

# CORE's Commercial EE Upgrade Eligibility List

Updated 6/26/13

## **Lighting**

Fluorescent T12 Fixture Retrofits  
LEDs  
LED Luminaires  
Parking Garage Lighting  
De-lamping  
Reflector Kits  
Occupancy and photo sensors/Controls  
Solar Tubes  
LED Exit lighting

## **HVAC**

Boilers –  $\geq 92\%$  AFUE  
Air Side Economizers for all roof top units (RTUs)  
Split Systems  $< 5.4$  tons,  $\geq 14$  SEER  
Gas Furnace –  $\geq 92\%$  AFUE  
Hot Water – Tankless, EF  $\geq 0.82$   
Hot Water – Gas Storage, EF  $\geq 0.8$   
Hot Water – Electric Storage (Heat Pump) EF  $\geq 0.92$   
Hot Water – Side-Arm w/ heat exchanger (replacing typical storage type),  $\geq R-20+$  tank with  $\geq 92\%$  AFUE source  
Duct Sealing/Insulation – Mastic only, R-6  
Pipe Wrap – Distribution lines (Hot and cold), unconditioned areas only  
Water or Ground Source Heat Pump  
Rooftop AC –  $< 5.4$  ton,  $\geq 14.0$  SEER – Tier 1  
Rooftop AC – 5.5 – 19.9 ton,  $\geq 11.5$  SEER – Tier 1  
Re-Commissioning (Retro) of HVAC Systems  
Efficiency Controls, ie. Outside temp reset  
Heat and Energy Recovery Ventilators (HRVs and ERVs)

## **Advanced Evaporative Cooling**

Indirect or Hybrid Advance Evap. Cooler

## **Compressed Air**

VFD Compressors  
No Loss Air Drain

## **Building Envelope**

Window Film  
Air Sealing Measures – Blower Door Test In/Test Out Required  
Energy Efficient Windows (U-factor not to exceed 0.35 or applicable component measure per 2009 IECC)  
Insulation (Minimum 2009 IECC prescribed levels)

## **Food Service Equipment**

Energy Star High Efficiency Ice Machine – Ice Making Head (IMH)  
Energy Star High Efficiency Ice Machine – Remote Condensing Unit (RCU) or Split System  
Energy Star High Efficiency Ice Machine – Self Contained Unit (SCU)  
Energy Star Dishwasher – Under Counter  
Energy Star Dishwasher – Door Type  
Energy Star Dishwasher – Single Tank Conveyor  
Energy Star Dishwasher – Multi Tank Conveyor  
Energy Star Commercial Refrigerator – Glass Door  
Energy Star Commercial Refrigerator – Solid Door  
Energy Star Commercial Freezer – Glass Door  
Energy Star Commercial Freezer – Solid Door  
Energy Star Insulated Hot Food Cabinets –  $\geq 7$ cu. ft.  
Energy Star Steamers  
Energy Star Fryers  
Energy Star Gas Griddles  
Energy Star Gas Convection Ovens

Energy Star Electric Griddles – ≥ 70% HL Eff.

Energy Star Electric Ovens – ≥ 70% HL Eff.

Properly Balanced Hood

### **Grocery**

Reach-In or Walk-In Refrigerator or Freezer – Door Gaskets, Glass Door

Reach-In or Walk-In Refrigerator or Freezer – Door Gaskets, Solid Door

High-Efficiency Open Display Case – lf. of case

High-Efficiency Reach-In Display Case – lf. of case

Walk-In Coolers or Refrigerated Warehouse Spaces – Strip Curtains, sf. of doorway

Walk-In Coolers or Refrigerated Warehouse Spaces – E-Cube

Auto-Closers – Main Walk-In Door

Auto-Closers – Reach-In Door

### **Office Equipment**

Server Consolidation by Virtualization

Energy Star Enterprise Server

Energy Star Vending Machine with Software

### **Motors**

All NEMA Premium Motors

VFD Fans/Pumps

### **Other**

Plug Load Occupancy Sensors

Shaded Pole Motor Retrofit with EC Motor (Refrigeration)

Network Computer Power Management Software

Sub-Metering

Energy Monitoring

Water Conservation

Swimming Pool (Spa) Covers, Liquid Pool Cover

### **Renewable Energy**

Photovoltaics

Solar Thermal

Evacuated Tube

Pellet Boilers

Micro Hydro

## **Eligibility Details:**

### **Lighting**

- Fluorescent T12 Fixture Retrofits:
  - Rebates are based on one-for-one replacement of fluorescent T12 lamps controlled by magnetic ballasts. The new fixtures must include high efficiency electronic ballasts
- LEDs:
  - LED lamps and interior luminaires must be Energy Star Qualified
  - All other LED fixtures and lighting must be either Energy Star Qualified, Lighting Facts or DesignLights Consortium Qualified
- LED Luminaires:
  - Luminaires must be commercial rated
- Parking Garage Lighting:
  - Reduce total lighting energy use to 0.18 watts per square foot or less
- Delamping:
  - Rebates are based on the permanent removal of the equivalent of at least one 4' (T12, T12HO or T8) lamp from an existing 8' or 4' fixture as a result of a retrofit
- Reflector Kits:
  - Reflector kits must be installed in conjunction with delamping or installation of lower wattage lamps (e.g., 32 Watt lamps to 28 Watt lamps)
  - Reflector must have a reflectivity value equal to or greater than 90% and match the number of new fluorescent lamps
- Occupancy Sensors/Controls:

- Proper design and installation of occupancy sensors and/or controls that reduce on-time, such as daylighting controls or timers. Also applicable to intermittent ventilation fans and/or heat lamps. Must be hard-wired to qualify
- Solar Tubes:
  - Must be installed in areas occupied during business hours, or central hallways requiring artificial lighting
- Vending machine lighting:
  - LED retrofit

## HVAC

- Hot Water Boilers (condensing, for space heating and domestic water only):
  - Rebates will be offered for new equipment only
  - Must be a replacement of currently operating equipment with an efficiency gain of >15%
  - Boilers must meet minimum efficiency of 92% AFUE
  - Back-up equipment not eligible for rebates
  - Customer must provide CO State inspection report with application
- Air-side Economizers:
  - Economizer shall provide first stage cooling
  - Mechanical cooling will start at second stage
  - Economizer control shall include an outside air temperature sensor
  - Any size air-handling unit will qualify
- Water or Ground Source Heat Pump:
  - Installer must be IGSPHA certified, closed loop only
- Roof Top AC Units:
  - Rebates will be offered for new equipment only
  - Replacement of currently operating equipment
  - New equipment must be currently rated at AHRI standards. For a list of qualified equipment see: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>
  - Equipment must be less than 19.9 tons
  - Equipment less than 5.4 tons must be minimum 14 SEER
  - Equipment between 5.5 and 19.9 tons must be minimum 11.5 SEER
  - Equipment must use a minimum ozone-depleting refrigerant such as R-22, R-123, and R-134
  - Refer to Consortium of Energy Efficiency for listing of Tier 1 and Tier 2 equipment (<http://www.cee1.org/com/hecac/hecac-tiers.pdf>)
- Split Systems:
  - Rebates will be offered for new equipment only
  - Replacement of currently operating equipment
  - New equipment must be currently rated at AHRI standards. For a list of qualified equipment see: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>
  - Equipment must be less than 5.4 tons and must be minimum 14 SEER
  - Condensing unit and coil must both be newly installed to receive a rebate. Efficiencies will be based on the condensing unit and coil combination rated by AHRI.
  - Equipment must use a minimum ozone-depleting refrigerant such as R-22, R-123, and R-134
- Furnace:
  - Rebates will be offered for new equipment only
  - Replacement of currently operating equipment
  - Furnaces must meet minimum efficiency of 92% AFUE with an efficiency gain of > 15%
- Ground or Water Source Heat Pump:
  - Must be installed by IGSHHP certified installer
- Re-Commissioning:
  - Retro-Commissioning of commercial HVAC systems
- Controls:
  - Proper design and installation of HVAC control technologies. Must be hard-wired to qualify

## Advanced Evaporative Cooling

- New cooling equipment make/model/size (tons)
- Existing cooling equipment replaced make/model/size (tons)/age/efficiency
- Equipment must be permanently installed
- Equipment must be indirect, hybrid, or two-stage evaporative cooling unit. Portable coolers or systems with vapor compression backup are not eligible
- A minimum Media Saturation Effectiveness of 85% is required

- Units must be installed with a remote thermostat and a periodic purge water control
- Facility type (same as round 1 lighting list)

### **VFD Air Compressors**

- Equipment must be a new, rotatory type compressor with factory installed VFDs (piston or reciprocating compressors do not qualify)
  - Existing compressor must be a non-reciprocating load/ unload compressor with less than two gallon of storage per cfm of compressor-rated capacity, or modulation with or without unload
  - Back-up equipment not eligible for rebates
- No Loss Air Drains
- Compressor must be one of the following:
  - Load/no-Load with at least 5 gal/CFM of storage
  - Variable Speed Drive compressor
  - Variable Displacement/Capacity compressor
  - Centrifugal compressors in their efficient trim range without any blow-off to atmosphere
  - Drains on inlet modulation or load/no load systems with < 2 gal/CFM storage are not eligible
- Motor and VFDs:
  - Rebates will be offered for new equipment only
  - Motor replacement of currently operating equipment
  - Rebates available for motors and VFDs between 1 and 200 HP
  - Back-up equipment not eligible for rebates
  - Rebates are eligible for pump or fan applications, including pools and spas
  - Customers must scrap the previous motor themselves or have it scrapped by their installer. By signing the application, customers are acknowledging that the motor has been scrapped
  - Motor efficiency must match the NEMA Premium Efficiency criteria

### **Building Envelope**

- Window film:
  - Only windows with eastern, southern, and western exposure are eligible
  - The windows cannot be more than 50% shaded by external elements (such as trees, buildings, awnings etc.) during cooling season
  - The windows must be part of or directly affect the conditioned space
  - Must meet Energy Star criteria
- Air Sealing Measures:
  - Blower door required, must demonstrate 10% reduction in ACHn
- Energy Efficient Windows:
  - Re-glazing or replacement units must comply with IECC 2009 Commercial: See table 502.3
- Insulation:
  - Must meet or exceed IECC 2009 Commercial requirements, section 502

### **Food Service Measures**

- Energy Star Commercial Ice Machines:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/ice\\_machines\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/ice_machines_prod_list.xls)
  - For general information on Energy Star Commercial Ice Machines, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=CIM](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CIM)
- Energy Star Commercial Dishwashers:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/comm\\_dishwashers\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/comm_dishwashers_prod_list.xls)
  - For general information on Energy Star Commercial Dishwashers, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COH](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COH)
- Energy Star Commercial Refrigerators and Freezers:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://downloads.energystar.gov/bi/qplist/commer\\_refrig\\_prod\\_list.xls](http://downloads.energystar.gov/bi/qplist/commer_refrig_prod_list.xls)

- For general information on Energy Star Commercial Refrigerators and Freezers, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=CRF](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CRF)
- Energy Star Commercial Insulated Hot Food Holding Cabinets:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/HFHC\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/HFHC_prod_list.xls)
  - For general information on Energy Star Commercial Insulated Hot Food Holding Cabinets, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COM](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COM)
- Energy Star Commercial Steam Cookers:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/Steamers\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/Steamers_prod_list.xls)
  - For general information on Energy Star Commercial Steam Cookers, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COC](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COC)
- Energy Star Commercial Fryers:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/Fryers\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/Fryers_prod_list.xls)
  - For general information on Energy Star Commercial Fryers, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COF](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COF)
- Energy Star Commercial Griddles:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/comm\\_griddles\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/comm_griddles_prod_list.xls)
  - For general information on Energy Star Commercial Griddles, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COG](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COG)
- Energy Star Commercial Convection Ovens:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/comm\\_ovens\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/comm_ovens_prod_list.xls)
  - For general information on Energy Star Commercial Ovens, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=COO](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=COO)
- Properly Balanced Hood, performed by qualified HVAC technician

## Office Equipment Measures

- Server Consolidation by Virtualization:
  - Rebate is per server removed from use due to consolidation
  - Must submit a copy of virtualization software agreement supplied by vendor and provide proof the consolidated servers have been removed and fully decommissioned
  - Virtualization services hosted off site are not eligible for an incentive
- Energy Star Enterprise Servers:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - For a list of qualified equipment – single configurations, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/enterprise\\_servers\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/enterprise_servers_prod_list.xls)
  - For a list of qualified equipment – families, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/enterprise\\_servers\\_families\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/enterprise_servers_families_prod_list.xls)
  - For general information on Energy Star Enterprise Servers, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=DC](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=DC)
- Energy Star Vending Machines:
  - Equipment must currently be Energy Star qualified
  - Equipment must be new and not refurbished
  - Equipment must include low power control software
  - For a list of qualified equipment, see:  
[http://www.energystar.gov/ia/products/prod\\_lists/vending\\_machines\\_prod\\_list.xls](http://www.energystar.gov/ia/products/prod_lists/vending_machines_prod_list.xls)

- For general information on Energy Star Vending Machines, see:  
[http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=VMC](http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=VMC)
- LED retrofit

## Grocery Measures

- Door gaskets for reach-in or walk-in refrigerators or freezers:
  - Must replace a worn or damaged gasket on one or more actively used door(s) of a reach-in or walk-in cooler or freezer
  - Replacement gaskets must meet the manufacturer's installation specifications regarding dimensions, materials, attachment method, style, compression, and magnetism
  - Applicable to main insulated solid door(s) of walk-in cooler or freezer that open to ambient temperatures
  - Applicable to standard size reach-in glass or solid door(s) of a low or medium temperature display case
- Strip curtains for walk-in coolers or refrigerated warehouse spaces:
  - New strip curtains must be installed on doorways of refrigerated spaces (conditioned to less than 50° F)
  - Rebate is not available for replacement of existing strip curtains
  - Strip curtains on display cases are not eligible
- High-efficiency open or reach-in display cases:
- Low Temperature Coffin to New High Efficiency Reach-in:
  - New case length must be equal to 1/3 the original case length or less
  - Existing case must have shaded-pole fan motors
  - New case (or replacement equipment) must have:
    - T-8 lamps with electronic ballasts or LED lights
    - Electronically or solid state commutated fan motors (ECM/SSC)
    - Low/no anti-sweat glass double-pane or triple-pane doors meeting the requirements of the "Special Doors with Low/No Anti-Sweat Heat on Low Temperature Display Cases" measure
- Low Temperature Reach-in to New High Efficiency Reach-in:
  - New case length must be equal to or shorter than the original case
  - Existing case must have:
    - T-12 lamps, magnetic ballasts
    - Shaded-pole fan motors
    - Standard glass doors (>0.37 amps of door heater current/linear ft. of door)
  - New case (or replacement equipment) must have:
    - T-8 lamps with electronic ballasts or LED lights
    - Electronically or solid state commutated fan motors (ECM/SSC)
    - Low/no anti-sweat glass double-pane or triple-pane doors meeting the requirements of the "Special Doors with Low/No Anti-Sweat Heat
- Medium Temperature Open Case to High Efficiency Open Case:
  - Must replace existing T-12 lamps, magnetic ballasts and shaded-pole motors with new high-efficiency ECM fan motor(s), T-8 lamps, and electronic ballasts
  - Cases must be equipped with high efficiency evaporators that meet appropriate saturated evaporation temperature (SET) conditions
  - Must raise suction temperature set point on the suction group of the replaced case(s) by at least 3°F
- Auto-closers for main walk-in or reach-in doors:
  - Must be applied to one or more actively used insulated door(s) of a walk-in cooler or freezer or one or more actively used glass door(s) of a reach-in cooler or freezer
  - Must be able to firmly close door when door is within one or more inch of full closure
  - The minimum walk-in door perimeter to qualify for rebate is 16 feet. New installations or repairs that include replacement of hard parts qualify
  - Adjustment of existing auto-closers does not qualify for rebates

## Other

- Plug Load Occupancy Sensors:
  - Plug load occupancy sensors may be either passive infrared or ultrasonic
  - Plug load occupancy sensors must be connected to at least 50 Watts of power quality
  - Products with adjustable time delays and low power demand are recommended
  - Equipment connected to this device should not be sensitive to on/off operation. Powering computers off through this device may result in data loss
- Evaporator Fan EC Motor (Also referred to as ECM Motor):
  - Must be installed in a refrigeration application
  - Motor speed shall be adjusted for the required airflow rate for the specific application during installation
- Network Computer Power Management Software:

- Network power management software for desktop computers connected to the company network by a server qualifies
- The software shall be capable of managing power consumption for individual PC's and measuring energy savings
- Sub-Metering:
  - Gas or electric sub-metering of tenant spaces for accurate billing/monitoring purposes
- Energy Monitoring:
  - Gas or electric monitoring equipment for accurate energy monitoring purposes. Requires pre-approval for scope and technology implemented
- Water Conservation:
  - Low-flow toilets – Must be EPA WaterSense compliant
  - Waterless urinals
  - Low-flow showerheads – 1.5 gpm or less
  - Graywater systems – Must be pre-approved for design and scope
  - Irrigation system controls (no existing controls present)
- Entry door air curtains:

### **Renewable Energy**

- Rebates for renewable energy are only available to businesses that have previously participated in the EnergySmart program and implemented energy efficiency measures resulting in at least a 15% reduction in energy consumption – achieving “retrofit” status as defined by the DOE.
- Photovoltaic (PV) Systems:
  - North-facing roofs do not allow full utilization of sunlight and do not qualify
  - There must be minimal shading by trees, buildings and other structures
  - The property must be free from deed restrictions on PV systems
  - All PV systems must carry a five-year warranty from both the manufacturer and the installer, including parts and labor
  - Rebuilt, used, refurbished or portable equipment does not qualify
  - Installer must be NABCEP/COSEIA certified
- Solar Thermal/Evacuated Tubes:
  - Installer must be NABCEP/COSEIA certified
  - R-4 min. on all collector lines
- Pellet Boilers:
  - Minimum 75% efficiency rating