Motor Summit 2008 advances energy-efficiency efforts

Mandatory minimum energy performance standards (MEPS) and applications of energy-efficient electric motor systems, including drives, pumps, fans, compressors, and material handling equipment, were among discussions at Motor Summit 2008 (MS '08).

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Zurich, Switzerland – Going well beyond its title, Motor Summit 2008 (MS `08) publicized new developments in energy-efficient electric motor systems—including drives, pumps, fans, compressors, and material handling equipment—and promoted their application. Held here Nov. 24-26, MS `08 drew some 130 motor system experts and professionals from research, government, and the private sector representing 21 countries.

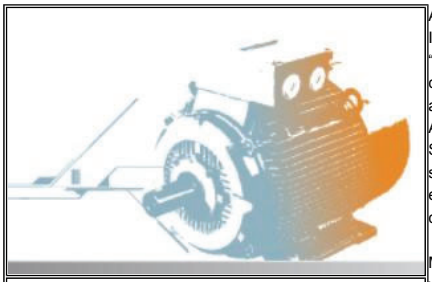
The conference included updates on national energy-efficiency programs and activities from Australia, Austria, Brazil, China, Germany, India, and Switzerland.

One recurring theme was the need for wider change from voluntary to mandatory minimum energy performance standards (MEPS). Voluntary regulations haven't been effective, especially for electric motors where OEMs play a dominant role in sales. Making MEPS mandatory is drawing much effort. "Europe is struggling to make efficiency standards mandatory," said Conrad U. Brunner, moderator of MS `08 and director of **A+B International**, a Zurich-based consultancy.

After seeing successful mandatory MEPS efforts in the U.S. and several other nations, the European Commission (EC) intends to issue MEPS in 2009 for motors, pumps, and fans under its Ecodesign Energy-using Products (EuP) directive. However, effective dates are not expected before 2011. Regulation of industrial motors is being widened to the 0.75-375 kW (1-500 hp) range. Ecodesign will encompass all technical and economic issues, even packaging and end-of-life recycling.

Smaller motors (<0.75 kW) are also entering the efficiency picture because contrary to earlier belief, they're found to be running 2,000 hours per year in significant numbers. Performance standards are coming for these motors.

The EuP directive has widened coverage to 20 products including pumps, fans, and circulators—with more to come, such as standby power systems and street/office lighting. "We need to act faster and widen the directive's coverage plus include variable-frequency drive (VFD) issues as well," said Ismo Grönroos-Saikkala, of the EC's Unit for Energy Efficiency of Products.


International Energy Agency's implementing agreement "Efficient Electric End-use Equipment" (IEA 4E) has 10 national members. IEA 4E recently defined a Motor System Annex at **www.motorsystems.org** to pursue new efficiency projects.

Another significant development launched in 2008 is the International Energy Agency's implementing agreement **"Efficient Electric End-use Equipment" (IEA 4E),** which currently has 10 national members. IEA 4E recently defined a **Motor System Annex** to pursue new efficiency projects. At the end of 2008 it took over the valuable groundwork of SEEEM (Standards for Energy Efficiency of Electric Motor systems)—a community of practice that had promoted energy-efficient systems since 2006. Conrad Brunner continues as operating agent for IEA 4E.

Motor efficiency testing, a contentious issue because of various methods used worldwide, has coalesced around the established U.S. test method (IEEE 112B). "Global harmonization has adopted the U.S. method in **IEC** standard 60034-2-1 with only minor alterations," said Dr.-Ing. Martin Doppelbauer, convener of working group 31 IEC TC2.

Electric drives also produce losses, which can become significant at reduced speeds where VFDs are meant to operate. However, published VFD efficiencies at other than rated power are scarce. A presentation by Pierre Angers, engineer at Hydro-Québec, described testing of five makes of VFDs running three motor sizes (10, 50, and 100 hp) at various loads. The work is basis of a test protocol for VFD efficiency and a proposed Canadian standard.

Paul Waide, senior policy analyst, Energy Efficiency & Environmental Division of IEA, stated that optimization of electric motor driven systems could account for much greater energy savings than current average global production from renewable electricity sources (except hydroelectric). Other high-profile, low-carbon electricity sources, such as nuclear and carbon capture/storage are also much more costly and controversial, Waide explained. "Yet all these options benefit from far greater public recognition and policy stimuli than enhanced energy efficiency in electric motors."

Events like Motor Summit provide one way for policy makers, product developers, and eventually the public to increase their awareness of savings potential in energy efficiency and sustainability. Look for further coverage of Motor Summit `08 from *Control Engineering*.

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