Global Motor Energy Efficiency Program Promotes Global Harmonization

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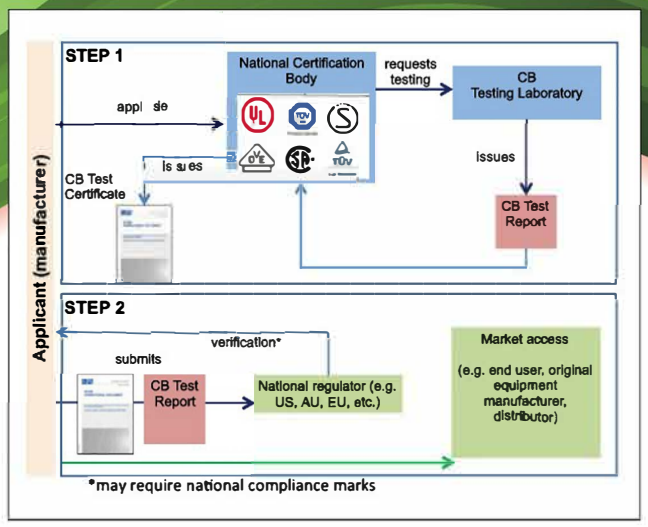

Figure 1 *A manufacturer begins the assessment by applying to a participating NCB operating in the IECEE CB Scheme (NCB) for a GMEE Test Certificate (Step 1). The NCB works with one of its associated CB Testing Laboratories (CBTLs) to conduct complete testing and evaluation of the manufacturer's product to determine conformity with IEC standards 60034-2-1 (Efficiency test standard) and 60034-30-1 (IE Efficiency level ratings). If the product is found to be in compliance with the manufacturer's declared IE level, the CBTL issues a GMEE Test Report, which is the basis for the NCB to issue a CB Test Certificate (Step 2). In many cases, per a manufacturer's request, the NCB might also issue its own national approval or certification for the product. In the second step, the manufacturer can then present the GMEE Test Report and GMEE Test Certificate directly to the Regulatory authority, its customer, or other participating NCBs in order to obtain additional certifications.*

Electric motors driving pumps, fans, compressors, and other machines use an estimated 45 percent of global electricity. Through higher motor efficiency and the use of optimized motor systems, electricity savings of 20–30 percent can be achieved.[1]

Many countries have established mandatory minimum energy performance standards (MEPS) for electric motors with efficiency requirements. Over time, several other countries will likely introduce MEPS for motors, and their respective MEPS are becoming more stringent. While MEPS for electric motors for the U.S. are based on the NEMA MG 1 standard, many other countries have adopted the motor efficiency classification in IEC 60034-30-1 and the efficiency test method IEC 60034-2-1.

The NEMA Motors and Generators Section (1MG) committees have worked closely with the IEC during the past decade to ensure the efficiency classification and test method are technically aligned. Unfortunately, even with the classification and test method closely aligned, the process and requirements for certification and compliance vary greatly from country to country, including test standards, laboratory accreditation, sampling, test process, and labeling.

To satisfy global demand, electric motors and their driven equipment are being manufactured in and shipped across many countries worldwide. Differences in national regulations and customs import requirements create technical barriers to trade. In addition, lack of effective MEPS enforcement and verification processes weaken the trust in motor markets and quality products.

To address these issues and to assist in the global growth of energy-saving motor-driven systems, NEMA and IECEE[2] are pleased to introduce the globally harmonized Global Motor Energy Efficiency Program (GMEE).

One Product, One Test, One Certificate

GMEE is based on the IECEE Certification Bodies' (CB) Scheme, which is based on international IEC standards and might also account for national differences in these standards.

[1] Paul Waide, Conrad U. Brunner, et al., "Energy-Efficiency Policy Opportunities for Electric Motor-Driven Systems," IEA Working Paper, 2011, Paris

[2] IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components, *www.iecee.org*

The main objective of the scheme is to realize the concept of "one product, one test, one certificate" through harmonization of national standards with international standards.

The IECEE has more than 50 member countries, nearly 80 participating National Certification Bodies (NCBs), and close to 500 CB Testing Laboratories (CBTLs). NCBs are assessed on site to verify their compliance with ISO/IEC 17065 and the IECEE basic rules, rules of procedure, and operational documents.

This assessment follows the peer-assessment process manned by teams composed of other NCBs to ensure that each member NCB has the necessary technical capability, competence, and experience. CBTLs are similarly peer-assessed for compliance with ISO/IEC 17025, as well as IECEE basic rules, rules of procedure, and operational documents.[3]

The GMEE program is developed on a strong foundation:

- one recognized motor efficiency test method (IEC 60034-2-1)
- one test report format
- common certification process based on the international IECEE/CB Scheme

The GMEE Operational Document (OD 2057) was approved by the management committee of the IECEE in June 2015. Figure 1 illustrates the process for obtaining national certification for a GMEE product.

GMEE Next Steps

NEMA and IECEE are committed to the success of GMEE through effective collaboration between motor manufacturers, national/regional regulators, certification bodies, and customers. A successful GMEE program will provide significant benefits for manufacturers wanting to export products to countries that participate in this IECEE scheme. While participation is voluntary, it is designed to address global market access issues for energy-efficient electric motors in established and emerging countries.

For more information, see *www.iecee.org* or contact *dan.delaney@regalbeloit.com*

Mr. Delaney chairs the Motor and Generator Section, Motor and Generator Management Committee, and Motor and Generator Section Affairs Policy Committee.

[3] IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System), Rules of Procedure—Part 1: Scheme of the IECEE for Mutual Recognition of Test Certificates for Electrotechnical Equipment and Components (CB Scheme)

Rolling out GMEE

GMEE has been a U.S. motor industry-led initiative spanning several years. Meeting at NEMA in October in conjunction with the roll out of the IECEE GMEE Program were (from left) John Caskey, CEM, NEMA Assistant Vice President, Operations; Bill Hoyt, NEMA Industry Director; Kerry McManama, IECEE Executive Secretary and COO; Joel Solis, Secretary General, CANENA, and NEMA Conformity Assessment Manager; Frans Vreeswijk, IEC General Secretary and CEO; Ken Gettman, NEMA International Standards Director; and Gene Eckhart, NEMA Senior Director for International Operations. Photo by Pat Walsh