Retrocommissioning Program 2019

Training for Retrocommissioning Service providers

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Purpose of Training

This training is to guide RCx Service Providers (RSPs) through the 2019 offering.

In order to renew eligibility as an RSP, one member of the company must receive this training via webinar.

All members of the company utilizing the RCx offering are encouraged to attend.
Agenda

- Contact Information
- Incentive Offering
- Program Expectations
Delivery of RCx Offering

- RCx offering is available through multiple program implementers:
  - Agriculture, Schools, and Government Program (AgSG)
  - Business Incentives Program (BIP)
  - Large Energy Users Program (LEUP)
- Not available for multifamily properties.
- Once a potential customer is identified, contact the appropriate program representative:
  - AgSG: Melissa Rickert, Melissa.rickert@focusonenergy.com, 715-720-2123
  - BIP: Leah Maggio, leah.maggio@focusonenergy.com, 262-240-0672 x 4136
  - LEUP: Alex Dodd, alex.dodd@focusonenergy.com, 608-819-9032
- For general questions and RSP training, contact Alex Dodd
Incentive overview

- **1\textsuperscript{st} Payment** - $0.02 / Estimated kWh + $0.30 / Estimated Therm, capped at 50% of audit cost.

- **2\textsuperscript{nd} Payment** - Remaining funds necessary to bring total 1\textsuperscript{st} + 2\textsuperscript{nd} payments to $0.05 / verified kWh and $0.70 / verified Therm, capped at 75% of combined audit and implementation costs.

- RCx offering pays incentives based on implemented and verified savings. After the audit, a 1\textsuperscript{st} payment is provided on good faith, with the understanding that implementation will occur.
  - If energy savings aren’t achieved to the necessary level to justify the 1\textsuperscript{st} payment, the appropriate portion will need to be refunded.
Eligibility for RCx Incentives

• Customer Eligibility
  ― Facilities must be older than 5 years.
  ― Facilities must exceed 50,000 sq. ft., exceptions for campuses are considered on a case-by-case basis.

• Measure Eligibility
  ― Only RCx-type measures are eligible for the RCx incentive offering*
  ― Retrofit measures will be offered appropriate prescriptive and custom incentives for implementation**.

*An RCx-Type measure either improves the functionality of existing equipment or replaces non-functional controls equipment in-kind. Other retrofit projects with small capital investments and a payback of <1.5 years will be reviewed for RCx incentive eligibility on a case by case basis.

**The investigation of retrofit measures may be included in the scope of the RCx audit and attributed toward the RCx audit cost.

Maximum incentive for the Large Energy Users Program is $300,000/project and $500,000/customer per calendar year. The Agriculture, Schools and Government Program and Business Incentive Program is limited to $200,000/project and $400,000/customer per calendar year.
Study Incentives

- Project Assessment Incentive (PAI)
- Retrocomissioning (RCx)

Implementation Incentives

- Retrocomissioning* (RCx) - over 50,000 sq. ft.
- Express Building Tune-up* (EBTU) - <100,000 sq. ft
- Prescriptive – See measure list
- Custom – pre-approval required. Package must be over 1.5 yr payback

*Must use qualified service provider
Qualify Customer

- Prepare Audit Proposal and Share with the Customer.
- Complete and Submit Enrollment Application.
- Receive approval of enrollment by Focus on Energy
- Enrollment for the RCx Offering reserves the site’s eligibility for 6 months.
- After 6 months, the audit must be complete or the customer must re-enroll in the offering, if available.
Audit Phase Details

- Hold a Kick-off meeting to finalize schedule and scope.
- Complete audit, quantify savings opportunities, select measures for implementation.
- Submit calculation workbook for pre-approval.
  - Do not implement measures until after pre-approval.
- Upon pre-approval, an incentive agreement will be sent to the customer for signature. Once signed, the 1st payment will be processed.
- Implementation must be complete within 6 months from pre-approval.
Implementation Phase Details

- Implement measures.
- Perform appropriate M&V.
- Re-submit calculation workbook containing M&V data and any necessary calculation modifications.
- 2nd payment will be in the amount necessary for 1st + 2nd payments to sum to $0.05/verified kWh + $0.70/verified Therm, up to 75% of combined audit and implementation costs.
• Schedule/control AHUs/RTUs, Exhaust, and Lighting
• Reduce Unnecessary Ventilation
• Adjust static pressure setpoint
• Optimize Economizer
• Adjust minimum airflow setpoints of VAV boxes
• Schedule VAV boxes to minimum airflow when unoccupied
• Program to “Reset” setpoints with Outside Air Temperature:
  • Static Pressure
  • Supply Air Temperature
  • Chilled/Hot Water Supply Temperature
  • Pump Pressure
  • Condenser Water Temperature
  • Discharge/Suction Pressure (Refrigeration)
• Eliminate overcooling/heating (for example, uncontrolled baseboard heating)
• Dual Maximum VAV Box Logic
• Reduce throttling by triple duty valves where VFDs are present
• Lower Steam Pressure
• Chiller staging
• Adjust Chiller primary flow and AHU coil pump flows to optimize DELTAT
• Morning pre-cooling and summer demand management (without air ventilation!)
• Datacenter Optimization
Workbooks

• The project workbook is an Excel document that must have the following information in order to be reviewed:
  - Customer and service provider general information
  - Energy saving calculations
  - Equipment and trending data
  - Proposed verification procedures
  - Implementation cost estimates
  - Audit invoices
  - Utility data or cost estimates
  - ENERGY STAR Portfolio Manager reports (optional)

• Workbook template is provided by Focus on Energy.

• A workbook is submitted twice, before and after implementation. The 2nd workbook is a revision of the 1st.
All yellow cells must be completed to initiate a review

Tabs in the workbook include:

- Instructions
- General Information (includes yellow cells)
- Project Description (includes yellow cells)
- Verification Plan (includes yellow cells)
- Measure Summary (includes yellow cells)
- Project Costs (includes yellow cells)
- Grant Calc
- Utility Data (includes yellow cells)
- Calc Guidance
- Energy Star (optional)
- M&V Guide
- M1 legacy tab (optional)
Measurement & Verification

- Measured data will be expected in all possible instances to support savings calculations.
- Measured data must be sufficient in frequency and duration to capture typical operating conditions.
- The same calculation method must be used to calculate energy consumption before and after project installation.
- Assumptions upon assumptions are not allowed (e.g. using square footage to calculate air flow and then using air flow to calculate horsepower).
Program tools and documents

- RCx Program Enrollment Application
- Workbook Template
- http://www.focusonenergy.com/RCx
Questions?

• Program-specific questions:
  • AgSG: Melissa Rickert, Melissa.rickert@focusonenergy.com, 715-720-2123
  • BIP: Leah Maggio, leah.maggio@focusonenergy.com, 262-240-0672 x 4136
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Bonus Slides: Other Offerings for related measures
Project Assessment Incentive (PAI)

- RCx PAI studies are eligible. Customers then eligible for custom/low-payback incentives.
- Up to $7,500 but typically limited by the 20% rule.
- We have also combined an HVAC retrofit study with immediate on-site RCx implementation.
  - Half of small hospital is constant volume pneumatic 24/7 over offices
    - studied payback of upgrading to VAV/DDC
  - Other half is already VAV/DDC but still operates 24/7 with high static pressure
    - paid controls guy for one day of simple RCx
Express Building Tune-Up Measures

- Chiller Plant Setpoint Adjustment
- Hot Water Supply Reset
- Outside Air Intake Optimization
- Economizer Optimization
- VFD Fan/Pump Motor Control Restoration
- Chilled/Hot Water Valve Repair
- Supply Air Temperature Reset
- Scheduling
- HVAC Boiler/Chiller Tune-up

***Reminder: EBTU is only for under 100,000 sq. ft.
HVAC-Related Prescriptive Incentives

- Fan/Pump VFDs
- Install Economizer on RTU
- Advanced RTU Controllers
- Kitchen Hood Controls
- Demand Controlled Ventilation
- ECM/VFD Pump for Hot Water Supply
Other HVAC-related Retrofit Opportunities

- Reduce ventilation
- Convert from constant volume to VAV AHU
- Convert inlet vane to VFD
- Convert AHU to ECM fan arrays
- Replace DX cooling with chiller tie-in
- Install dampers or supplemental cooling in order to isolate areas for better scheduling
- Chiller VFD
- Heat Recovery Chiller
- ERV or other Exhaust Heat Recovery