



VARIABLE FLOW PUMP AND FAN SYSTEMS

PROGRAM GUIDE

DESIGN WITH ENERGY EFFICIENCY IN MIND.





The HVAC & Controls Program can help you lower your energy bills and reduce your maintenance costs.

When you upgrade to eligible energy efficient variable flow pump and fan systems, we offer rebates that:

- cover up to 100% of the product and installation costs, including taxes.
- may be adjusted based on the energy savings produced by the project.
- are based on a minimum 1,600 annual hours of operation.

Before you get started, please note that:

Efficiency Manitoba must approve all applications prior to the purchase and installation of variable flow pump and fan equipment.

Electrical permits are required for all projects and will be requested before rebates are issued.

The HVAC & Controls Program offers financial rebates for installations of eligible energy efficient variable flow pump and fan systems.

If you have any questions about the program, please contact us.

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HVAC@EFFICIENCYMB.CA
EFFICIENCYMB.CA/VFS



IS YOUR PROJECT ELIGIBLE?

Review these seven areas to be sure your project qualifies:

1. The applicant

The customer must be a Manitoba Hydro account holder eligible for commercial general service electricity rates. We may accept applications from agricultural customers billed at residential electricity rates.

2. The project

The variable flow pump and fan system(s) must be used for commercial or agricultural HVAC applications.

The variable flow pump and fan system(s) can be applied to replace one (or more) of the following:

- i. fan, duct static pressure or air flow control using inlet vanes
- ii. fan, duct static pressure or air flow using an inlet damper assembly
- iii. fan, duct static pressure or air flow control using other variable flow method
- iv. pump, pipe pressure or flow control using a bypass valve arrangement
- v. pump, pipe pressure or flow control using an inline throttling (e.g. bleed pass) valve arrangement
- vi. pump, pipe pressure or flow control using other variable flow method

Contact Efficiency Manitoba for any applications not listed.

The facility electrical systems:

- i. are not equipped with power factor-correction-capacitors, or
- ii. are equipped with power factor-correction-capacitors and there are no harmonic resonance concerns, and
- iii. meet Power Quality interconnection requirements details at:

https://www.hydro.mb.ca/your_business/benchmarking/power_quality/PQIR.pdf

3. The products

The HVAC pump or fan must be used in a variable flow (variable torque) application or a constant flow (non-constant torque) application. Constant torque (e.g. positive displacement pumps) are not eligible for the program.

Each pump or fan that will be fitted with a VFD and inverter duty motor (unless one is already installed) must meet the following requirements:

- i. motor nameplate indicates rating of 100 HP or less
- ii. motor is inverter duty rated, and
- iii. motor is rated for use with VFDs

The VFD is:

- i. a 3 phase electrical device (single phase VFDs are not eligible), and
- ii. sized to adequately support the planned number of motors, and
- iii. supplied with overload, fault, single phase and voltage imbalance protections that will be enabled
- iv. provided with:
 - DC Bus Chokes (built-in or other), or,
 - 3% Line Reactor(s), or
 - 5% Line Reactor(s), and
 - harmonic filter

- v. Recognized as certified for use in the Province of Manitoba by the Office of the Fire Commissioner (or more) of the following Certification Bodies list at:

https://firecomm.gov.mb.ca/docs/ofc_012_recognized_labels_elec_dec_2018.pdf



IS YOUR PROJECT ELIGIBLE?

4. The installation

The VFD will be connected to:

- i. unconditioned regular power only, or
- ii. emergency generated power with sufficient capacity capable of delivering suitable harmonic VFD load output, or
- iii. emergency UPS power with sufficient capacity capable of delivering suitable harmonic VFD load output

The installation distance between all new VFDs and their connected motors will be:

- i. less than 25' or
- ii. when greater than 25' shall use a regular twisted power cable and at least one of the following VFD manufacturer recommended filter options for the outgoing power from the VFD:
 - dv/dt filters, or
 - sine wave filters, or
 - 3% Line Reactor(s), or
 - 5% Line Reactor(s).

The final electrical installation must comply with current Canadian Electrical Code requirements. Efficiency Manitoba will request proof of electrical permit issuance at project completion prior to releasing rebates for the project.

The operating hours of the installation VFD and motor must be a minimum of 1,600 hours per year.

5. The supplier

Participating suppliers must be [registered suppliers](#) in good standing with Efficiency Manitoba.

A supplier is any business supplying or installing the qualifying variable flow pump and fan HVAC equipment – this may include contractors, consultants, installers, vendors, and retailers.

6. The installer

An installer is any business qualified to install, set up, configure, program, and support the qualifying variable flow pump and fan HVAC equipment over the entire duration of the product warranty period.

7. HVAC Controls contractor

HVAC Controls contractors can be a good resource for supply and installation of qualifying variable flow pump and fan equipment.



HOW TO PARTICIPATE

To qualify for any rebates, you must have written approval of your application from Efficiency Manitoba before the equipment is purchased or installed.

1. Apply

Consult an HVAC Controls contractor to determine which variable flow pump and fan applications will benefit you most.

Working with your HVAC Controls contractor, ensure you meet the applicant, project, product, installation, and supplier requirements.

Have your HVAC Controls contractor apply by logging into [myEM](#) and completing the application.

An Efficiency Manitoba representative may conduct a pre-inspection of the facility to verify the existing HVAC system.

Note: Applications for this program are to be completed by the contractor on the customer's behalf. It is the customer's responsibility to ensure that the application is completed correctly and received by Efficiency Manitoba.

2. We approve

Efficiency Manitoba will send an approval email to the applicant. Do not purchase any materials or start the project until you have received this approval.

After you receive approval, equipment must be installed within one year.

3. Complete your project

After the new system is installed and operational, log into [myEM](#) and submit your itemized invoicing detailing:

- Date of purchase
- Vendor name
- Customer name
- Install address
- Manufacturer name and model of each product
- Product quantities
- Per unit product costs and total, separate from design
- Labour
- Electrical permit number

An Efficiency Manitoba representative may conduct a post-inspection of the facility to confirm that all products were installed in accordance with the approved application.

4. We pay the rebate

Once all completion paperwork is received by Efficiency Manitoba, the rebate will be adjusted based on invoicing, inspection, and any project changes.

Efficiency Manitoba will issue a cheque or deposit to the customer.



REBATES AVAILABLE

VARIABLE FREQUENCY DRIVES (VFD) USED WITH INVERTER DUTY MOTORS (IDM)

Fans	\$50 per horsepower	up to 100 HP
Pumps	\$70 per horsepower	up to 100 HP

VARIABLE SPEED DRIVES (VSD) AND PERMANENT MAGNET MOTORS (PMM)

Fans	\$70 per horsepower	up to 100 HP
Pumps	\$100 per horsepower	up to 100 HP

APPLY ONLINE AT [EFFICIENCYMB.CA/VFS](https://efficiencymb.ca/vfs)

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