

# County of San Diego Retrocommissioning

SEEC Webinar

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## Why County of San Diego decided to undertake RCx?

- **Reduce operating costs, improve the health and comfort of the building occupants, increase Facilities staff knowledge and, possibly, extend equipment life.**
- **The Central Plant Monitoring and Reporting Program was chosen because our SDG&E Local Government Partnership provided funding for it**
- **PECI San Diego RCx Program was chosen because we could pay for almost all of the portions of the project (project management staff labor, facilities operations staff labor and installation) with outside funding, Partnership or SDG&E On-Bill Financing**

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## PECI RCx Program

### Parameters:

- Facility over >100 KSF
- Screening Assessment – Expect 5% Reduction
- Agreement
  - Free Engineering Assessment (reimburse if you don't implement 1 year payback project)
  - < 1 Year Simple Payback Required
  - > 1 Year Payback up to 8 years incentivized Optional
  - Can use OBF for all approved measures
- M&V, paid by PECI, is required

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## RCx Projects

### PECI Projects

- Mills Building (8 measures)
  - Chiller Plant optimize, HHW reset, data room server, electric water heating, VAV box scheduling
- North County Regional Center (3 measures)
  - Detention Areas HVAC modulation, CHW/HHW valve control, Chiller Plant sequencing
- Health Services Complex (9 measures)
  - Central Plant Issues, Lab operation unoccupied, HHW optimization, refrigeration fan upgrade
- East Mesa Detention Facility (5 measures, 3 outside RCx)
  - HHW variable flow, AHU modulation, Packaged HVAC control, CO2 monitoring, Scheduling, pony boiler, steam traps, blowdown, refrigeration fan upgrade

### Central Plants

- Largest Central Plants under same Vendor
  - kW/ton, tonnage charted with weather, etc.

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## Project Summary

Project	Total Project Cost	Electricity Usage Reduction (Annual)	Natural Gas Usage Reduction (Annual)	Utility Savings (Annual)	Simple Payback
Mills Building San Diego (actual)	\$59,162	324,125	0	\$33,221	1.6
Health Services Complex San Diego	\$195,022	395,339	8,673	\$38,737	4.3
North County Regional Center Vista	\$143,113	449,890	21,512	\$69,547	1.4
East Mesa Detention Facility Otay Mesa	\$635,503	702,688	24,456	\$87,069	6.4

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## How we made it possible



- **Retrocommissioning was identified in the Strategic Energy Plan approved by the Board of Supervisors**
- **Entering into the PECO RCx program was part of a Board Letter (Board of Supervisors vote)**
- **On-Bill Financing was a separate Board Letter that mentioned retrocommissioning as one type of project that would use OBF**
- **Energy Job Order Contracting Contractors with required knowledge of utility energy programs were engaged to implement the work**

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## Challenges

- Internal education of how the program works
- Purchasing and Contracting review timeframe
- OBF preparation and approval timeframe
- Legal issues that needed to be resolved
- Project Management schedule not aggressive enough
- Energy Management Program not in Facility Operations or Project Management
- Bridging of a PUC cycle – contractual issues
- Engineering budget vs. contractor proposal
- Equipment failure at late stages required a Plan B
- No dedicated staff for commissioning or retrocommissioning
- M&V at a facility with operational changes

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## Smart Building Initiative

Goal is to integrate information technology with facility management best practices to increase energy and water usage efficiency

### Objectives

- Apply IT to existing building systems
- Converge with facility management best practices
- Provide a means to monitor and control real-time energy and water consumption data
- Provide system access to appropriate staff

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## Project Plan

Create a baseline for electricity, natural gas and water consumption by using historical data

Set reduction targets:

- Electricity: 10% - 20%
- Natural gas: 6% -12%
- Water: 2% - 6%



Compare usage to the baseline

Review building performance monthly

Analyze cumulative data at the end of the first year

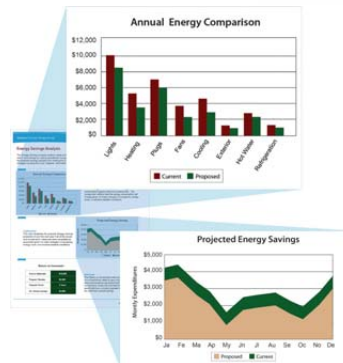
- Outcomes may justify a second project
- More buildings could be retrofitted and added to the network

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## Thank You

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