



Introducing the NEW IE5 Motor Rebate Pilot Program

Valid for 2023

New ultra-efficient electric motors are now available for purchase in Vermont. These motors meet the International Electrotechnical Commission (IEC) IE5 efficiency rating, which exceeds the (IE3) comparable efficiency rating of NEMA (National Electrical Manufacturers Association) premium motors. High efficiencies are achieved via a new rotor design and new corresponding controls, while the reliability and serviceability of induction motors are retained.



Image courtesy of ABB

IE5 rated motors are available from multiple manufacturers in NEMA frame sizes ranging from 140T to 215T and speeds of up to 4,000 rpm. Considerable energy savings are possible for purchasers upgrading from NEMA Premium to NEMA Ultra-Premium rated motors when purchasing new equipment. Energy saving estimates for IE5 motors in HVAC applications compared to NEMA Premium motors are listed in the table below.

Horsepower	Incentive	NEMA Premium Efficiency IE3*	Ultra-Premium Efficiency IE5*	Estimated Life Cycle Savings**
1	\$400	85.5	89.3	\$405
2	\$400	86.5	90.7	\$870
3	\$400	89.5	91.4	\$570
5	\$400	89.5	93.0	\$1,710
7.5	\$600	91.7	94.0	\$1,635
10	\$1,000	91.7	94.8	\$2,910
15	\$1,200	92.4	95.6	\$4,440
20	\$600	93.0	95.9	\$5,310

* Based on standard for TEFC (totally enclosed, fan cooled) 1,800 rpm efficiency ratings

** Based on typical HVAC run hours and a cost of 15 cents/kWh with a life cycle of 15 years.

Notes

- IE5 motors require a variable frequency drive (VFD) to operate. Existing VFDs must be capable of permanent magnet motor control to be compatible.
- Savings shown in the table are due to motor efficiency gains only. Additional savings resulting from speed reductions with a VFD are not included in these estimates. Custom incentives and savings analyses may be available for other applications and larger systems, including VFDs.
- See pilot program eligibility requirements below.

Pilot Program Eligibility Requirements

- Motor must be for one of the following applications: HVAC supply fans, return fans, boiler draft fans, WSHP circulation pumps, chilled water pumps, and hot water distribution pumps.
- Eligible IE5 motors are 1 to 20 horsepower only.
- Motors must be new, and VFDs must be compatible or upgraded to be compatible with the new motor. Customers must provide the make and model of their existing VFD when submitting their motor rebate request.
- Efficiency Vermont reserves the right to install meters for savings verification and to access motors pre- and post-motor replacement.

Keys to Success

- Consider using these motors for HVAC pumps and fans that either 1) have an existing VFD or 2) would benefit from having a VFD.
- Ensure drive and motor compatibility with motor and drive manufacturer, reseller, or installer.
- Leverage relationship with Efficiency Vermont for eligibility, savings analysis, rebate, and pre- and post-motor replacement savings verification.

