



Building Walkthroughs and Custom Projects

Commercial & Industrial Trade Ally Forums

Spring 2024



Learning Objectives



Understand the differences between commercial incentive pathways



Understand how a building walkthrough works



Understand how the commercial custom process works



Understand industry & agriculture custom project basics

Incentive Pathways



Commercial Incentive Pathways

Standard Incentives

- “I need to replace equipment/add insulation/etc.”
- Pre-determined incentive amounts for specific measures

Retrocommissioning

- “I want help saving energy with my current equipment.”
- Energy Trust covers 90% of the cost to optimize current equipment

Custom Projects

- “I have a big project specific to my business or building.”
- Incentives are based on savings and vary by project



Commercial Standard Pathway

Incentives

- Pre-determined cash incentives for upgrading old, inefficient equipment and making common building improvements
- Many types of equipment qualify including heating and cooling systems, water heating, insulation and lighting

Example project

- Hotel replaces 20 packaged terminal heat pumps and receives \$200 per PTHP** for a total incentive of \$4,000
- Project cost reduced from \$14,300 to \$10,300
- Savings estimate of 26,100 kWh per year

Typical building types

- Everything from small multifamily (side by side “plexes”) to large multifamily (stacked structures with 5+ levels) to large commercial spaces



Commercial Retrocommissioning Pathway

Incentives

- Incentives available to save energy with the customer's current equipment
- Engineers perform an on-site walkthrough of the customer's building to identify opportunities such as changing settings on sensors, optimizing the heating and cooling schedule, or adjusting equipment parts like belts and valves

Example project

- Elementary School completes a retrocommissioning project to optimize their HVAC system control sequences
- Adjustments will save an estimated \$11,700 per year on energy bills

Typical building types

- Typically seen in larger commercial spaces, but also in large multifamily properties



Commercial Custom Pathway

Incentives

- Cash incentives for large projects that go beyond standard equipment replacement
- A custom report is created that the customer can use to collect bids from contractors, and then receive the incentive once the work is finished

Example project

- Hotel wants to improve their inefficient pool AHU. Custom study recommends fixing AHU thermostat and adding DCV with an override to keep relative humidity at a max of 60%. Study also recommends adding air to water heat recovery system to preheat spa water with AHU exhaust.
- Project estimated to save 487 kWhs and 8,476 therms. Estimated incentives of \$12,331 and savings of \$14,124 per year on energy bills.

Typical building types

- Same as standard incentive pathway, but typically seen in larger commercial spaces

Building Walkthroughs

Building Walkthroughs

Building walkthroughs are a free service provided by Energy Trust's Existing Buildings program to help customers identify energy saving opportunities

- Process starts when a project lead comes into the program
- Program rep discusses customer needs and gathers info
- Walkthrough is offered if more info or site details are needed
- Customer may also request a walkthrough





Building Walkthroughs

Option 1

Spec sheet sent to an Energy Advisor (EA) for a prescriptive measure

- It may be determined that the project may not need immediate WTS
- An EA can help verify specs to ensure it meets requirements as listed on application
- Existing equipment specs are helpful (end of useful life?)
- A walk through may be needed to confirm the project building type and the measure(s)/systems in question
- Confirmation on a prescriptive measure, like a boiler used for space heating, can typically happen via a phone call

<input type="checkbox"/>		<input type="checkbox"/> Furnace <input type="checkbox"/> Air Handler	
Dimensions			
A	B	C	
D	E	F	
G	H	I	
<input type="checkbox"/> Crawl Door <input type="checkbox"/> Attic Opening		Dimensions	
A	B	C	
Note:			
Existing Furnace/Air Handler			
Brand		Fuel	
Model		BTU	
Existing Outdoor Unit			
Brand		Type	
Model		Tons	
Furnace Location			
Ceiling Height			
Type of Duct			
Filter Size			
Existing Electrical Information		Miscellaneous Information	
Brand of Panel		Insulate Ducts?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Furnace/Air Handler		Condensate Pump?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Breaker Amps		Outdoor Pad?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Electric Strip Heat		Lineset	Ft Yes <input type="checkbox"/> No <input type="checkbox"/>
Breaker Amps		Lineset Size	
Heater KW		Flue Size	
Outdoor Unit		# T-Stat Wires	
Breaker Amps		New T-Stat Wire?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Notes		Property Info	
		Name	
		Street	
		City	
		Telephone	

Building Walkthroughs

Option 2

Customer requests a walkthrough to help identify energy saving opportunities

- Energy Advisor (EA) schedules walkthrough with customer
- EA notes relevant building info using OnSite tool and/or field sheet
- EA identifies opportunities eligible for incentives
- EA creates a *Pathway to Savings* report showing opportunities and current incentives
- EA shares report with customer



Building Walkthroughs

If a custom project is identified, energy advisor works with the Existing Buildings engineering team to determine next steps, which may include:

- Technical analysis study (TAS) conducted by an allied technical assistance contractor (ATAC)
- Streamlined TAS provided by an allied technical assistance contractor
- In-house calculations performed by the Existing Buildings engineering team
- *Unpaid* review of materials and calculations submitted to the EA completed by the Existing Building's engineering team.



Building Walkthroughs

If project is determined to be cost effective:

- Energy advisor works with the customer throughout the process
- EA ensures all necessary forms are completed throughout the project
- EA confirms that the customer follows all steps to receive the incentive
- If the project reverts to the standard pathway, EA works with the customer or trade ally to fill out Form 120P at project completion to ensure timely processing and payment



Building Walkthroughs

Who you gonna call?

Your trade ally coordinator

- Helps determine which energy advisor you should connect with

Your energy advisor contact

- If you already have an existing relationship, call your energy advisor

The Existing Buildings program

- If you're not sure who to contact, email existingbuildings@trccompanies.com or call 866.368.7878



Custom Project Process

Commercial Custom Project Process

What does a custom project look like?

- May save energy, but is beyond the scope of standard incentives
- Requires additional energy analysis or other technical assistance
- Equipment purchases must be pre-qualified by Energy Trust***
- A post-installation verification is required if incentives are greater than \$5,000

Examples

- Direct digital controls (DDC)
- Chillers
- Heat recovery systems
- Rooftop units (RTU)
- Variable refrigerant flow systems (VRF/VRV)
- Occupancy-based PTHP controls
- Air compressors
- Variable frequency drives



Commercial Custom Incentive Process

Customer must work with an energy advisor (EA)

- EA conducts walkthrough with customer and potentially the trade ally
 - Identifies potential savings options for the site/system
 - Provides report with estimated project costs and incentive amounts
- Customer uses report to
 - Request a custom incentive
 - Collect bids from contractors to perform the work
- First an incentive estimate; then an incentive offer



Commercial Custom Incentive Process

Custom incentive details

- Incentives based on incremental costs above code/baseline
- \$0.45/annual kWh saved
- \$5/annual therm saved
- Capped at 90% of eligible measure cost
 - Eligible costs: Equipment and labor
 - Ineligible costs: Permitting, shipping, crane use, painting, warranties, concrete pads, engineering and design
 - Incremental costs/code baseline
- Max incentives in Oregon are \$750,000 per site, per year
- Incentive paid once project is completed





Commercial Custom Incentive Workflow

100E

- Custom Energy Assessment Request

104

- Energy Analysis Work Order

110C

- Pre-Bid Project Estimates Worksheet

120C

- Custom Incentive Offer

140C

- Project Completion Certification

Commercial Custom Project Examples

Top candidates for custom incentives

Commercial customers considering multiple upgrades

- Customer calls about swapping out HVAC system but later adds that they're interested in boilers, water heaters, controls, insulation, etc.

Buildings with a project that does not qualify for standard incentives

- Customer is looking to upgrade an HE boiler, but it serves a pool, domestic hot water, and HVAC (which fails to meet standard incentive requirements)

Oddball projects

- Customer wants to upgrade to HE water heaters with aquastats controlling recirculating pumps. The HE water heaters may be eligible for standard incentives while the aquastats require custom savings assessments.



Commercial Custom Project Examples

Common scenarios

Early replacement

- Customer has a 10-ton RTU that is still within its effective useful life but would like to replace it for something more efficient
- Baseline condition: Existing 10-ton RTU
- Proposed condition: New higher efficiency 10-ton RTU
- Energy savings: Difference between proposed and baseline energy use
- Incentives based on energy savings and full costs to upgrade RTU



Commercial Custom Project Examples

Common scenarios

End of life replacement

- Customer has a 10-ton RTU past its end of useful life and would like to replace it
- A code minimum efficiency unit would not qualify for incentives
- The proposed upgrade would need to be **above code**
- Energy savings and costs are incremental
 - **Incremental savings:** The difference between annual energy use of the equipment that is code compliant or market baseline and the annual energy use of the proposed high efficiency equipment
 - **Incremental cost:** The difference between the full cost of the proposed high efficiency equipment and the cost of the equipment that is code compliant or market baseline



Commercial Custom Project Examples

Common scenarios

Retrofit add-on

- Customer wants to assess energy savings by adding a VSD/VFD to their boiler distribution pump
- Baseline condition: Distribution pump operating at constant speed
- Proposed condition: Distribution pump operating at variable speed
- Energy savings: Difference between proposed and baseline energy use
- Incentives based on energy savings and full costs to integrate a VSF/VFD into the boiler pump



Commercial Custom Project Examples

Common scenarios

Controls upgrade

- Customer has a 10-ton RTU that is not providing adequate ventilation due to faulty DDC controls
- Baseline condition: Code ventilation requirements
- Proposed condition: Enable demand control ventilation (DCV) to control ventilation based on CO2 concentration amounts
- Energy savings: Difference between proposed and baseline energy use
- Incentives based on energy savings and full costs to implement DCV



Commercial Custom Project Examples

Common Scenarios

Fuel switching

- Customer wants to assess energy savings from replacing their gas fired packaged RTU with a packaged heat pump RTU
- Energy Trust does not recommend one fuel type over another as we serve both gas and electric customers
- Baseline condition: Code minimum packaged electric RTU
- Proposed condition: High efficiency packaged heat pump
- Energy savings: Difference between proposed and baseline energy use
- Incentives based on incremental costs and savings



Commercial Custom Project Initiation

Have a building that would be a good candidate?

Connect with an energy advisor through your trade ally coordinator

- Set a time for an initial walkthrough
 - This should include you (the trade ally), the building owner, and the energy advisor
- The energy advisor will take it from there
 - EA will work with the internal engineering team to determine project viability



Q & A

Thank you!