Website, fact sheets, brochures, newsletter



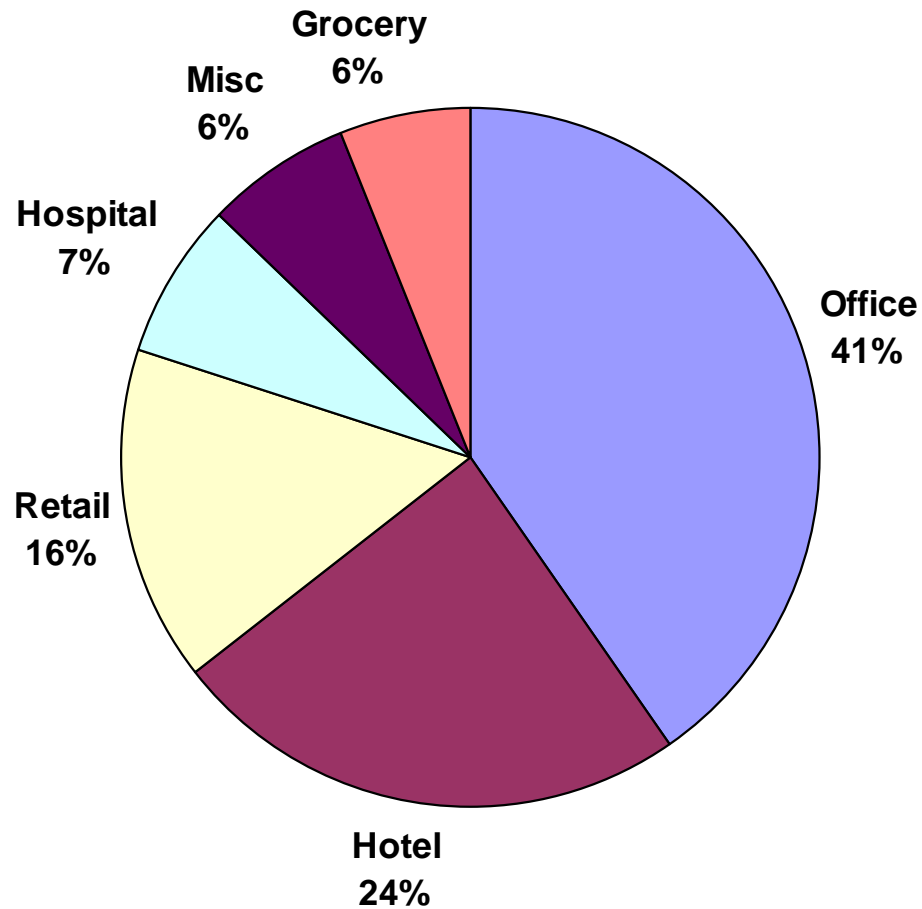
Marketing

- Results: Signed Owner Program Agreements



Marketing

- Commitments received, by sector (based on sq.ft.)



Program Challenges

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Implementation of Measures

- Perceived challenges
 - Conflicting priorities at project site
 - Complex ownership structures
- Approach taken
 - Owner signs agreement before investigation
 - Financial commitment to implement measures



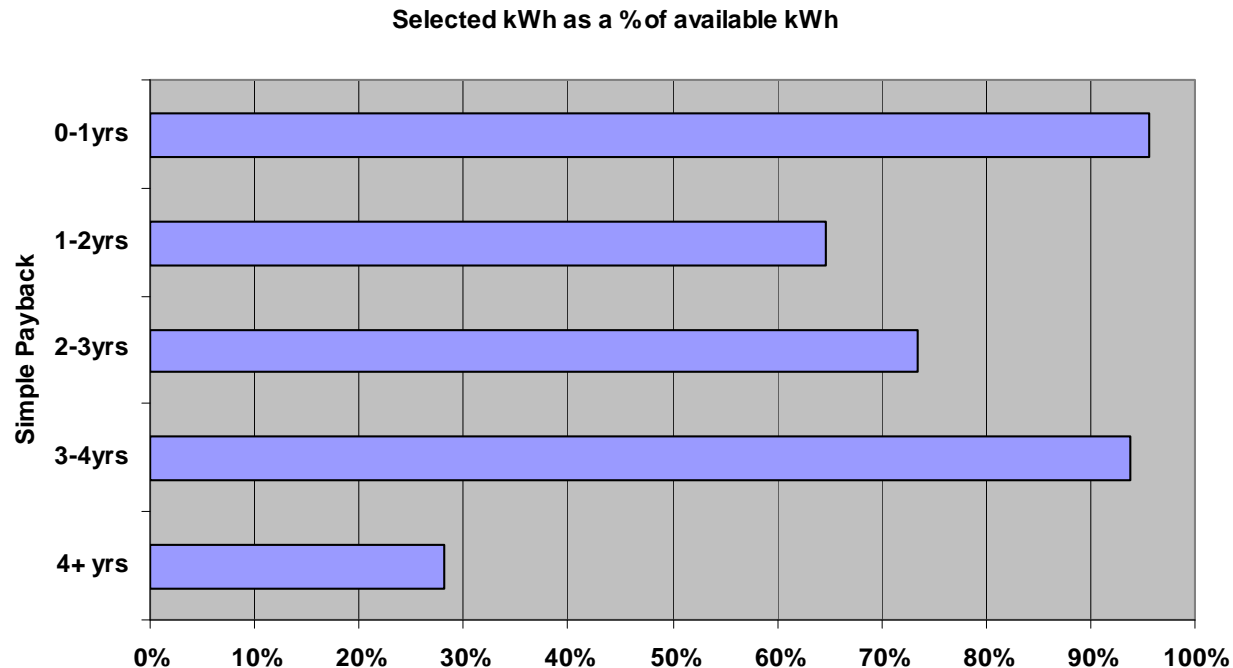
Implementation of Measures

- Results
 - Slow initial enrollment rate
 - High confidence level that owners will follow through with implementation
 - OPA filtered out ‘higher risk’ owners
 - Status
 - 11 projects completed to date
 - 19 projects in implementation
 - 6 at measure selection phase

Implementation of Measures

- Results

- Measures selected by owners for implementation account for 83% of the total available savings



Program Challenges

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The RCx Program Offer

- Perceived challenges
 - Setting appropriate level of provider fees
 - Incentive structure: flexibility vs. simplicity
 - Integration and overlap with other program offerings
- Approach taken
 - Provider fee set based on sq.ft, equipment quantity, electric EUI
 - Matched incentives for overlapping programs



The RCx Program Offer

- Results
 - Fixed fee investigation increases program financial risk for low savings projects
 - Some confusion over incentive structure
 - RCx-only structure resulted in problems:
 - Sequencing RCx & planned retrofit work
 - Virtually impossible to separate RCx and retrofit savings if carried out together
 - RCx investigation may determine that retrofit is a better option

Program Challenges

- Marketing
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- **Maintaining Project Timelines**
- Quality of Documentation and Backup
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Maintaining Project Timelines

- Perceived challenges
 - Complex multi-stage process
 - Long project durations
 - Limited program control for implementation
- Approach taken
 - Rigorous agreements (owner & provider)
 - Screening replaced scoping
 - Detailed toolkit for providers
 - Bonus for quick implementation
 - “Fast Track” projects



Maintaining Project Timelines

- Results

- Meeting 12-month target has been a challenge
- Screening is faster & cheaper, but could be improved
- Toolkit raises the standard of work, but also has added complexity & time to the process
- Bonus not a big motivator for owners
- Fast track not so fast!

Program Challenges

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- **Quality of Documentation and Backup**
- Provider Qualification
- Persistence

Quality of Documentation/Backup

- Perceived challenges
 - Balancing M&V / budget
 - Increased level of scrutiny
 - No standardized tools
- Approach taken
 - Enhanced guidelines
 - Provider orientations
 - Multi-stage review process



Quality of Documentation/Backup

- Improved Guidelines
 - Better documentation of baseline
 - RMS power consumption measurements
 - Part-load operation reflected in calculations
 - Documenting equipment lists
 - One-line system diagrams
 - Added sampling guidelines
 - Dual levels of rigor
 - Documentation of assumptions
 - Definition and emphasis of “peak demand”

Quality of Documentation/Backup

- Results

- Significant QA issues identified
- Improved confidence level in reported savings
- Industry push-back due to tight budgets
- Long review cycle time
- Grocery RCx discontinued



Program Challenges

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- **Provider Qualification**
- Persistence

Provider Qualification

- Perceived challenges
 - Capacity to take on high # of CA projects
 - Ability to meet newly increased guidelines
- Approach taken
 - Orientations for providers
 - Unlimited provider quantity
 - Owner selects provider



Provider Qualification

- Results
 - Inconsistencies between providers increased review cycle time
 - Inconsistencies in the level and quality of investigation by providers
 - Learning curve to meet complex guidelines
 - Delays in owner's selection of provider
 - High # of VFD installation measures
(less cost-effective use of investigation fee)

Program Challenges

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Measure Persistence

- Perceived challenges
 - Ease of ‘defeating’ measures
 - Operator awareness
- Approach taken
 - Energy Star[©] Benchmark
 - Comprehensive RCx Final Report
 - Provider training for building operators
 - Provider works with owner to update building documentation

Measure Persistence

- Results – Benchmarking
 - Time delays in getting required data
 - Incomplete billing data
 - Limited space types in Portfolio Manager
 - Interface not easy to use

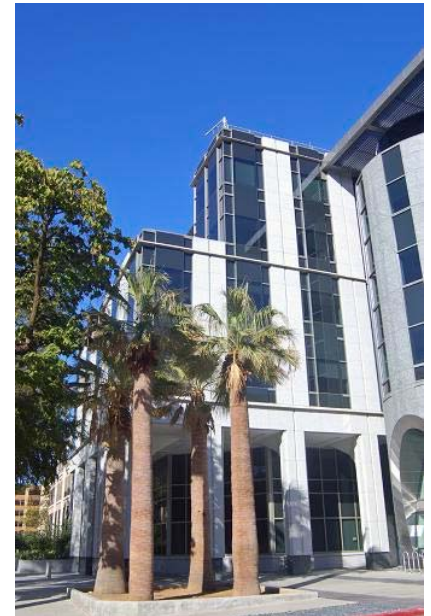
Conclusions

- **Successes**
 - Increased market recognition of RCx
 - ‘Thin end of the wedge’ with commercial real estate and hospitality markets
 - High # of committed projects



Conclusions

- Successes (continued)
 - Unified approach to implementing RCx
 - Improved level of guidelines
 - Improved alignment of providers' documentation with program/utility/M&V expectations



Thank You! Any Questions?

Steven Long

Southern California Edison

Steven.Long@sce.com

(626) 633 3108

Eliot Crowe

Portland Energy Conservation, Inc.

ECrowe@peci.org

(503) 961 6123