According to the U.S. Department of Energy (USDOE), industry consumes 20% of our country's electricity—*at over $30 billion a year*. Within this national bottom line, USDOE estimates $3 billion could be saved annually through improvements to motor-driven systems.[1]

Have you taken steps to capture a piece of these savings from your systems? Here are some suggestions for carving out a big slice of the pie: If you haven't already done so, start with the basics. Identify opportunities to replace older, low-efficiency motors with higher-efficiency replacements, such as NEMA Premium® or greater. When considering these upgrades, remember that while a specific motor is now (or always has been) driving a particular process in your plant, it might not be the best size for the application (and could be consuming more energy than necessary). Ensuring the right size motor, in addition to selecting the most appropriate nameplate efficiency, is an important first "cut."

Just as there is more than one ingredient in your motor-systems pie, savings can be found through more than just improvements to motors within the system. There often are opportunities to capture large savings by ensuring that you have all of the right equipment to achieve your application objectives and that all the equipment works together efficiently. For example, as discussed in previous installments of this column, some applications—*i.e., those that don't need to operate constantly at full speed or those powering centrifugal equipment like pumps and fans*—can obtain significant savings through a retrofit with an adjustable speed drive (ASD), also known as a variable frequency drive (VFD) or variable speed drive (VSD).

Sweet!

Engineers at Boeing's Renton manufacturing facility realized energy savings by first focusing on their motors and then expanding to consider the full motor-driven system. Their first step was to create an extensive motor inventory of all active and spare motors. The next step was to consider the objectives that each system was designed to achieve. For example, the facility had recently reduced its airflow requirements, which led to the operation of many unneeded—*and inefficient*—fans. As a result of its motor inventory and system assessment, the Renton facility was able

to identify opportunities for motor upgrades, ASD retrofits and decommissioning of systems that were no longer necessary, all of which led to an especially sweet slice of savings: 136,984 kWh or $16,578 annually.[2]

More information to support assessing and finding efficiency in motor-driven systems is available on the Motor Decisions MatterSM (MDM) Website at www.motorsmatter.org . Among other things, you'll find the MDM Motor Planning Kit that outlines simple steps in developing an effective motor management program. The VFD section of the Helpful Resources page includes details on identifying the conditions when these drives are appropriate. A visit to the MDM Website is a great way to get started on serving up your just desserts: That's a sizeable helping of available motor-systems energy savings!
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1. USDOE, 2008. (http://www1.eere.energy.gov/industry/bestpractices/pdfs/motor.pdf)
2. Northwest Energy Efficiency Alliance, 2004. (http://www.motorsmatter.org/case_studies/boeing.pdf)

For more info, enter 12 at www.MT-freeinfo.com

The Motor Decisions Matter (MDM) campaign is managed by the Consortium for Energy Efficiency (CEE), a North American nonprofit organization that promotes energy-saving products, equipment and technologies. For further information, contact MDM staff at mdminfo@cee1.org
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