

C&I Energy Efficiency Program Guidelines

Variable Frequency Drive (Variable Speed Drive)

Following is the minimum information required for energy conservation measures (ECM's) related to Variable Frequency Drive (VFD) installations. Projects applying for incentives related to VFD's must comply with all applicable requirements listed below.

Required Project Documentation

All projects must provide the following documentation:

- A. A detailed scope of work that contains all equipment in the proposed measure and includes existing system operation.
- B. A cost proposal as provided to the customer, including labor and materials
- C. An engineering analysis of the estimated energy savings based on implementation of the proposed measure.
- D. The engineering analysis must include both summer peak kW savings and annual kWh savings.
- E. **Use the existing system operation as the baseline. However, NEMA premium efficiency motors must be used in the baseline if the project involves motor replacement. The analysis must be provided in a datasheet format such as Excel with savings calculations and algorithms.**

Specifications and Eligible Equipment:

1. Installation on HVAC Fan or Pump

- A. The VFD must be installed with automatic control technology.
- B. Installation of the VFD must accompany the permanent removal or disabling of existing flow control devices, such as inlet vanes, bypass dampers, and throttling valves.
- C. The following VFD applications are not eligible.
 - a. Replacement of an existing VFD
 - b. VFD installed in place of multi-speed flow control equipment (e.g., two-speed cooling tower fans)
 - c. VFD installed for the sole purpose of "soft-starting" motors
 - d. If new construction or project triggers code, VFDs required by code are not eligible.
 - e. This measure cannot be combined with the BMS/BAS incentive measure. Unless new VFD's are part of a new BMS upgrade with control strategies and controllers installed. See BMS/BAS requirements.

2. The following VFD applications would require custom analysis:

- a. VFD installed in place of variable pitch blade flow control equipment
- b. VFD installation in a process load or industrial application or process loads
- c. VFD Installation not complying with NYS TRM definition

Required Technical Data

All incentive applications must include the following technical data:

1. Quantity of pumps and/or fans in existing and proposed systems
2. Existing configuration of system i.e. recirculation, parallel pump configurations, lead lag and/or variable speed drive
3. Speed control on each proposed pump or fan
4. Make and model number of proposed fan pumps and motors
5. Annual hours of operation for the pumps or fan
6. Proposed pump or fan performance curves
7. Size of existing and proposed pump or fan motors (hp)
8. Proposed motor efficiency and load factor or Fan/pump flow rate and head