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PSO Business Rebates Unitary HVAC and HVAC Variable Frequency Drives Technical Requirements

General Unitary HVAC Equipment Requirements

- Eligible systems are: electric heat pumps, single packaged units, and split systems.
- Unitary and split system cooling equipment must meet Air Conditioning and Refrigeration Institute (ARI) standards (210/240, 320 or 340/360), be UL listed, and use a minimum ozone-depleting refrigerant (e.g., HCFC or HFC).
- Qualifying split systems must have both a new condenser and a new coil that meets ARI specifications and where the matched system performance (condenser and coil) meets or exceeds the minimum SEER/EER/IEER outlined in the table on this form

Unitary HVAC Rebates
Please see tables on pages 3 and 4 of this document.

Dual Enthalpy Economizer Control Rebates	
Upgrade	Rebate/Unit
Dual Enthalpy (DE) Economizer Control on new HVAC unit meeting minimum requirements (added to the HVAC unit rebate)	\$125
<i>Note: Tons are based on 12,000 BTUH net output per nominal ton.</i>	

General Variable Frequency Drives (VFDs) Equipment Requirements

- It is good engineering practice to ensure that the application of VFDs within a facility does not cause excessive facility harmonic distortion. See IEEE 519 for further information.
- If the cable length between a VFD and controlled motor is greater than 50 feet, additional motor winding insulation on the first few winding or the installation of an LC filter on the output of the inverter may be required.
- The VFD should be grounded in accordance with manufacturer’s grounding requirements for noise as long as their requirement complies with applicable electric codes.
- The facility owner may want to consider VFD startup by manufacturer representative, overcurrent trip protection, and critical frequency lockout.

VFD Equipment Eligibility

- Prescriptive rebates will be provided for the installation of VFDs from 2–200 horsepower for ONLY the HVAC applications listed in the “VFD Rebates” table.
- For chilled water and heating pump installations, at least 75% of pump capacity must be controlled by 2-way valves.
- Rebates for the following HVAC VFD applications must go through PSO’s Custom project application:



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- Forward curve fans with inlet guide vanes;
- Variable pitch vane-axial fans;
- Replacement of a failed VFD;
- VFD used solely for balancing a constant flow;
- Control of existing 2-speed cooling tower fan;
- 2-speed control of a fan or pump;
- Mitigation of oversized motor installation.
- VFDs must be controlled by an automatic signal in response to varying air or water flow. Controlled motors must operate a minimum of 2,000 hours per year.
- Published manufacturer’s information must be submitted with the application to demonstrate compliance for each of the following criteria:
 - 15 Millisecond Minimum Ride-through on the VFD Control at Full Load and No Inertia
 - Auto Restart
 - Flying Restart (Start into Rotating Motor, Speed Search)
 - Under Voltage Trip 85% or Less
 - Minimum 3% In Line Reactor or Equivalent (Choke, Isolation Transformer) Based on Drive Horsepower
 - 95% Minimum Drive Efficiency at Full Load and Full Speed
 - 0.95 Minimum Displacement Power Factor
 - Warranty of at least one year for parts

VFD Rebates							
VFD Installation Type							
BEF = Building Exhaust Fan	MAF = Make-up Air Fan	RAF = HVAC Return Air Fan	HWP = Heat Water Pump				
CTF = Cooling Tower Fan	SAF = HVAC Supply Air Fan	CWP = Chilled/Condenser Water Pump	WHP = WS Heat Pump Circ Loop				
VFD Size and Rebates							
Horsepower	Rebate	Horsepower	Rebate	Horsepower	Rebate	Horsepower	Rebate
2	\$150	7.5	\$500	25	\$1,200	60	\$2,750
3	\$200	10	\$650	30	\$1,400	75	\$3,500
4	\$250	15	\$700	40	\$1,850	Over 100	\$45/HP
5	\$325	20	\$925	50	\$2,300	Over 200	Requires Custom Application

Ready to submit an application? Click [here](#) to begin.



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Unitary HVAC Rebates

Tonnage	Tier 1 Min. Requirement	Tier 1 Rebate	Tier 2 Min. Requirement	Tier 2 Rebate	Tier 3 Min. Requirement	Tier 3 Rebate
Air Conditioners (Cooling Mode) – Unitary and Split Systems						
<5.4	12.2 EER and 15 SEER	\$75/ton	12.5 EER and 15 SEER	\$150/ton	13 EER and 18 SEER	\$200/ton
≥ 5.4 and < 11.25	12.2 EER and 15 SEER		12.5 EER and 15 SEER		13 EER and 18 SEER	
≥ 11.25 and < 20	11.5 EER and 11.7 IEER		12 EER and 12.0 IEER		12.5 EER and 13 IEER	
≥ 20 and < 63.3	11 EER and 11.4 IEER		11.1 EER and 12.6 IEER		11.5 EER and 12.5 IEER	
≥ 63.3	10.4 EER and 10.8 IEER		10.8 EER and 11 IEER		11.0 EER and 12.0 IEER	
Heat Pumps (Cooling and Heating) – Split Systems						
<5.4	12.2 EER and 15 SEER, 8.5 HSPF	\$75/ton	12.5 EER and 15 SEER, 9 HSPF	\$150/ton	13 EER and 18 SEER, 9.5 HSPF	\$200/ton
≥ 5.4 and < 11.25	12.2 EER and 15 SEER, 8.5 HSPF		12.5 EER and 15 SEER, 9 HSPF		13 EER and 18 SEER, 9.5 HSPF	
≥ 11.25 and < 20	11.5 EER and 11.7 IEER, 8.5 HSPF		12 EER and 12.2 IEER, 9 HSPF		12.5 EER and 13 IEER, 9.5 HSPF	
≥ 20 and < 63.3	11 EER and 11.4 IEER, 3.5 COP		11.1 EER and 12.2 IEER, 4 COP		11.5 EER and 12.5 IEER, 4.5 COP	
≥ 63.3	10.4 EER and 10.8 IEER, 3.4 COP		10.8 EER and 11 IEER, 3.7 COP		11.0 EER and 12.0 IEER, 4 COP	
Heat Pumps (Cooling and Heating) – Packaged/Unitary Systems						
<5.4	12.2 EER and 15 SEER, 8.2 HSPF	\$75/ton	12.5 EER and 15 SEER, 8.5 HSPF	\$150/ton	13 EER and 18 SEER, 9 HSPF	\$200/ton
≥ 5.4 and < 11.25	12.2 EER and 15 SEER, 8.2 HSPF		12.5 EER and 15 SEER, 8.5 HSPF		13 EER and 18 SEER, 9 HSPF	
≥ 11.25 and < 20	11.5 EER and 11.7 IEER, 8.2 HSPF		12 EER and 12.2 IEER, 8.5 HSPF		12.5 EER and 13 IEER, 9 HSPF	
≥ 20 and < 63.3	11 EER and 11.4 IEER, 3.5 COP		11.1 EER and 12.2 IEER, 4 COP		11.5 EER and 12.5 IEER, 4.5 COP	
≥ 63.3	10.4 EER and 10.8 IEER, 3.4 COP		10.8 EER and 11 IEER, 3.7 COP		11.0 EER and 12.0 IEER, 4 COP	
Air Conditioners and Heat Pumps (Cooling Mode) – Water and Evaporative						
<5.4	13.0 EER and 13 IEER	\$100/ton	14.0 EER and 14 IEER	\$200/ton	16.0 EER and 18 IEER	\$225/Ton
≥ 5.4 and < 11.25	13.0 EER and 13 IEER		14.0 EER and 15.30 IEER		16.0 EER and 18 IEER	
≥ 11.25	12.0 EER and 13 IEER		14.0 EER and 15.30 IEER		15.0 EER and 17 IEER	
Note: Tons are based on 120,000 BTUH net output per ton.						



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Tonnage	Tier 1 Min. Requirement	Tier 1 Rebate	Tier 2 Min. Requirement	Tier 2 Rebate	Tier 3 Min. Requirement	Tier 3 Rebate
Packaged Terminal Air Conditioner (PTAC)						
< 0.75	11.8 EER	\$30/ Unit				N/A
≥ 0.75 and < 1.0	11.0 EER					
≥ 1.0	10.3 EER					
Packaged Terminal Heat Pump (PTHP)						
< 0.75	11.5 EER and 3.3 COP	\$30/ Unit				N/A
≥ 0.75 and < 1.0	11.5 EER and 3.3 COP					
≥ 1.0	10.1 EER and 3.3 COP					
Note: Tons are based on 120,000 BTUH net output per ton.						