



NEW EQUIPMENT & RETROFIT 2023 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: _____

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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	SFA	DT	91%	5,400	\$1,000	
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
Vendor quote or proposal required for Incentive.								TOTAL	

¹ FAN OR PUMP APPLICATION CODE		
CODE	APPLICATION	MAX HP
SFA	Supply fan on supply air handler	10
SFP	Supply fan on VAV packaged HVAC unit	10
RFA	Return fan on return air handler	10
RFP	Return fan on VAV packaged HVAC unit	10
BEF	Building exhaust fan	20
PEF	Process exhaust fan	20
HEF	Fume hood exhaust fan & makeup air fan	20
HWP	Heating hot water pump	20
WWP	Circulation pump for water source heat pump loop	20
FWP	Boiler feed water pump	20
CWP	Condensate water pump	20
CHWP	Chilled water pump	20
BDF	Boiler draft fan	20
HYP	Hydraulic pump	20
WTP	Water supply or wastewater treatment pump	20
RAS	RAS pump in wastewater treatment plant	20
CTF	Cooling Tower Fan	20
PCP	Process Cooling Pump	20

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

² CONTROLLING PARAMETERS	
DP	Pressure Differential
DT	Temperature Differential
OTH	Specify

³ 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.



2023 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.

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2023 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.

2023 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%