



CUSTOMER CARE AND ENERGY SOLUTIONS

EXISTING BUILDING COMMISSIONING PROGRAM REQUIREMENTS

The Existing Building Commissioning (EBCx) program provides incentives for retro-commissioning (RCx) or monitoring-based commissioning (MBCx) of your building's existing systems. The commissioning process optimizes building systems to improve occupant comfort and energy efficiency. The EBCx program has three distinct program phases: Assessment, Commissioning, and Performance verification.

Program Goals:

- Optimization of existing facility systems to improve operations and maximize efficiency, not major upgrades of equipment.
- Maintain long-term operational improvements and ensure persistence of savings by providing training and tools for operations staff, occupants, and owners.

This document provides details on eligibility for program participation. It also details deliverables and documentation submittals required for program participants to receive incentives. It does not serve as a commissioning process guide. Information on building commissioning processes and industry-accepted best practices is available from several trade associations and public – private research collaboratives.

Some of these resources include:

[Building Commissioning Association Existing Building Commissioning Best Practices](#)

[Building Commissioning Association Ongoing Building Commissioning Best Practices](#)

[US Dept. of Energy Smart Energy Analytics Campaign Toolkit](#)

[Smart Energy Analytics Campaign Additional Resources](#)

Table of Contents

| | |
|--|----|
| EBCx Program Information: | 3 |
| EBCx Eligibility Requirements: | 4 |
| Qualification Criteria: | 4 |
| Commissioning Provider Experience Requirements..... | 5 |
| Participation Deliverables: | 6 |
| Application Instructions | 6 |
| Assessment Incentive Deliverables (RCx & MBCx) | 7 |
| Monitoring-Based Commissioning (MBCx), Path B | 8 |
| FDD Software Application Requirements | 8 |
| Commissioning Incentive Deliverables (MBCx) | 8 |
| Cx Incentive Deliverables, Actions and Submittals Required (MBCx) | 10 |
| Performance Incentive Deliverables (MBCx) | 10 |
| Performance Report (MBCx) | 11 |
| Appendix B: MBCx Documentation Requirements: | 11 |
| Provider Experience Submittals (MBCx) | 11 |
| Monitoring Based Commissioning Documentation..... | 12 |
| MBCx Table of Deliverables..... | 12 |
| Facility Guide/Systems Manual Requirements (MBCx)..... | 13 |
| Performance Incentive Documentation (MBCx) | 13 |
| Performance Documentation - PROVIDED BY OWNER (MBCx) | 13 |
| Retro-Commissioning (RCx), Path A..... | 14 |
| Commissioning Incentive Deliverables (RCx) | 14 |
| Cx Incentive Deliverables, Actions and Submittals Required (RCx) | 14 |
| Performance Incentive Deliverables (RCx) | 15 |
| Performance Report (RCx)..... | 15 |
| Appendix A: RCx Documentation Requirements:..... | 16 |
| Provider Experience Submittals (RCx) | 16 |
| Retro-Commissioning Documentation (RCx) | 16 |
| RCx Investigation Report Table of Deliverables (Update of Assessment Report) | 16 |
| RCx Final Commissioning Report (Update of Investigation Report) | 17 |
| Facility Guide/Systems Manual (RCx)..... | 18 |
| Performance Incentive Documentation (RCx)..... | 18 |

EBCx Program Information:

The EBCx program has two different paths.

Retro-Commissioning (RCx), Path A, is an in-depth but one-time process that creates optimal system performance through an investigation and analysis of building system operations lead by a commissioning provider. This process identifies opportunities for efficiency improvements to building operations. Once implemented, these improvements are maintained through training and documentation of efficient facility operating procedures.

Monitoring-Based Commissioning (MBCx), Path B, leverages energy management information system (EMIS) technology and Fault Detection and Diagnostic (FDD) software to continuously commission the building automation system's control functions. A commissioning provider uses FDD software to identify opportunities ("faults") for more efficient system operations. Once faults are corrected the FDD software continues to monitor system operations to sustain efficient operations. MBCx is a form of "ongoing commissioning" and is partially compliant with an alternative building tune-up compliance process defined by Seattle's Office of Sustainability and the Environment (OSE)¹.

Regardless of the path selected, the EBCx program has up to three milestone incentive payments. Completion of the assessment and commissioning phases is typically completed within 16 months, but completion of all phases may extend up to 36 months.

EBCx Program Incentive Table

| EBCx Program Phase | Typical Duration | Incentive |
|---|------------------|---|
| Application, initial eligibility screen | 1 – 2 months | N/A |
| Assessment Phase | 1 – 3 months | \$4,000 per building (up to 100% of assessment cost) |
| Seattle City Light's decision based on assessment results: Offer Commissioning & Performance incentives? If yes: | | |
| Commissioning Phase <i>Through completion of "Hand-off"/ training</i> | 4 – 12 months | \$0.25/ft ² conditioned space (Up to 75% of Commissioning Provider's costs) |
| Performance Phase | 12 - 18 months | \$0.05/kWh for all electric savings up to 15% (if savings ≥ 7% performance threshold). (Incentive capped at a maximum of 100% of |

¹ Path B (MBCx) is not fully compliant with the [Seattle Building Tune-Up alternative compliance process for ongoing commissioning](#). If participants pick path B, the owner is responsible for full compliance with OSE's alternative compliance process to fulfill the building's tune-up requirement via an alternative compliance pathway.

| | | |
|--|--|---|
| | | <i>commissioning costs and implementation costs).</i> |
|--|--|---|

This program initially provides incentives for assessing if an existing building commissioning process is a good opportunity to improve the energy efficiency of the participant's building. After completion of the assessment phase, if ample savings potential exists in the facility, Seattle City Light will offer additional incentives for implementation of commissioning activities, and for payment for energy savings if the customer exceeds 7% electricity savings compared to their baseline consumption.

EBCx Eligibility Requirements:

- Seattle City Light electricity customer
- Participating buildings must have at least 50,000 ft² conditioned space²
- 75% or more of building space is occupied
- Building is equipped with a Direct Digital Control (DDC) building automation system (BAS) capable of trending control points
- Building(s) have a dedicated facility operations staff
- MBCx (Path B) participants must designate a member of the facility staff to address and resolve operational issues identified by the FDD software on an ongoing basis.

Qualification Criteria:

Eligible buildings are screened by an Energy Management Analyst (EMA) to determine if they qualify for assessment and commissioning incentives based on the potential for electricity savings.

Factors used to determine if a building qualifies include:

- Building owner and operations staff are committed to a sustained effort to optimize operations and efficiency.
- Building has a high Energy Use Index (EUI); or demonstrated potential for annual electric energy savings >7%.
- Energy savings will be achieved primarily through improvements to operation of existing equipment.
- Building controls and mechanical systems, do not need replacement in the next 3 to 5 years.
- Facility has not been commissioned within the past 5 years.
- Mechanical and controls systems are in relatively good condition (i.e., the best solution is not the replacement of primary components of building or control systems).
- Annual energy use in the building can be statistically correlated with weather conditions, occupancy, or other significant variables to allow for use of whole-building regression analysis to measure baseline consumption, determine energy savings, and calculate performance incentives.

² The 50,000 square feet may be made up of multiple buildings. Ideally these are either controlled by the same BAS system, served by the same central plant, operated by the same service provider/operator, or use the same set of sequence of operations. Case-by-case exceptions may be made.

- Building operations are expected to remain consistent during the duration of the EBCx program.

The qualification process determines if eligible buildings are good candidates for a successful commissioning process. Screening eligible buildings helps the utility evaluate if the building has a reasonable expectation of achieving at least 7% annual electricity savings and whether savings will persist. Commissioning is typically not capital-intensive. However, it does require a significant commitment of personnel resources, and investment in the services of an experienced third-party commissioning provider to be successful.

Facilities that qualify can receive an incentive of up to \$4,000 (per building) for an initial EBCx building assessment. The purpose of the EBCx building assessment is to examine the building's operations, determine if retro-commissioning (RCx) or monitoring-based commissioning (MBCx) will improve efficiency, estimate potential energy savings, and develop an initial commissioning plan.

The commissioning (Cx) plan will identify potential energy efficiency improvements and shall include high-level estimates of potential energy savings. The Cx plan must also include a rough estimate of implementation costs. The Cx plan is subject to review and approval from Seattle City Light to determine if incentives may be offered for the commissioning and performance phases. The review will also confirm the commitment required by each party for the commissioning process if Seattle City Light offered commissioning incentives.

Seattle City Light retains sole discretion to determine if the assessment report and deliverables have been met and to authorize payment of the assessment incentive.

Buildings that do not qualify for participation in the EBCx program may be eligible for other Seattle City Light energy conservation incentive offerings such as simple rebates, custom retrofit incentives, or the Deep Retrofit Pay-For-Performance program.

Commissioning Provider Experience Requirements

Seattle City Light has adopted an EBCx incentive program framework developed by Puget Sound Energy (PSE).³ Customers receiving EBCx incentives only from Seattle City Light may use any commissioning (Cx) provider that meets Seattle City Light Cx Provider Experience Requirements detailed below. Customers pursuing EBCx incentives from both PSE and Seattle City Light may use a Cx provider that meets PSE's provider requirements. The Cx provider is an individual and not a company. Individuals that do not meet these requirements may still participate in the project when working under the direction of a qualified Cx provider.

Seattle City Light's Cx Provider Experience Requirements

1. Commissioning providers must meet the qualifications of a Tune-Up Specialist as defined by the Seattle Office of Sustainability & Environment Directors Rule 2016-01.

³ Customers should note however, that PSE has a different program for Monitoring Based Commissioning.

2. Providers must have current technical knowledge and extensive recent hands-on field experience equal to that of a Professional Engineer regarding:
 - a. Existing building commissioning including functional testing of building systems, HVAC system diagnostics, BAS trend analysis, energy calculations, and implementation of energy efficiency improvements
 - b. Building system performance with a focus on optimization of building automation control systems
 - c. Troubleshooting common installation, maintenance, and operational pitfalls for building systems
3. Primary Commissioning Provider for at least two (2) other commissioning projects of a similar nature.

Seattle City Light recommends that customers solicit bids from several commissioning providers and check references. Seattle City Light makes no recommendations, guarantees, or warranties for any commissioning provider. Reports and program documentation provided for review to Seattle City Light is subject to approval and evaluation for validation of energy savings.

Participation Deliverables:

The following sections outline the steps and details required to apply for and receive incentives for participation in each phase of Seattle City Light's Existing Building Commissioning (EBCx) incentive program.

Application Instructions

1. Submit Seattle City Light Application form
 - a. Indicate which path you prefer:
 - i. **Path A**, traditional retro-commissioning (RCx)
 - ii. **Path B**, monitoring-based commissioning (MBCx)
 - b. Indicate if you intend to pursue incentives for natural gas savings and want Seattle City Light to coordinate with PSE (Path A, traditional retro-commissioning only).
 - c. Complete data sharing agreement if you wish to allow Seattle City Light to share consumption data with designated parties for the duration of the EBCx project.
 - d. Complete the pre-screen facility survey to document facility characteristics, identify the building's mechanical and electrical equipment, provide basic operational schemes, and detail known issues with building operations.
2. Submit qualifications for your selected commissioning provider.
3. **Path B, MBCx only** - submit proposal for Fault Detection & Diagnostics software deployment.

Assessment Incentive Deliverables (RCx & MBCx)

The commissioning (Cx) provider conducts building walk-through and simple energy use analysis to determine if significant operational savings are likely. Once assessment report and deliverables have been accepted by the building owner and approved by Seattle City Light, the assessment incentive may be issued. Documentation required for payment of the assessment incentive includes:

1. Assessment report and deliverables provided to utility (see Documentation section below)
2. Assessment invoice(s) documenting the cost for the Cx provider
3. Owner's acknowledgment of final assessment incentive amount.

ASSESSMENT DELIVERABLES- 100% of costs up to \$4,000 per building

Assessment Report:

- Executive summary
- Facility Description
- Analysis of energy use for previous 24 months (electricity, natural gas, steam, etc.)
 - Include energy meters for project area (boundary) and areas served by each meter
- How will commissioning process result in annual electric savings $\geq 7\%$?
- Cx Provider's Recommendation:
 - Proceed with Commissioning (RCx or MBCx) process, Or
 - Pursue other efficiency strategies (controls, equipment upgrades)
- If recommendation is to proceed with RCx/ MBCx include:
 - Preliminary Commissioning (Cx) Plan
 - Cx schedule
 - Cx proposal
 - **Path B, MBCx only** – specify FDD software application, confirm its compatibility with BAS

Monitoring-Based Commissioning (MBCx), Path B

FDD Software Application Requirements

MBCx Path B Participants in the monitoring-based commissioning path must deploy a Fault Detection & Diagnostic (FDD) software application with the following functionality and reporting capabilities. Seattle City Light makes no warranties or representations of the quality, compatibility, security, or performance of a participant's selected FDD software. FDD Applications must be able to:

- Continuously monitor systems controlled by the Building Automation System (BAS)
- Apply algorithms and rules to identify operational inefficiencies or "faults"
- Recommend corrective action to resolve faults
- Maintain a record of identified and corrected faults
- Provide exportable reports (*.CSV or *.xlsx format) that summarize corrected faults.

The FDD Application must be able to identify and recommend corrective actions for the most common operational issues:

- Equipment scheduling issues (too little, too long, wrong time, too early, etc.)
- Simultaneous heating and cooling
- BAS sensor errors/faults
- Economizer and ventilation issues
- Control-related pressurization issues
- Space cooling/heating issues (overshooting, undershooting, etc.)

It is recommended, but not required, that participants deploy FDD applications that also monitor domestic hot water heating (DHW) and lighting systems. The building owner must actively and continuously commission the building's: heating, cooling, ventilation, domestic hot water, and lighting systems to satisfy the [Seattle Building Tune-Up Ongoing Commissioning Alternative compliance option](#).

Building owners are responsible for confirming if their Path B MBCx deployment will comply with the ongoing commissioning alternative compliance option for a required building tune-up. Additional monitoring may be required by the Seattle Office of Sustainability and Environment (OSE) to satisfy the requirements of the Alternative Compliance Option. Contact building Tune-Up staff at OSE: buildingtuneups@seattle.gov for details.

Commissioning Incentive Deliverables (MBCx)

MBCx Incentive and Performance Deliverables are only required if Participant has been given a formal "Notice of Eligibility" for the MBCx Phase from Seattle City Light. If eligible, notification will be provided when the assessment incentive payment is made. The eligibility notice will include an estimate of the commissioning and performance incentive funding amounts the participant is eligible to receive for completion of deliverables and achieved electricity savings. **A Notice of Eligibility confirms if the**

building(s) have qualified for commissioning incentives from Seattle City Light after completion of the Assessment Phase.

Once the final report and all deliverables have been accepted by the building owner and approved by Seattle City Light, the MBCx commissioning phase incentive may be issued. Documentation required for payment of the commissioning incentive includes:

1. Incentive deliverables provided to utility, summary table below (detailed documentation requirements in Appendix B).
2. Owner's acceptance of deliverables
3. All Cx invoices and owner's repair costs

Cx Incentive Deliverables, Actions and Submittals Required (MBCx)

Actions and submittals required to receive Cx phase incentive of up to \$0.25/ft² conditioned space.

**Maximum of 75% of commissioning provider and MBCx application costs*

Documentation of MBCx Implementation

- Hold commissioning project kickoff meeting
 - Attended by owner's representative, commissioning provider, and City Light EMA
 - Discuss owner's requirements, schedule, goals, confirm deliverables for incentives

Templates will be supplied to participant to support documentation requirements. Submittal of these deliverables is required to document completion of the commissioning implementation phase of Path B (MBCx).

Participants shall submit the following documentation:

- Finalized Monitoring Based Cx Plan
 - Project scope (building(s), systems)
 - Project team
 - Project schedule
 - Current Facility (Owner's) Requirements
 - Monitoring Action Plan
 - EMIS/FDD application specification
- Document configuration of EMIS/FDD application
 - Calibration of critical sensors
 - Validate quality of BAS data supplied to FDD application
 - Configure fault reporting and tracking
- Utilize software to identify and correct faults
 - Submit reports generated by MBCx process showing issues identified and resolved for at least 3 months after configuration is completed.
- Facility Guide, Staff participation, and Cost Documentation
 - Facility Guide/ Systems Manual
 - Customer staff participation and training summary
 - Implementation Cost Tracking Report

Performance Incentive Deliverables (MBCx)

If weather and occupancy adjusted electricity savings are $\geq 7\%$, the performance incentive may be issued.

The participant has 18 months from the date Seattle City Light approves payment of the commissioning phase incentive to demonstrate that annual electricity savings $\geq 7\%$ has been achieved.

Cx provider invoices and owner's repair costs must be submitted to verify final owner costs for the EBCx project. Documentation required for payment of the performance incentive includes:

1. Final report and deliverables provided to utility (see Documentation section below)
2. Owner's acceptance of deliverables

Performance Report (MBCx)

MBCx- Monitoring Based Commissioning (Path B)

PERFORMANCE INCENTIVE – \$0.05 per kWh on all electric savings up to 15% maximum (if savings $\geq 7\%$ performance threshold). Funding cannot exceed 100% of total commissioning project costs.

Performance Report

1. Quarterly (4) Reports (with sample of one week of data per report):
 - a. Identification of priority issues and faults corrected using EMIS/ FDD
 - b. Investigation of root cause for prioritized issues
 - c. Identification and implementation of corrective actions
2. Non-Cx (occupancy, equipment upgrades) Energy Use Changes Tracking Form
3. 24 months of energy use data (SCL will supply electric consumption data)
4. Documentation of monitoring-based commissioning project costs:
 - a. Commissioning Provider(s) costs during performance year
 - b. MBCx software costs
 - c. Customer Implementation costs
 - i. Building system upgrade costs
 - ii. Equipment repairs/ upgrades
 - iii. Simple repairs/adjustments

Appendix B: MBCx Documentation Requirements:

Required documents and forms are available from your Energy Management Analyst or online via a [SharePoint site](#). Access to the site will be provided to you by the EMA.

Note the EMA will grant SharePoint access to email addresses supplied by the provider or participant. The SharePoint application requires that any email address used is linked to a Microsoft user account.

Provider Experience Submittals (MBCx)

The customer's commissioning provider(s) shall submit the following documentation to Seattle City Light prior to execution of a participation agreement to document that the provider meets or exceeds provider experience requirements.

1. Submit a copy of their resume(s) detailing relevant professional experience and a current credential qualifying them as a Seattle Building Tune-Up Specialist.

2. Provide references from customers or other utility commissioning programs from two (2) commissioning projects similar to the customer's proposed project. Specifically provide samples or documentation of:
 - a. Existing Building Commissioning Plans
 - b. Recommended Energy Efficiency Improvements (EEl)s
 - c. Final Commissioning Reports
 - d. Facility or Systems Manual
 - e. Provider's FDD software implementation experience (MBCx, Path B only)

Monitoring Based Commissioning Documentation

Detailed list of submittals and MBCx documentation required by Seattle City Light for payment of the commissioning incentive (up to \$0.25/ft²).

MBCx Table of Deliverables

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|-----|--|--|--------------------|--|
| 1. | Executive Summary (update from assessment) | MBCx Deliverables Template | No | |
| 2. | Project Scope | MBCx Deliverables Template | No | Description of facility Update from CX plan - systems, occupancy, use |
| 3. | Project Team | MBCx Deliverables Template | No | ID names, titles, organization, roles |
| 4. | Project Schedule | MBCx Deliverables Template | No | ID Activity, responsible parties, due dates |
| 5. | Current Facility Requirements (CFR)* *Often called "Owner's Operating Requirements" | CACx Owners Operating Requirements document | No | MBCx Deliverables template outlines typical CFR contents. |
| 6. | Monitoring Action Plan | MBCx Deliverables Template | No | ID Actions, Responsible Parties, due dates |
| 7. | Calibration of critical sensors | Sensor Calibration Worksheet | No | Calibrate sensors that drive primary building systems |
| 8. | Dashboard & user interface configuration | | No | Provide Screenshot(s) |
| 9. | FDD Analytics configuration | MBCx Deliverables Template | No | Provide list of critical faults to be identified |
| 10. | Issues log and corrective actions taken | | No | Reports for three months (At least weekly detail level) |
| 11. | Training Plan | MBCx Deliverables Template | | |
| 12. | Training staff participation Documentation | Training & O&M Staff Time Documentation | Yes | Informal training and staff time provided by owner |
| 13. | Implementation Cost | Customer Implementation Cost Tracking Report | Yes | Provided by owner along with invoices |

Facility Guide/Systems Manual Requirements (MBCx)

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|----|--|--------------------|--------------------|---|
| 1. | Index | | | |
| 2. | How Systems Work (efficiently) | | | Descriptions of systems/ sequences, photos, diagram, table |
| 3. | Current Facility Requirements (update) | | | Operating hours, set points, etc. |
| 4. | EMIS/FDD Specs and Requirements | | | Instructions details required for ongoing use of EMIS/ FDD applications |
| 5. | Ongoing Training Plan | | | |
| 6. | Energy Tracking & Benchmarks (Optional) | | | KPI's or benchmarks used to track progress to operating parameters/ goals |
| 7. | Other content to keep building efficient | | | Signage, default Sequence of Operations, etc. |

Performance Incentive Documentation (MBCx)

Up to 18 Months from completion of commissioning phase to demonstrate annual electric savings $\geq 7\%$.

Performance Documentation - PROVIDED BY OWNER (MBCx)

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|----|-------------------------------------|--|--------------------|--|
| 1. | Performance Checks (update) | Performance Persistence Checks | No | Generation of priority Work Orders created and resolved by O&M Staff based on FDD, at least weekly. |
| 2. | Performance Documentation | | | Trends based on whole building, system, or submeters |
| 3. | Non -CX Energy Use Changes (update) | Facility Change Tracking Form (Persistence Checks) | Yes | Changes during performance period (changes that affect energy use significantly but were not part of CX) |
| 4. | Other non-electric energy data | | | Provide most recent 24 months of consumption data for all non-electric energy sources |

Retro-Commissioning (RCx), Path A

Commissioning Incentive Deliverables (RCx)

RCx Incentive and Performance Deliverables are only required if Participant has been given a formal "Notice of Eligibility" for the RCx Phase from Seattle City Light. If eligible, notification will be provided when the assessment incentive payment is made. The eligibility notice will include an estimate of the Commissioning and performance incentive funding amounts the participant is eligible to receive for completion of deliverables and achieved electricity savings. **A Notice of Eligibility confirms if the building(s) have qualified for commissioning incentives from Seattle City Light after completion of the Assessment Phase.**

Once the final report and all deliverables have been accepted by the building owner and approved by Seattle City Light, the RCx incentive may be issued. Documentation required for payment of the commissioning incentive includes:

1. Commissioning Incentive deliverables provided to utility, summary table below (detailed documentation requirements in Appendix A).
2. Owner's acceptance of deliverables
3. All Cx provider invoices and owner's costs for commissioning-related repairs.

Cx Incentive Deliverables, Actions and Submittals Required (RCx)

Actions and submittals required to receive Cx phase incentive of up to \$0.25/ft² conditioned space.

**Maximum of 75% of commissioning provider and MBCx application costs*

Investigation Phase and Report

- Hold Commissioning Project Kickoff meeting
 - Attended by owner's representative, commissioning provider, and City Light EMA
 - Discuss owner's requirements, schedule, goals, confirm deliverables for incentives
- Updated Cx Plan
- Updated Cx Schedule
- Current Facility (Owner's) Requirements
- Investigation Report, including recommendations:
 - Identify energy Efficiency Improvements (EELs) and estimated savings
 - Training requirements
 - Facility Guide outline

Recommendations and Implementation Phases

Customer is expected to implement EELs:

- Implement all EELs with an estimated simple payback of <2 years
- Customer shall expect an investment after incentives of up to \$0.10/ft²
- Provide cost documentation via Implementation Cost Tracking Report

Verification Phase

Cx Provider certifies verification of improvements

- Final EEI savings and calculations, if required (only for EEIs w/ savings $\geq 300,000$ kWh)

Facility Guide and Training Phase Documentation

- Facility Guide/ Systems Manual
- Training and O&M time
- Ongoing Cx Maintenance Plan – “Persistence Checks”

Final Report

- Summary of EEIs completed
- Final recommendations
- Final savings and benefits of the process
- Documentation of the Cx work

Performance Incentive Deliverables (RCx)

If weather and occupancy adjusted electricity savings are $\geq 7\%$, the performance incentive may be issued. The participant has 18 months from the date Seattle City Light approves payment of the commissioning phase incentive to demonstrate that annual electricity savings $\geq 7\%$ has been achieved.

Cx provider invoices and owner’s repair costs must be submitted to verify final owner costs for the EBCx project. Documentation required for payment of the performance incentive includes:

1. Final report and deliverables provided to utility (see Documentation section below)
2. Owner’s acceptance of deliverables

Performance Report (RCx)

RCx- Retro-Commissioning (Path A)

PERFORMANCE INCENTIVE – \$0.05 per kWh on all electric savings up to 15% maximum (if savings $\geq 7\%$ performance threshold). Funding cannot exceed 100% of total commissioning project costs.

Performance Report

1. 1st Year Performance: “Persistence Checks” Form
2. Non-Cx (Occupancy, equipment upgrades) Energy Use Changes Tracking Form
3. 24 months of energy use data (City Light will supply electric consumption data)
4. Documentation of additional costs related to the Commissioning project:
 - a. Commissioning Provider(s) costs during performance year
 - b. Customer Implementation costs
 - i. Building system upgrade costs
 - ii. Equipment repairs/ upgrades
 - iii. Simple repairs/adjustments

Appendix A: RCx Documentation Requirements:

Required documents and forms are available from your Energy Management Analyst or online via a [SharePoint site](#). Access to the site will be provided to you by the EMA.

Note the EMA will grant SharePoint access to email addresses supplied by the provider or participant. The SharePoint application requires that any email address used is linked to a Microsoft user account.

Provider Experience Submittals (RCx)

The customer's commissioning provider(s) shall submit the following documentation to Seattle City Light prior to execution of a participation agreement to document that the provider meets or exceeds provider experience requirements.

1. Submit a copy of their resume(s) detailing relevant professional experience and a current credential qualifying them as a [Seattle Building Tune-Up Specialist](#).
2. Provide references from customers or other utility commissioning programs from two (2) commissioning projects similar to the customer's proposed project. Specifically provide samples or documentation of:
 - a. Existing Building Commissioning Plans
 - b. Recommended Energy Efficiency Improvements (EEl)s
 - c. Final Commissioning Reports
 - d. Facility or Systems Manual
 - e.

Retro-Commissioning Documentation (RCx)

RCx Investigation Report Table of Deliverables (Update of Assessment Report)

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|-----|---|---|--------------------|--|
| 1. | Executive Summary (update) | | | |
| 2. | Description of facility (update) | | | Update from CX plan - systems, |
| 3. | Owner's Requirements | | | |
| 4. | Current Facility Requirements | | | |
| 5. | Training Requirements | | | |
| 6. | Facility Guide Approach | | | |
| 7. | CX Plan (update) | Same as Assessment | Optional | Update what was |
| 8. | CX Schedule (update) | Same as Assessment | Optional | Update schedule |
| 9. | EEl Summary Table | Summary Table of Energy Efficiency Improvements | Yes | |
| 10. | Energy Efficiency Improvement (EEl) Measure Savings and Documentation | EE Improvement (EEl) Measure Documentation Requirements | | Provide full description of EEl with pre and post conditions and approach/testing; include capital measures. Documentation for each measure must be included |

| | | | | |
|-----|---------------------------------------|---|-----|---|
| 11. | EI Investigation Details (per system) | Energy Efficiency Improvements (EEI) Details - XX.doc XX= System Types Applicable to building {AHU; VAV boxes; EF; HX; Chiller Plant; Boiler Plant; DHW Plant; Radiant heating/cooling; Lighting; Envelope; Energy Data} see forms VIII through XIX. | Yes | What was tested, how, and results by system; includes capital improvements. Provide at least checklist items and then reference where other information is provided. Must include all info on form. |
| 12. | Training & O&M Time Documentation | Documentation of staff participation and training time | Yes | Time owner's staff has spent working/ training with Cx provider. |

RCx Final Commissioning Report (Update of Investigation Report)

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|----|---|------------------------------|--------------------|--|
| 1. | Executive Summary (update) | | | |
| 2. | Description of facility (update) | | | Update as needed from Investigation report |
| 3. | Current Facility Requirements (update) | | | |
| 4. | CX Plan (update) | Same as Investigation Report | Optional | Update what was investigated |
| 5. | CX Schedule (update) | Same as Investigation Report | Optional | Actual final dates including bonus |
| 6. | Investigation Details (update) | Same as Investigation Report | Yes | Update for any further Investigation that occurred |
| 7. | EEI Summary Table (update) | Same as Investigation Report | Yes | Update for any changes; put in final costs |
| 8. | EEI Investigation Narrative(s) (update) | Same as Investigation Report | Yes | Update for any changes; add how it was verified Include documentation and measure verification as required |

| | | | | |
|-----|--|--|-----|--|
| 9. | Training Recommendations | | | |
| 10. | Training & O&M Time Documentation (update) | Training & O&M Staff Time Documentation | Yes | All training - formal and informal; staff time provided by owner |
| 11. | Implementation Cost | Customer Implementation Cost Tracking Report | Yes | PROVIDED BY OWNER along with invoices |
| 12. | Non-CX Energy Use Changes | Facility Change Tracking Form (Persistence Checks) | Yes | Changes since start of CX process (changes that affect energy use significantly but were |

Facility Guide/Systems Manual (RCx)

| | Required Deliverables | Template Available | Must use template? | Notes on Document Requirements |
|----|--|--------------------------------|--------------------|---|
| 1. | Index | | | |
| 2. | How Systems Work (efficiently) | | | Descriptions of systems, set points, sequences, |
| 3. | Current Facility Requirements (update) | | | |
| 4. | On-Going CX Plan | | | |
| 5. | On-Going Training Plan | | | |
| 6. | Energy Tracking & Benchmarks | | | Key Performance indicators (KPIs) to track progress |
| 7. | Performance Checks | Performance Persistence Checks | Yes | BAS trends and procedures to verify efficiency Improvements are still in place |
| 8. | Other content to keep building efficient | | | Ideas: labels or charts on equipment or in equip room; additions to DDC |

Performance Incentive Documentation (RCx)

Up to 18 Months from completion of commissioning phase to demonstrate annual electric savings $\geq 7\%$.

Performance Documentation - PROVIDED BY OWNER (RCx)

| | Required | Template Available | Must use | Notes on Document |
|--|----------|--------------------|----------|-------------------|
|--|----------|--------------------|----------|-------------------|

| | Deliverables | | template? | Requirements |
|----|------------------------------------|--|------------------|---|
| 1. | Performance Checks (update) | Performance Persistence Checks | Yes | Update Dates and Results of Checks by O&M Staff (At least quarterly) |
| 2. | Performance Documentation | | | Per Performance Check form in Facility Guide |
| 3. | Non-CX Energy Use Changes (update) | Facility Change Tracking Form (Persistence Checks) | Yes | Update changes during performance period (changes that affect energy use significantly but were not part of CX) |
| 4. | Other non-electric energy data | | | Provide most recent 24 months of consumption data for all non-electric energy sources |