

DON'T BE AN ENERGY DINOSAUR



Source: CEE/StockPhoto

MODERNIZE YOUR MOTOR SYSTEMS

Running motors at full speed when it's not required is a waste of energy and money. A variable frequency drive (VFD) is a widely used device that reduces motor speed to match a driven load by controlling the frequency (Hz) and Volts/Hz ratio supplied to the motor.

SHRINK THE ELECTRICITY PIE

A whopping 96% of the cost-of-ownership of a motor is the cost of electricity. When implemented correctly, VFDs reduce these costs and can provide other benefits as well, such as:



Electricity is the vast majority of motor life cycle cost, a cost not usually factored into operating considerations.

- Improved process controls
- Bypass capability in an emergency or failure
- Protection from overload currents
- Noise reduction
- Extended motor equipment life

Many market segments are already benefiting from the energy and cost savings of VFD technology, including:

- Commercial buildings
- Food processing
- Grocery stores
- Cold storage
- Hospitals
- Schools and universities
- Industrial processes
- Water and wastewater treatment
- Irrigation

If your facility routinely moves air or water, it is worth the time to assess the costs and benefits of installing a VFD

SAVINGS POTENTIAL BY APPLICATION

MATCH CORRECTLY TO ACHIEVE OPTIMAL SAVINGS

VFDs must be paired correctly with existing equipment in order to achieve optimal electricity savings.

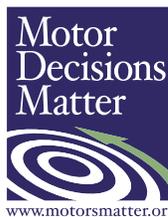
Generally, VFDs have lower savings potential in the following applications:

- Constant torque
- Constant speed
- High static pressure installations
- Soft start only applications

LET US HELP YOU GET STARTED

Many utilities offer technical and financial assistance for VFDs on fans and pumps used in HVAC, chillers, pumps, and many other applications. As a next step:

- Ask your local utility, motor service center, or motor distributor to help identify opportunities for VFDs in your plant or facility
- Visit the MDM website (www.motorsmatter.org) to find VFD case studies, assessment tools, and links to utility programs throughout the US and Canada



Motor Decisions MatterSM is a sponsored project of the Consortium for Energy Efficiency. For more information, visit www.motorsmatter.org or email mdminfo@cee1.org

HIGH

- Centrifugal fans and pumps
- Blowers
- Axial fans
- HVAC systems

Lower speed operation results in significant energy savings, as shaft power of the motor theoretically drops with the cube of the rotational speed

MEDIUM

- Mixers
- Conveyors
- Compressors

Lower speed operation saves energy in direct proportion to the rotational speed

LOW

- Machine tools
- Lathes
- Milling machines
- Punch presses
- Printing presses

No energy savings at reduced speeds. Nonenergy benefits that may result in cost savings can be realized

CASE STUDY:

Layfield Group



Source: BC Hydro

Layfield Group, a large plastic manufacturer, worked with utility BC Hydro in 2012 to improve the efficiency of its facilities. Using

a BC Hydro incentive program, Layfield Group replaced several single-speed air compressors with one variable frequency drive model. The VFD model was projected to save 120,000 kWh of energy and about \$7,400 per year.

For more case studies about VFDs and reduced energy usage and electricity costs, visit the **MDM website** at www.motorsmatter.org.