

New BPA Deemed Measure: **Energy Smart Design™ -Office Trade Offs**

**Measure Description:** Energy Smart Design™ -Office (ESD –Office) Trade Offs are prescriptive packages, with a substitution for one of the following measures:

- CEE Tier 2 cooling system minimum efficiency level
- Maximum Effective Window U-Values (fixed 0.35 / Curtain wall 0.40)
- 0.30 Maximum Window SHGC
- Enhanced economizer
- Integrated Design of HVAC System, including Fan Power reduction
- 0.75 Watts/SF Lighting Budget (whole building)
- Occupancy Sensors-install where lighting loads are over 100 watts and sensors are not required by code

**Savings:** ESD -Office Trade Offs savings must be greater than or equal to the following package savings: Pkg A = 2 kWh/SF, Pkg B = 1 kWh/SF, Pkg C = 1 kWh/SF, over a building built to the code in effect at the time of building permitting. This represents 10% to 15% savings over code, and a BPA Regional target of just over 1 aMW through 2011.

**Incentive:** Pkg A = 50 cents per square foot, Pkg B = 25 cents per square foot, Pkg C = 25 cents per square foot (CRC or CAA)

**Application:** Office buildings, including banks, libraries, dentist offices and medical office buildings.

**Eligibility:** ESD -Office Trade Off buildings must meet the following:

- new construction, an office addition, or a major renovation for an office;
- 3 stories or less;
- a maximum of 100,000 square feet;
- the building must use a packaged HVAC system for at least 70 percent of the conditioned space; and
- have a maximum Window-to-Wall Ratio of 30%.

**Market size:** Between 300 and 350 small office buildings are expected to be built each year in BPA service territory.

**Effective:** The ESD -Office Trade Off incentive is available April 1, 2008 through Sept 30, 2009, and is anticipated to be available through 2011, pending rate case results.

**PTR reference number:** Package A Trade-Off CMN0000A, Package B Trade-Off CMN0000B, Package C Trade-Off CMN0000C

**Documentation requirements:** 1) Cooling system cut sheets, 2) NFRC label for each glazing product or documentation of default U-value and SHGC, 3) If any window performance exceeds the specified U-values, provide an area-weighted calculation of average window thermal performance for all windows, showing that the area-weighted U-value is 0.35 or below for fixed glazing and 0.40 or below for operable windows, storefront and curtain wall glazing systems, 4) Economizer Commissioning Checklist\*, 5) Integrated Design Checklist\*, 6) Copy of lighting budget form required for permit and “any submitted code compliance documents”, 6) Building drawings in PDF format, 7) Lighting Control Checklist, 8) certification letter from a professional familiar with the building design and 9) Trade-Off form.

\* Sample certification letter, checklists and forms available in the specification appendices, which can be found at <https://www.ptr.nwcouncil.org/outsidetdocs.asp>

**Marketing materials:** Flyers, FAQ's, bill stuffers, sample end-user agreement, sample lighting guides, talking points, sample end-user certificate and construction fence sign are available at <http://www.bpa.gov/ESD>

**Owner Outreach:** to arrange technical conference calls for the owner or design team contact your Energy Efficiency Representative.

**A&E Outreach:** Training sessions for architects and engineers on Advanced Building Core Performance and Energy Smart Design™ -Office. Register at <http://www.advancedbuildings.net/training.php>

**Note:** ESD -Office Trade Offs ARE aligned with the ASHRAE Advanced Energy Design Guide for Small Office Buildings and Advanced Building Core Performance Guidelines. No modeling or M&V is required.