



## TEAM UP FOR ENERGY SAVINGS

### Fans and Pumps

Saving the environment and saving money can be as easy as replacing a worn-out drive belt. That means you're on the front line for energy-saving opportunities. Team up with co-workers to spot ways to reduce the energy your fans and pumps use – it's good for the environment and good for your bottom line.

#### Get moving with energy savings

Check out your fans and pumps. Proper maintenance will save energy by ensuring that air or water flows efficiently through your systems. Pump up the savings even more by properly sizing electric motors and drives. To conserve energy and cut costs, consider three main areas:

#### 1. Housekeeping

- › Inspect and maintain fans and pumps. Implement a program of inspection and prevention maintenance to minimize component failures.
- › Check and adjust belt drives regularly.
- › Clean and lubricate fan components.
- › Correct excess fan noise and vibration.
- › Clean or replace air filters regularly.
- › Clean ductwork, and fix duct and component leaks.
- › Maintain clearance tolerances at pump impellers and seals.
- › Clean pump impellers, and repair or replace them if eroded or pitted.
- › Shut down fans and pumps when they aren't needed.

#### 2. Low-cost opportunities

- › Streamline air-duct connections to reduce losses.
- › Optimize airflow, by balancing dampers in their maximum open positions for balanced air distribution.
- › Replace packing-gland pump seals with mechanical seals, which require far less pump power.
- › Trim the pump impeller to match system flow rate and head requirements.

#### 3. Retrofits

- › Install variable speed motors and drives so the flow of air or water can be adjusted to changing requirements.
- › Replace outdated units with more efficient and correctly sized equipment.
- › Consider decentralizing a major system into sub-systems that serve their own specific requirements.
- › Consider controlling the ventilation system with ultrasonic occupancy sensors – this saved one manufacturer 50 percent of operating costs.
- › Consider installing a computerized energy management control system.
- › Consider installing variable voltage, variable frequency inverters to allow motor speed to be continuously varied to meet load demand – power savings range from 30 to 60 percent. For more information on variable frequency drives, see Natural Resources Canada's Variable Frequency Drive video at: [oee.nrcan.gc.ca/industrial/equipment/vfd/vfd-video.cfm](http://oee.nrcan.gc.ca/industrial/equipment/vfd/vfd-video.cfm).

