



NEW EQUIPMENT 2024 VFD Incentive



APPLICATION INSTRUCTIONS

Fill out Steps 1-3 and submit to your utility provider. **Do not sign Steps 5-6 until instructed by your utility provider.**

STEP 1 CUSTOMER INFORMATION

Select your utility company: Eversource Liberty NH Electric Co-op Unitil Date: _____

Electric Account #: _____ Natural Gas Account #: _____

Company Name: _____ Contact Person: _____

Phone Number: _____ Contact Email: _____

Installation Address: _____ City: _____ State: _____ Zip: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

STEP 2 CONTRACTOR INFORMATION *(if self-installed leave blank)*

Contractor Company (if applicable): _____ Contact Person: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

Contact Phone: _____ Contact Email: _____

STEP 3 PAYEE INFORMATION

Check Payable to: Customer Contractor Other Payment To: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

LIBERTY CUSTOMERS ONLY – Signature (for payment to Contractor/Other): _____

STEP 4 RETURN APPLICATION TO UTILITY REPRESENTATIVE

Send to your utility representative or email to your utility here:

Eversource: efficiencynh@eversource.com

Liberty: nhsaves@libertyutilities.com

New Hampshire Electric Co-op: solutions@nhec.com

Unitil: efficiency@unitil.com

STEP 5 PRE APPROVAL OFFER

STOP Once you have received Utility Pre-approval notification, sign below accepting incentive offer, payment arrangement, and Program Terms and Conditions.

Utility Signature: _____ Date: _____

Amount Of Incentive: _____ Valid Through: _____

CUSTOMER SIGNATURE: _____ Date: _____

STEP 6 PROJECT COMPLETION

STOP Sign below to indicate that project is completed. Send final signed application to Utility.

Final Incentive calculated based on 'as-installed' conditions.

Utility Signature: _____ Date: _____

CUSTOMER SIGNATURE: _____ Date: _____

Final Project Cost: _____ Final Incentive Amount: _____

Powered by:



NE&C VFD INCENTIVE WORKSHEET

| ITEM | MOTOR HP | FAN OR PUMP ID | AREA SERVED | APPLICATION CODE ¹ | CONTROL PARAMETERS ² | MOTOR EFFICIENCY | ANNUAL HOURS OF OPERATION ³ | INCENTIVE (\$) ⁴ |
|--|----------|----------------|-------------|-------------------------------|---------------------------------|------------------|--|-----------------------------|
| Ex. | 10 | AC-2 | Atrium | HWP | DT | 91% | 5,400 | \$1,000 |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| Vendor quote or proposal required for Incentive. | | | | | | | | TOTAL |

| 1 FAN OR PUMP APPLICATION CODE | | |
|--------------------------------|--|--------|
| CODE | APPLICATION | MAX HP |
| HWP | Heating hot water circulator pump | <7.5 |
| WWP | Circulation pump for water source heat pump loop | <5 |
| FWP | Boiler feed water pump | <15 |
| CWP | Condensate water pump | <7.5 |
| CHWP | Chilled water pump | <7.5 |
| BDF | Boiler draft fan | <25 |
| CTF | Cooling Tower Fan-Single speed only | <5 |

| 4 INCENTIVES | |
|---------------------------|-------------------------|
| HP CONTROLLED BY EACH VFD | MAXIMUM INCENTIVES (\$) |
| 1 – 3 | \$800 |
| 5 – 7.5 | \$900 |
| 10 | \$1,000 |
| 15 | \$1,125 |
| 20-<25 | \$1,575 |

| 2 CONTROLLING PARAMETERS | |
|--------------------------|--------------------------|
| DP | Pressure Differential |
| DT | Temperature Differential |
| OTH | Specify |

| FACILITY TYPE (CHECK ONE) | | |
|---|---------------------------------------|--------------------------------------|
| <input type="checkbox"/> College/University | <input type="checkbox"/> Multi-Family | <input type="checkbox"/> Health Care |
| <input type="checkbox"/> Warehouse | <input type="checkbox"/> Retail | <input type="checkbox"/> Offices |
| <input type="checkbox"/> School K-12 | <input type="checkbox"/> Hotel/Motel | |
| <input type="checkbox"/> Restaurant | <input type="checkbox"/> Grocery | |

¹Forward curve fans with inlet guide vanes are not eligible for a VFD Incentive. Other VFD applications may be eligible for a Custom Incentive.

²VFD's installed are modulated automatically based on downstream information.

³VFD's must operate a minimum of 2,000 hours per year to be eligible for an Incentive.

⁴VFD's on VAV boxes over 10HP are not eligible for Incentives. Motors and drives greater than 20 HP or for industrial purposes should use the custom application pathway.

2024 Variable Frequency Drive New Equipment & Retrofit

Instructions for completing the NE&C VARIABLE FREQUENCY DRIVE Incentive Worksheet

General Notes:

1. A vendor proposal is required for an Incentive. The Variable Frequency Drive (VFD) Installation Information, page 5 may also be required.
2. VFDs offer a method of significantly reducing the energy consumed by fans, centrifugal pumps, and other motor-driven machinery operated under varying loads. For VFD applications not covered here, use the Custom Incentive Application.
3. Systems must have varying load operations such as variable flow, temperature or pressure regulation. Fan and pump operations that would otherwise be regulated by on/off cycling are not eligible for VFD incentives. Systems with constant speed and variable load operations (such as conveyors) are not eligible for VFD incentives.
4. Check with your specific utility for any harmonics or power quality requirements.
5. If power factor correction capacitors are present, they could be adversely affected by the VFD. The customer's design engineer should address this issue.
6. Invoices are required for payment of Incentives.
7. The Incentive, in conjunction with all other sources of funding, cannot exceed the total project cost.

Eligibility Requirements:

1. Eligibility requirements can be found in the "Fan or Pump Application Code" box above.
2. Fans / pumps motors must operate a minimum of 2,000 hours a year.
3. Applicants must demonstrate significant load diversity that will result in savings through motor speed variation.
4. The VFD speed must be automatically controlled by differential pressure, flow, temperature or another method.
5. The Incentive offer is not valid unless signed and dated by the Utility Representative. The Customer accepts the Utilities Incentive offer and agrees to the Terms and Conditions of the Utility by signing in the pre-approval offer block in step 5 of the above form.

2024 Variable Frequency Drive New Equipment & Retrofit

VFD Installation Information Form

Check with your utility representative to determine if the attached VFD Installation Information Form needs to be completed and submitted.

Pre-Installation:

1. Review the Incentive eligibility requirements.
2. Review the proposed equipment specifications to confirm it meets the minimum efficiency requirements.
3. Provide to the utility representative the manufacturer's equipment specifications and confirm that it meets the minimum efficiency requirements:
 - a. Motor HP (size) horsepower
 - b. Fan or Pump ID identification (example: AC-2, air handler #2, chilled water pump #1)
 - c. Area Served - location (example: Atrium, Lobby, Cafeteria, 2nd floor offices)
 - d. Fan or Pump Application Code (Table 1 on the VFD worksheet)
 - e. Verify the fan is not a forward curve with inlet vanes type.
 - f. Annual Hours of Operation

If controlled HP falls between two listed HP values, interpolate to determine the maximum Incentive. Show your calculations.

NE&C VFD INCENTIVE WORKSHEET

| Item | Motor HP | Fan or Pump ID | Area Served | Application Code ¹ | Control Parameters ² | Motor Efficiency | Annual Hours of Operation | Incentive ⁴ (\$) |
|------------|------------------|----------------------------------|-------------------------|--|--|---|---|--|
| <i>Ex.</i> | <i>10</i> | <i>AC-2</i> | <i>Atrium</i> | <i>SFA</i> | <i>DT</i> | <i>91%</i> | <i>5,400</i> | <i>\$1,000</i> |
| | Motor name plate | Equipment identification or name | Location of pump or fan | Refer to table 1 on the Incentive Form | Refer to table 2 on the Incentive form | Refer to Motor Manufacture's specifications | State Annual Hours (> 2,000 hours / year) | Refer to table 4 on the Incentive form |

Post-Installation:

Utility Representative must verify that:

1. The equipment including the VFD, motor and line reactors has been installed and is operable.
2. The VFD equipment matches the Incentive application information. If the equipment has changed from what was approved for the initial Incentive offer, the substituted equipment/material specifications must be submitted and reviewed by the utility to verify compliance with technical requirements and approved before an Incentive is considered.
3. Verify that the prior control is disabled
 - a. inlet or outlet dampers are fully open or removed
 - b. inlet or outlet valves are fully open or removed, bypass loop valved off or removed
4. Observe operation of drive, motor, and driven equipment
5. If possible, observe variation in drive speed with changing operating conditions
6. The invoice or proof of payment has been submitted
7. The Utility Representative & Customer have signed & dated the post installation inspection block on the Incentive form.

2024 Variable Frequency Drive New Equipment & Retrofit

VFD Installation Information Form

Equipment Information

Item ID: _____ (Reference number found in the Incentive worksheet table)

Fan or Pump ID(s): _____ (Example: FW-1, Feedwater Pump #1; CW-1, Condenser Water Pump #1)

VFD Application: _____ (Use list of applications from page one, or describe other)

Building Type: Office Hotel/Motel Healthcare Elementary/High School College/University
 Warehouse Restaurant Manufacturing Other? _____

Type of area(s) served by fan(s) or pump(s): _____

Equipment served by the fan (s) or pump (s): _____

If fan, note type: _____ (centrifugal, forward curve, backward curve, axial, etc)

Fan or Pump Nominal HP: _____ (if multiple motors, list individual HP's)

Nameplate motor efficiency(s) _____

Fan or Pump Manufacturer: _____

Model: _____

Full Load Design Conditions: Flow (CFM, GPM) _____ Pressure (inches static, feet of water, PSI, other?) _____

Existing Controls: _____ (discharge damper, inlet guide vanes, outlet control valve, bypass valve, etc.)

Existing setpoint: _____ (inches static, feet of water, PSI, other?)

Operating Hours

The fan or pump operates the following hours: (Example: 0600 to 1800)

| | |
|--------------------------|--------------------------|
| Summer: | Winter: |
| Weekdays _____ to _____ | Weekdays _____ to _____ |
| Saturdays _____ to _____ | Saturdays _____ to _____ |
| Sundays _____ to _____ | Sundays _____ to _____ |

Number of shifts per weekday: _____ Number of shifts per weekend day: _____

Motor Load

Option 1: (retrofit): Measured input power under full load: _____ kW, (true RMS power) _____ Power Factor

Option 2: (retrofit): Measured current and voltage under full load: _____ Amps _____ Volts
 Load calculation = _____ volts X _____ amps X _____ PF = _____ kW

Option 3: (retrofit or new): Estimated Fan or Pump Load: _____ %, Estimated Power _____ kW

If estimating load, provide description, assumptions and formula used to calculate power: _____

Proposed Operations

The proposed VFD will be automatically controlled to maintain the following setpoints:

Flow (CFM, GPM, other?): _____ Pressure (inches static, feet of water, PSI, other?) _____

Other? (describe): _____

ESTIMATED VFD SPEED IN FUTURE OPERATIONS

| % LOAD | SUMMER | | WINTER | |
|---------------|-------------|-------------|-------------|-------------|
| | Week-day | Week-end | Week-day | Week-end |
| 90% to 100% | | | | |
| 80% to 90% | | | | |
| 60% to 80% | | | | |
| 20% to 60% | | | | |
| Off | | | | |
| TOTALS | 100% | 100% | 100% | 100% |