

PRIMARY SCHOOLS INCENTIVE WORKBOOK

ADD ENERGY EFFICIENCY TO YOUR CURRICULUM

Simple energy solutions earn top grades

Energy Trust of Oregon knows that school districts can reduce energy costs and direct more money into the classroom by incorporating energy-efficient equipment and systems into new school projects and major renovations. Energy-efficient solutions may also contribute to improved learning environments, enrich math and science curriculum and inspire lessons about environmental, social and fiscal responsibility.

Energy Trust can help your school district capture these benefits and earn cash incentives

for energy-efficient equipment and systems with our incentive package for primary schools less than 70,000 square feet.* Whether you're planning a new school or considering a major renovation, it provides a simple way to identify the best energy solutions for your project.

**Please note: This offering does not apply to schools with laboratories or other special facilities. Please contact your Energy Trust outreach manager to confirm your project's eligibility.*

Energy Trust outreach managers can offer input and feedback as you make energy-related decisions and assist you in completing this workbook. If you have questions or need help getting started, contact the outreach manager listed here.

Name

Email

Phone number

HOW TO USE THIS WORKBOOK

What is the primary schools incentive package?

This package provides an all-in-one, step-by-step process for designing and selecting energy-efficient equipment and systems that qualify for cash incentives. To help you save as much energy as possible and maximize your incentive benefit, we have grouped the equipment and practices to align with three efficiency tiers. To participate, you must satisfy the base requirements for the "Good" tier (refer to the table below for further detail), which include installing a minimum of two electives. You may then select additional electives to qualify for the increased incentives available in the "Better" and "Best" tiers.

	REQUIREMENT	INCENTIVE
BEST	"Good" base requirements + six or more electives At least one elective must be a non-lighting measure.	\$0.50/sq ft
BETTER	"Good" base requirements + four to five electives At least one elective must be a non-lighting measure.	\$0.40/sq ft
GOOD	15% reduction in lighting power density beyond current code requirements + 15% reduction in fan brake horsepower (BHP) + two to three electives	\$0.30/sq ft

Use this workbook throughout the course of your project to set efficiency targets, select equipment, estimate incentives and facilitate communications and decision making. Your Energy Trust New Buildings outreach manager will work with you to provide input and guidance on how to maximize the energy efficiency of your building and your incentives.

- STEP 1** Complete **Lighting** and provide necessary supporting documentation. *(Required)*
- STEP 2** Complete **Efficient Fan Design** and provide necessary supporting documentation. *(Required)*
- STEP 3** Review **Electives**, choose all that apply, complete necessary information and provide supporting documentation. *(Two electives are required.)*

Project name

Grades served

HVAC type (required)

Square footage (required)

STEP 1: LIGHTING

Efficiency requirements

All projects must achieve a maximum lighting power density, LPD, of 0.86 watts per square foot. This represents a 15 percent reduction in LPD beyond what is required in the whole-building lighting power allowance for schools in the 2014 Oregon Energy Efficiency Special Code, OEESC (see [Table 505.5.2\(a\) of the 2014 OEESC](#) for further detail). If you use space-by-space lighting power allowances, you must demonstrate an overall LPD reduction of 15 percent (see [Table 505.5.2\(b\) of the 2014 OEESC](#) for further detail).

Project information

Please fill in the table below to indicate the LPD target you have selected. A 15 percent LPD reduction is required to be eligible for this incentive package. Additionally, a total 25 percent reduction is worth **one elective credit**, a total 35 percent reduction is worth **two elective credits**, a total 45 percent reduction is worth **three elective credits** and a total 55 percent reduction is worth **four elective credits**.

Square Footage	Total Allowed Watts	Total Proposed Watts	% Better Than Code	Documentation
				<ul style="list-style-type: none">• Lighting layouts and schedules• ComCheck documentation• Invoice(s)*

*If invoices are not available, program can conduct a site visit as equipment verification.

STEP 2: EFFICIENT FAN DESIGN

Optimizing HVAC system fan design can reduce energy use and improve airflow control. All projects must reduce fan power to achieve a total fan brake horsepower that is at least 15 percent lower than the code-allowed value. [Section 503.2.10.1 of the 2014 OEEESC](#) sets allowable limits on the fan horsepower for systems with a total motor nameplate horsepower greater than or equal to five (i.e., > 5 hp). Achieve energy savings by designing your system to be more efficient than the code-allowable fan system horsepower. This is limited to fans used for HVAC applications, which fall under the requirements of [Section 503.2.10.1 of the 2014 OEEESC](#). Fans used strictly for air transfer (e.g., utility fans used in boiler, chiller, exhaust or other applications) with low pressure requirements are excluded. This requirement is to be applied to the total installed fan brake horsepower across the entire building (i.e., individual fan systems do not have to meet the 15 percent reduction requirement so long as the overall brake horsepower for the entire building is reduced by 15 percent). For projects installing VRF systems, this requirement applies to the fan power of the dedicated outdoor air system, DOAS.

Total Allowed Fan Brake Horsepower	Total Proposed Fan Brake Horsepower	Total Fan Brake Horsepower Reduction	Requirements	Documentation
			<ul style="list-style-type: none"> • The total installed brake horsepower of all HVAC fans must be at least 15% less than the code-allowed value • The following strategies are suggestions to help achieve this reduction: <ul style="list-style-type: none"> » Use of turning vanes » Use of round or oval duct wherever possible to lower leakage and reduce pressure loss » Use of relief fans in lieu of return fans where possible 	<ul style="list-style-type: none"> • Calculation of code-allowed fan system brake horsepower, per OEEESC 503.2.10.1 • Mechanical drawings/submittals justifying pressure drop adjustments used in code-allowed bare horsepower calculation • Mechanical drawings/submittals showing total fan brake horsepower for each proposed fan system

STEP 3: ELECTIVES

The following tables present elective options. You must select a minimum of two options from this section to meet base requirements and receive incentives. Completing two to three electives will qualify your project for the "Good" tier, four to five electives will qualify your project for the "Better" tier, and six or more electives will qualify your project for the "Best" tier. Please indicate the electives you plan to install from the tables below and provide the corresponding installation details.

EXTERIOR LIGHTING

[Section 505.6.2 of the 2014 OEESC](#) sets limits on the amount of lighting allowed for your site. The total lighting power allowance for all exterior building applications is the sum of the base site allowance plus each of the individual allowances for areas that are to be illuminated. Reduce the amount of installed exterior lighting to reduce the energy use of your site and receive credit for an elective. Your site must be at least 10 percent more efficient than code and cost-effective, as defined by Energy Trust, to qualify as an elective. Energy Trust program staff will review your exterior lighting design to determine if it qualifies.

Check to Select	Total Allowed Watts	Total Proposed Watts	% Better Than Code	Documentation
<input type="checkbox"/>				<ul style="list-style-type: none"> Lighting plans and schedule ComCheck documentation Invoice(s)*

BI-LEVEL LIGHTING IN CORRIDORS

Corridors are good candidates for bi-level lighting due to periods of low to no occupancy. It is common for these spaces to have lights on all day, regardless of the lighting need. Bi-level fixture controls present an opportunity to save energy by dimming light levels when areas are unoccupied. Bi-level lighting controls can also turn off perimeter light fixtures for much of the day in areas that receive sufficient daylight to meet lighting needs.

Check to Select	Square Footage of Corridors	Requirement	Number of Sensors	Documentation
<input type="checkbox"/>		<ul style="list-style-type: none"> 50% reduction of lighting output when corridors are unoccupied 		<ul style="list-style-type: none"> Lighting plans and schedule Sensor/controller cutsheet Invoice(s)*

*If invoices are not available, program can conduct a site visit as equipment verification.

PLUG LOADS

Please choose only one of the two options below. Projects are only eligible to receive one elective credit for plug load measures.

Check to Select	Measure	Requirements	No. Smart Strips Installed/ Computers Using Power Management Software	Documentation
<input type="checkbox"/>	Phantom load reduction, smart strips	<ul style="list-style-type: none"> Use of smart strips (no-occupancy-controlled strips) Smart strips must have a minimum of 4 controlled outlets 		<ul style="list-style-type: none"> Smart strip product data sheet Equipment inventory showing smart strips and controlled equipment Invoice(s)*
<input type="checkbox"/>	Phantom load reduction, power management software	<ul style="list-style-type: none"> Use of power management software on all desktop computers <ul style="list-style-type: none"> Non-desktop computers (e.g., servers, thin clients, laptops, tablets) are excluded In addition, qualified PC power management platforms shall include all of the following: <ul style="list-style-type: none"> Centralized control Ability to validate number of PCs being controlled Ability to monitor and report actual energy savings 		<ul style="list-style-type: none"> Software selection (go to energytrust.org/commercial/incentives/equipment-upgrades-remodels/computer-equipment/it-power for a list of approved products) Computer inventory report that shows: <ul style="list-style-type: none"> Which end points will be controlled by the software What the power settings will be Where computers are physically located Number of computers known to be labeled ENERGY STAR® Invoice(s)*

ENERGY STAR COOKING EQUIPMENT

Most commercial kitchen appliances are energy-intensive. Installing ENERGY STAR appliances may help you save energy and reduce your school's operational costs. To earn incentives for this elective you must install at least two pieces of equipment from the table below (you will not receive additional elective credit for installing more than two pieces of equipment).

Check to Select	Equipment Type	Requirements	Installed Quantity	Additional Information	Documentation
<input type="checkbox"/>	Electric combination oven	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> Equipment cut sheets Invoice(s)*
<input type="checkbox"/>	Electric convection oven (full size)	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> Equipment cut sheets Invoice(s)*

*If invoices are not available, program can conduct a site visit as equipment verification.

ENERGY STAR COOKING EQUIPMENT (Continued)

<input type="checkbox"/>	Electric convection oven (half size)	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Electric griddle	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Electric hot food holding cabinet (full size)	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Electric hot food holding cabinet (half size)	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Electric large vat fryer	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Electric steam cooker	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Gas combination oven	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Gas convection oven (full size)	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Gas fryer	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Gas griddle	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*
<input type="checkbox"/>	Gas steam cooker	ENERGY STAR		Make: Model:	<ul style="list-style-type: none"> • Equipment cut sheets • Invoice(s)*

*If invoices are not available, program can conduct a site visit as equipment verification.

SERVER CLOSET MINI-SPLIT AIR CONDITIONER

Check to Select	Measure	Requirements	Installed Quantity	Installed Make/ Model	Documentation
<input type="checkbox"/>	High-efficiency server closet mini-split air conditioner	<ul style="list-style-type: none"> Minimum of SEER 18 cooling efficiency Cooling capacity no greater than 4 tons per unit Unit(s) must serve a space exclusively used for servers and other data equipment Only mini-split air conditioners are eligible for this elective - other data room cooling systems (such as CRAC units) are not included 		Make: Model:	<ul style="list-style-type: none"> Mechanical schedule Equipment cut sheets Invoice(s)*

PREMIUM ELECTIVES (WORTH TWO ELECTIVE CREDITS)

Check to Select	Measure	Requirements	Additional Information	Documentation
<input type="checkbox"/>	Condensing furnace	Minimum of 91% AFUE	Furnace make: Furnace model: Furnace size: Furnace efficiency:	<ul style="list-style-type: none"> Mechanical schedule Equipment cut sheets Invoice(s)*
<input type="checkbox"/>	VFD on supply fan (Projects with a VRF system are not eligible for this elective)	Installed on all primary HVAC system supply fan motors	Installation location of VFDs:	<ul style="list-style-type: none"> Equipment cut sheets Invoice(s)* Narrative describing how fan speed will be controlled (e.g., static pressure and temperature)
<input type="checkbox"/>	Condensing boiler	Minimum of 94% annual fuel utilization efficiency, AFUE (boilers < 300 kBtu/hr), 94% thermal efficiency (boilers between 300-2,500 kBtu/hr) or 94% combustion efficiency (boilers > 2,500 kBtu/hr)	Boiler make: Boiler model: Boiler size: Boiler efficiency:	<ul style="list-style-type: none"> Mechanical schedule Equipment cut sheets Invoice(s)*

*If invoices are not available, program can conduct a site visit as equipment verification.

SPECIAL MEASURES (FORM 520SM)

Special measures refer to design features that are not specified in this workbook but may qualify for incentives. Energy Trust will assess these on a case-by-case basis. Potential special measures for primary schools may include but are not necessarily limited to:

- Heat recovery ventilation
- Demand-controlled kitchen hood exhaust
- High-efficiency chillers

Check to Select	Measure Description	Documentation
<input type="checkbox"/>		<ul style="list-style-type: none">• Pertinent schedules/contract drawings• Completed Form 520SM• Calculation• Incremental cost• Invoice(s)*
<input type="checkbox"/>		
<input type="checkbox"/>		

*If invoices are not available, program can conduct a site visit as equipment verification.

CLEARresult

Program Management Contractor for Energy Trust of Oregon

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Energy Trust of Oregon is an independent nonprofit organization dedicated to helping utility customers benefit from saving energy and tapping renewable power. Our services, cash incentives and energy solutions have helped participating customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas save on energy costs. Our work helps keep energy costs as low as possible, creates jobs and builds a sustainable energy future. 5/16