

Effective as of
January 19, 2012

Building Envelope

Pacific Power provides incentives for many types of energy-efficient technologies. Please read the following sections carefully to ensure that you follow the appropriate steps for securing your incentive. Equipment may be subject to inspection prior to incentive payment. All incentives for Building Envelope require the space to be cooled by mechanical systems which use a refrigeration cycle to provide cooling.

Incentives for additional measures may be available. For more information about the FinAnswer Express program, eligibility requirements, incentive levels or other general inquiries, contact your local equipment dealer or Pacific Power. You can visit the program website at pacificpower.net/wattsmart and submit your inquiry online, or you can call our energy services hotline at 1-800-222-4335.

HIGH-EFFICIENCY WINDOWS

Measure description: High-efficiency windows are designed to reduce the rate of heat transfer through the window assembly and prevent solar heat gain while still allowing sufficient light through the window to illuminate the space. The National Fenestration Rating Council (NFRC) certifies the energy performance of window assemblies and glazing products in two categories, thermal transmission which is measured by a U-factor and solar heat gain which is measured by the Solar Heat Gain Coefficient (SHGC). Please note that a lower SHGC lowers cooling requirements for the space while potentially increasing heating requirements.

Applicability: New construction and retrofit installations are eligible for incentives via a post-purchase application process. Skylights and doors are not eligible for incentives.

Equipment eligibility: Windows must be installed in a facility that is cooled with mechanical systems which use a refrigeration cycle and must meet all other program terms and conditions.

- **Window Assemblies:** Pre-fabricated window assemblies with a U-value less than or equal to 0.30 and a SHGC value less than or equal to 0.33, rated in accordance with the National Fenestration Rating Council (NFRC), are eligible.
- **Site-Built Window Systems:** The glazing used in site-built window systems must have a U-value less than or equal to 0.30 and a SHGC value less than or equal to 0.33, rated in accordance with the NFRC, to be eligible. Site-built metal-framed window systems must contain a thermal break.

Items to submit with application:

1. Dated sales receipt/invoice for the installed materials.
2. Itemized listing of window manufacturer, dimensions, type, U- value and SHGC.
3. Documentation of window efficiency:
 - a. Original NFRC rating stickers for pre-fabricated window assemblies.
 - b. Manufacturer specification sheet indicating U-value and SHGC of glazing product and frame assembly thermal break for site-built window assemblies.
4. A completed copy of Table 3, the Envelope Application Supplement.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification required? No. Prequalification is recommended, but not required to receive incentives. Contact your vendor or Pacific Power for more information.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
WNSBRE	Retrofit Site-Built Window	\$0.34 / square foot
WNASRE	Retrofit Pre-Fabricated Window	\$0.34 / square foot
WNSBNE	New Construction Site-Built Window	\$0.34 / square foot
WNASNE	New Construction Pre-Fabricated Window	\$0.34 / square foot

ROOF/ATTIC INSULATION

Measure description: Roof insulation reduces the rate of solar heat gain through the ceiling/roof assembly of the building. Increasing the amount of roof insulation reduces building heat gain and subsequently reduces the cooling load for the enclosed building space. Insulation is rated according to an R-value, with higher values providing a higher resistance to heat gain, which contributes to the total assembly U-factor.

Applicability: New construction and retrofit installations may be eligible for incentive via a post-purchase application process. Building envelope incentives are available for facilities in climate zone 16 only.

Equipment eligibility: Insulation must be installed in facilities that are cooled with mechanical systems, and must meet all other program terms and conditions. Compliance with the minimum efficiency requirements of Roof Insulation measures may be demonstrated with equivalent U-factors, subject to approval of Pacific Power.

- *Retrofit Applications:* Roof insulation installed must provide an additional R-10 equivalent over the R-value of pre-existing installed insulation.
- *New Construction/Major Renovation:* To qualify for incentives in new construction/major renovation projects, an additional minimum increment of roof insulation 20 percent above that required by the 2008 Building Efficiency Standards (Title 24 2008) must be installed.

Table 1. Program Requirements for Roof Insulation in New Construction/Major Renovation

Roof	High Rise Residential & Hotel/Motel buildings		All other	
	Climate Zone 16 (Total Assembly U-factor)			
	Code Requirements	Minimum Program Requirements	Code Requirements	Minimum Program Requirements
All-wood Joist/Truss	$U \leq 0.065$	$U \leq 0.052$	$U \leq 0.065$	$U \leq 0.052$
Metal Joist/Truss	$U \leq 0.028$	$U \leq 0.022$	$U \leq 0.039$	$U \leq 0.031$

R = R-value which is the resistance of the insulation to the conduction of heat.

U = U-factor which is a measurement of thermal transmission.

Items to submit with application:

1. Dated sales receipt/invoice for the installed materials.
2. Itemized listing of insulation type, square footage, and R- value installed.
3. If retrofit, include pre-existing R- value and total R- value (post-installation).
4. A completed copy of Table 3, the Envelope Application Supplement.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification required? No. Prequalification is recommended, but not required to receive incentives. Contact your vendor or Pacific Power for more information.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
ROOFRE	Roof/Attic Insulation Retrofit	\$0.08 / square foot
ROOFNE	Roof/Attic Insulation New Construction	\$0.04 / square foot

WALL INSULATION

Measure description: Wall insulation reduces the rate of heat loss through the walls of a building. Increasing the amount of wall insulation reduces building heat gain and subsequently reduces the cooling load for the enclosed building space. Insulation is rated according to an R-value, with higher values providing a higher resistance to heat loss, which contributes to the total assembly U-factor.

Applicability: New construction and retrofit installations are eligible. Building envelope incentives are available for facilities in climate zone 16 only.

Equipment eligibility: Insulation must be installed in facilities that are cooled with mechanical systems, and must meet all other program terms and conditions. Compliance with the minimum efficiency requirements of Wall Insulation measures may be demonstrated with equivalent U-factors, subject to approval of Pacific Power.

- Retrofit Applications: Wall insulation installed must provide an additional R-10 equivalent over the R-value of existing installed insulation.
- New Construction/Major Renovation: To qualify for incentives in new construction/major renovation projects, an additional minimum increment of wall insulation above that required by the applicable California energy code must be installed, as described in Table 2

**Table 2. Program Requirements for Wall Insulation
in New Construction/Major Renovation**

Assembly Type	High Rise Residential/Hotel/Motel buildings		All other	
	Climate Zone 16 (Total Assembly U-factor)			
	Code Requirements	Minimum Program Requirements	Code Requirements	Minimum Program Requirements
Metal Building	U ≤ 0.057	U ≤ 0.045	U ≤ 0.061	U ≤ 0.073
Metal Framed	U ≤ 0.105	U ≤ 0.084	U ≤ 0.062	U ≤ 0.074
Mass Light	U ≤ 0.170	U ≤ 0.136	U ≤ 0.170	U ≤ 0.204
Mass Heavy	U ≤ 0.160	U ≤ 0.128	U ≤ 0.160	U ≤ 0.192
Wood-framed and Other	U ≤ 0.042	U ≤ 0.033	U ≤ 0.059	U ≤ 0.071

R = R-value which is the resistance of the insulation to the conduction of heat.

U = U-factor which is a measurement of thermal transmission.

Items to submit with application:

1. Dated sales receipt/invoice for the installed materials.
2. Itemized listing of insulation type, square footage, and R- value installed.
3. If retrofit, include pre-existing R- value and total R- value (post-installation).
4. A completed copy of Table 3, the Envelope Application Supplement.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification required? No. Prequalification is recommended, but not required to receive incentives. Contact your vendor or Pacific Power for more information.

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive</u>
WAINRE	Wall Insulation Retrofit	\$0.10 / square foot
WAINNE	Wall Insulation New Construction	\$0.05/ square foot

Table 3. Envelope Application Supplement
(Submit copy of table with application for insulation or windows)

Customer	Customer name					
	Facility address					
	Facility city, State, Zip					
	Is primary heating provided by electric resistance?		YES	NO		
	Facility square footage					
	Roof/Attic assembly type (check one)		<input type="checkbox"/> All-wood Joist/Truss <input type="checkbox"/> Metal Joist/Truss			
	Wall assembly type (check one)		<input type="checkbox"/> Metal building <input type="checkbox"/> Mass light <input type="checkbox"/> Metal framed <input type="checkbox"/> Mass heavy <input type="checkbox"/> Wood framed <input type="checkbox"/> Other			
	Is building space mechanically cooled? (circle one)		YES	NO		
Required Insulation Information (Roofs & Walls)	Select project type (check one)		<input type="checkbox"/> Retrofit <input type="checkbox"/> New Construction/Major Renovation			
	Select type of wall insulation (check one)		<input type="checkbox"/> Blown-in insulation <input type="checkbox"/> Batts or Rolls <input type="checkbox"/> Continuous Insulation			
	If retrofit, provide R-value of pre-existing wall insulation:		Pre-existing wall insulation R-value =			
	Select type roof/attic insulation (check one)		<input type="checkbox"/> Blown-in insulation <input type="checkbox"/> Batts or Rolls <input type="checkbox"/> Continuous insulation			
	If retrofit, provide R-value of pre-existing roof insulation:		Pre-existing roof/attic Insulation R-value =			
	Please provide information about the type and amount of insulation installed in the table below:					
	Blown-in insulation		Batts and Rolls			
	Number of bags used:		Roof	R- value	Thickness (inches)	Area Insulated (sq. ft.)
	Area insulated (sq. ft.):					
	Insulation thickness:	in.				
	R-value of insulation:					
	Type of insulation (check one):		Walls			
	<input type="checkbox"/> Cellulose <input type="checkbox"/> Fiberglass <input type="checkbox"/> Other					
Continuous Insulation						
Manufacturer/Brand			Thickness Installed (inches)			
R- value per Inch			Area Insulated (sq. ft.)			
Roof assembly final U-value =		Wall assembly final U-value=				
Window Information	Select type of windows installed (check one or both)		<input type="checkbox"/> Pre-fabricated assemblies <input type="checkbox"/> Site-built windows			
	Prefabricated window assembly U-value					
	Prefabricated window assembly SHGC					
	Area of prefabricated windows installed (sq. ft.)					
	Site-built window glazing U-value					
	Site-built window glazing SHGC					
	Does window frame contain a thermal break (circle one)		YES	NO		
	Area of site-built windows installed (sq. ft.)					

REFLECTIVE WINDOW FILM

Measure description: Window films are thin layers of polyester film that are typically applied to existing windows to reduce solar heat gain. Adding window films to existing windows reduces building heat gain and subsequently reduces the cooling load for the enclosed building space. The National Fenestration Rating Council certifies the SHGC and visible transmittance of window film products from participating manufacturers. Please note that a lower SHGC lowers cooling requirements for the space while potentially increasing heating requirements.

Applicability: Retrofit installations only are eligible for incentives via a post-purchase application process.

Equipment eligibility: Reflective window films must be purchased and professionally installed. The customer/contractor will be required to submit the square footage of film installed, performance characteristics of the existing window, applied window film specifications, and the orientation of the window (i.e., North, East, South or West). Incentives for window films are calculated based on square footage, window orientation and other system parameters at \$0.12/kWh annual energy savings and are subject to approval by Pacific Power. Window films must be installed in a facility that is cooled with mechanical systems using a refrigeration cycle and must meet all other program terms and conditions.

Items to submit with application:

1. Dated sales receipt/invoice with install date and retailer/contractor name, address and phone number.
2. Itemized listing of window types, orientation, square footage, and film installed.
3. Manufacturer’s window film specification sheet.
4. A completed copy of Table 5, Windows Film Information Table
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Prequalification required? No. Prequalification is recommended, but not required to receive incentives. Contact your vendor or Pacific Power for more information.

Note: Pacific Power has a calculation software tool available for vendors participating in our Energy Efficiency Alliance (EEA) to calculate project-specific energy savings, project economics, and eligible incentives for window film projects. Visit our website at pacificpower.net/wattsmart for a current list of participating vendors.

Table 5. Window Film Information Table

(Submit copy of table with application)

Customer name							
Facility address							
Facility city, State, Zip							
Building heating system type (check one)				<input type="checkbox"/> Natural gas heating	<input type="checkbox"/> Electric resistance heating		
				<input type="checkbox"/> Heat pump	<input type="checkbox"/> Other		
Building cooling system type (check one)				<input type="checkbox"/> Air conditioner	<input type="checkbox"/> Chilled water system		
				<input type="checkbox"/> Evaporative cooler	<input type="checkbox"/> Other		
Existing window type (check one)				<input type="checkbox"/> Clear, single pane	<input type="checkbox"/> Low-e, double pane		
				<input type="checkbox"/> Clear, double pane	<input type="checkbox"/> Low-e, triple pane		
				<input type="checkbox"/> Clear, triple pane			
Shading Coefficient (SC) of window film							
Provide square footage of window film installed based on orientation of window:							
North:		Northeast:		East:		Southeast:	
South:		Southwest:		West:		Northwest:	

<u>Equipment Code</u>	<u>Measure Description</u>	<u>Incentive*</u>
WINDFI	Window Film	\$0.12 / kWh

*For assistance calculating the project savings and incentives, contact Pacific Power on our energy services hotline at 1-800-222-4335 or via email to: ca.bldgenvelope@pacificpower.net. Energy savings are subject to Pacific Power approval.

REFLECTIVE ROOFING PRODUCTS (COOL ROOFS)

Measure Description: Cool roofs include a variety of paints, coatings, tiles and other materials applied to or incorporated into roof surfaces that reduce the amount of solar radiation absorbed by a facility’s roof. Cool roofing products have high solar reflectance and high radioactive emittance, which reduces solar gain of the roof and building, subsequently reducing the cooling load during warmer months. However, cool roof products may increase heating loads during cooler months.

Applicability: New construction and retrofit installations completed prior to January 19, 2012 are eligible via a post-purchase application process.

Equipment Eligibility: Incentives are not available for cool roof installations purchased and installed on or after January 19, 2012. Incentives are only available for low-slope roofs purchased and installed prior to January 19, 2012 where the qualifying product is installed over a space that is cooled by mechanical systems which use a refrigeration cycle. Qualifying products must be purchased and installed, meet all other program terms and conditions, and comply with the ENERGY STAR® Reflective Roof Products requirements as follows:

1. For low slope roofs (Rise to Run Ratio ≤ 2:12): Initial solar reflectance ≥ 0.65 and must be ≥ 0.50 after three years.

For further information on Cool Roofs and for a list of qualifying products, visit: www.energystar.gov

Items to Submit with Application:

1. Dated sales receipt/invoice for the installed materials.
2. Manufacturer’s equipment specification sheet.
3. A copy of the manufacturer’s warranty statement.
4. A completed copy of Table 4, Reflective Roofing Products Information Table.
5. A current copy of the Pacific Power utility bill for the address where the item(s) are installed.

Pre-qualification Required? No. Prequalification is recommended, but not required to receive incentives.

<u>Equipment Code</u>	<u>Minimum Efficiency Requirement</u>	<u>Incentive</u>
COOLRF	ENERGY STAR qualified	\$0.10 / square foot

Table 4. Reflective Roofing Products Information Table
(Submit copy of table with application)

Customer Name	
Facility Address	
Facility City, State, Zip	
Net Roof Area (Include only roof area over mechanically cooled space, and exclude roof openings and equipment curbs)	
Existing Roofing Product	
Existing HVAC Equipment Type	
Existing HVAC Equipment Size (tons or BTU/hr)	
Reflective roofing product is installed over mechanically cooled building space (circle one)	YES NO
Heating Source (Gas or Electric)	