

Report on Engagement with International Standardisation Organisations

To implement some of the increasing number of policy conclusions resulting from 4E research will require changes to, or the development of new, technical testing and performance standards. For globally traded products, improving the relevant international standards is likely to have most impact as well as promoting greater harmonisation. For this reason, the 4E Executive Committee agreed to step up activities in respect to international standardisation as one element in the Communication Strategy adopted in May 2011.

As a first step towards developing a strategic approach to this work, the Operating Agent together with the Annex OAs and the Chairs of 4E have prepared a draft discussion document (attached). In considering the way forward, the Chair, Vice-chairs and Operating Agent have suggested the following approach:

1. That the draft discussion document should be circulated to ExCo delegates prior to the Stockholm ExCo.
2. That the issue is further discussed at the 4E ExCo in Stockholm under the Communications Strategy.
3. That delegate views should be sought on the option of convening a special meeting of interested organisations, included those listed in Section 5 of the discussion document together with representatives from 4E and standardisation organisations, amongst others.
 - The aim of this meeting would be to initiate a dialogue between 4E (and potentially other) governments and international/regional standardisation organisations in order to clarify the issues and the barriers, with a view to gaining further insights into the future role that 4E should take.
4. Consideration should be given to whether this meeting could be held in 2012, and if so, whether it could be located alongside another event with similar stakeholders.

4E Discussion Document

4E and Standardisation Organisations

1 Introduction

4E's mission to support the development and implementation of energy efficiency policies for electrical equipment necessitates an interaction with organisations involved in the development of product test methodology standards. Although 4E does not currently have direct representation on any test standards making committees, information produced by 4E Annexes has been (and is being) used to influence some test standards through the direct involvement of representatives of 4E member countries on certain technical committees.

In order for governments to implement some of the increasing number of policy conclusions resulting from 4E research will require changes to technical standards. Removing impediments to effective energy efficiency policy implementation in technical standards is a complex and time-consuming task, sometimes beyond the resources and expertise of individual governments. However, acting as a group of governments co-ordinated under the banner of 4E will reduce the resources required by each individual government while also presenting a stronger position that is more likely to succeed.

For this reason, the 4E Executive Committee agreed to step up activities in respect to standardisation as one element in the Communication Strategy adopted in May 2011. This paper presents the key issues to be addressed in planning 4E's involvement in this field, and presents some of the options available for activities to increase 4E's impact on standardisation.

2 4E objectives

A precursor to any approach to standardisation organisations is to clarify 4E's objectives, i.e. what are we asking these standardisation bodies to do. The specific requirements derive from the work in the all the current Annexes and from priorities that may be set by the ExCo.

It should be noted that in many instances, experts involved in 4E Annexes are already involved in some standardisation organisations. Therefore, as part of any co-ordinated approach to standardisation organisations, 4E should identify a list of who is active in this area and develop a clear understanding of what measures each Annexes would like to see adopted or considered.

In addition to these specific desires, 4E's over-arching message for standardisation organisations is that our governments wish to see:

- The development of international energy performance test methodologies with global application that are sufficiently repeatable and reproducible (where these currently do not exist) to support the implementation of policy measures by national governments or similar.

This will greatly assist in the move towards harmonised or aligned national product policies for energy efficiency, which can bring the following benefits:

- Making it easier and cheaper for governments to copy existing protocols rather than invest in new policy development processes and technical analysis.
- Increasing the opportunity for international collaboration amongst governments on technical analysis to understand how energy performance can be optimised.
- Reducing the number of tests required for globally traded products and therefore cutting compliance costs for industry, and enforcement costs for governments.

- Enabling the possible introduction of internationally recognised performance certification schemes, such as the equivalent of the IEC's existing IECEE CB scheme which already does this for the safety of these (same) products.
- Facilitating international benchmarking and comparisons of product performance in different regions.

One additional measure that would aid policy alignment is the inclusion of energy performance benchmarks in international performance standards, which could be used by national energy efficiency schemes as the basis for their mandatory or voluntary performance specifications. This idea is less universally accepted, in part because it could lead to less than optimal specifications and be unreasonably rigid. However, energy performance values have been included in the case of motors (IEC 60034-30), as shown in Attachment 3.

One approach that provides a limited number of benchmarks in international standards, while enabling flexibility in their application, is to seek:

- Benchmarks within international standards that indicate stepped levels of energy performance appropriate for different types of policy measures (e.g. to remove the worst performing products or promote the best) in different national circumstances (e.g. developed or developing economies).

This approach would reduce the number of performance requirements for products marketed globally, making it easier for industry to understand and comply with these requirements.

It should be noted that 2 reports (Navigant, 2011; and ICF, 2011) provide further explanations of the benefits of harmonisation together with a detailed assessment of opportunities for achieving greater harmonisation on a product basis.

2.1 Appropriate standardisation organisations

There are many thousands of standardisation organisations, including, national, regional, industry/trade and professional. However, as a global governmental organisation with an interest in increasing harmonisation, it is most appropriate that 4E focuses on international standardisation organisations as these are actively used by the major global manufacturers and have a level of recognition under WTO rules.

This focus, however, might include approaches to regional or industrial standardisations organisations that have representation and/or influence on international standardisation bodies. Clearly there may also be strategic opportunities to explain our work to other relevant organisations in the field that are involved in standards work – and this will help to increase the network of support for our messages.

2.1.1 International standardisation organisations

The peak international standardisation organisations are:

- International Organisation for Standardisation (ISO)
- International Electrotechnical Commission (IEC)
- International Telecommunication Union (ITU)

Each of these are structured to into strategic or thematic committees, as well as product-specific technical committees and working groups.

For example, ISO-SAG-E and IEC SG1 are both strategic committees dealing with energy efficiency and renewable resources (see Attachments 1 and 2). A full list of national members of IEC and ISO is provided in Attachment 4.

In addition, the Institute of Electrical and Electronics Engineers (IEEE) is a major standards making organisation of some relevance and should be on the list of target organisations once we have begun our initiative with the IEC and ISO.

2.1.2 Regional standardising bodies recognized by ISO, IEC, ITU

Significant regional groupings of standardisation organisations with recognition by international standardisation organisations include the following:

The most notable regional standards activity is that of the **European Union**, where the corresponding regional bodies to ISO and IEC are CEN and CENELEC. Membership of these organisations comprises the national standards bodies (in effect the same members of ISO and IEC) of Europe. Their work is given an added impetus in that under the European Union Directives, compliance with some Standards that have been prepared by CEN and CENELEC under a mandate from the European commission is a designated means for demonstrating compliance with the EU legal requirements.

In some cases, the secretariats of CEN and CENELEC committees are willing to correspond with non-European interests and convey their views to the committees. Most CEN and CENELEC committees have parallel activities in ISO and IEC, and in some cases the same organisation provides the secretariat for both an international and regional committee. There are agreements between CEN/CENELEC and ISO/IEC regarding exchange of information, avoidance of duplicated effort, and the use of International Standards as the basis of European Regional Standards¹.

In **North America** there has been an agreement on co-operation in Standards development between Canada, the USA and Mexico under the title 'Pan-American Standards Commission' (COPANT).

In **South-East Asia** and the Pacific there is no significant regional development of Standards. However, there is congress of interested parties: the Pacific Area Standards Congress (PASC), which comprises standards bodies in Asia and the Pacific rim. In practice, membership of PASC embraces most non-European interests in ISO and IEC. PASC has determined that it will not have a Standards writing role but will provide a forum for consultation on matters of common interest. PASC does not have a permanent chair, but rotates its chair, which is provided by the host organisation for each of its annual meetings.

In parallel with PASC, there exists the standardisation group of the Asia Pacific Economic Conference (APEC), which is a conference of government agencies concerned with trade and economic affairs. To date, APEC's discussions have taken a positive note in relation to regional harmonisation of Standards, and it is developing its discussions with PASC on this subject.

While these regional organisation will not be a primary target for 4E activity, it would be worthwhile for 4E members in these regions to make efforts to inform them of 4E views and enlist their support where possible. Where support is forthcoming, the IEC and ISO should be made aware of this fact.

3 Barriers to achieving 4E objectives

The task of writing standards for electrical products has traditionally focussed on issues such as safety and been viewed as one best left to technical experts closely involved in the development and manufacture of these products. Originally most tests methods for energy performance were for the purpose of providing an approximate rating.

The development of energy efficiency policies at a national and regional level has led to an increased focus on improving test methods that can provide repeatable and reproducible determinations of

¹ The main co-operation agreement between ISO and CEN is known as the Vienna Agreement. The agreement between IEC and CENELEC is known as the Dresden Agreement.

energy performance in a range of energy-using appliance and equipment. This level of accuracy is required for the enforcement of national policy measures. The development or adoption of these by international standardisation organisations has been viewed as desirable in order to promote harmonised high standards of testing globally (see benefits in Section 2).

Over a number of years and for several product categories, governments wishing to see the development of robust international standards for energy efficiency have been frustrated by the lack of attention given to their priorities by international standards organisations and their technical committees. These concerns and other concerning standardisation were voiced at joint meeting in held by the IEA, IEC and ISO in March 2009 (IEA, 2009).

The establishment by ISO and the IEC of strategic committees dealing with energy efficiency recognised the importance of the issue, but have not yet substantially tackled the perceived problem that members of international technical committees typically do not consider the policy objectives of governments as relevant for their consideration.

Governments do not themselves have representation on the major international standards organisation committees, either at the strategic or technical level, although the IEA Secretariat does have observer status on committees relevant to energy efficiency. These committees are populated by representatives of national organisations (see Attachments 1, 2 & 4), plus some representatives of partner organisations and peak bodies. Since industry tends to have heavy representation in national standards bodies, this is reflected in their representation on international committees. As 'national representatives', their primary function is to reflect the views of their national standards committee, which may or may not reflect the policy aspirations of their government.

Individual governments can seek to gain influence over their national standards committees, or to sponsor experts as their national representatives, in order to gain a voice at the table on international committees. Gaining representation at the technical committee level remains the most effective long-term strategy for individual governments to influence international standards, however it requires sustained resource commitments. There is also a danger that if several other governments do not pursue this course, individual nation representatives on international committees will lack support from other members.

While the representation of the policy views of individual economies on relevant technical committees should be encouraged, there are additional options for 4E to pursue as a group, and these are described below.

4 Options for 4E activities

As outlined above, tackling the issues highlighted in this paper requires a considerable commitment of resources and attention sustained over many years. These are likely to be more than available to a single government and therefore 4E could be in unique position to facilitate a co-ordinated approach.

On-going co-ordination has played a key role in most of the areas of progress to date, tracking progress, ensuring representation on key committees, harnessing the resources of countries/organisations with common interests and providing credible information at strategically important times.

Harnessing the connections and influence that 4E members already have on strategic and technical committees in a coordinated fashion, and joining forces with other organisations with common interests, could go along way to achieving 4E objectives.

Ultimately, there is little substitute for the representation on relevant technical committees of government interests, however the role of the strategic committees may also be important in providing guidance on matters of principle. As such, the most effective strategy is likely to be two-pronged:

targeting key technical committees dealing with a set of priority products as well as the strategic committees.

4.1 Approach strategic committees

Although ISO SAG-E and IEC SC 1 have to date had limited impact, SAG-E has certainly considered the issue of the suitability of standards in supporting government policy in the past (see Attachment 2). It is likely that they would take some notice of a direct approach (e.g. by letter) outlining our concerns, and this may provide the opportunity to make a presentation to future meetings. The Committee appears fairly open to suggestions for future activities.

It should be noted that the IEA Secretariat has observer status at these meetings and there is an opportunity to collaborate with the Secretariat to put forward our views (see Section 5). Similarly other 4E member governments that have representatives on these committees provide a further avenue for obtaining influence. For example, discussions with the Australian national representative on IEC SG 1 indicate that he would be happy to support and put forward the Australian Government's concerns. We should also encourage other 4E member governments to liaise with their national representatives on these committees.

This initiative may lead to further opportunities that should be assessed once they become apparent. It should be noted that one option is for 4E to gain some consultative role, as has been achieved by 4E EMSA as described in Attachment 3 (B).

4.2 Approach to product specific technical committees

At the same time, 4E could ask member governments to write individually, but in a co-ordinated fashion, to the Chairs or Convenors of relevant technical committees with a direct request to consider the detailed issues raised by 4E Annexes. At this stage, these are likely to focus on the areas of lighting, motors and motor systems, and network standby. At the same time, 4E governments should alert their national representatives of this action and encourage them to support this initiative. This will have more impact than if 4E contacts Chairs or Convenors directly.

As above, this may lead to further interactions that will need to be considered and responded to.

5 Co-operation with other organisations

4E and its member governments are not the only parties with similar interests seeking to influence standardisation organisations.

The IEA Secretariat has made several approaches to the IEC and ISO over recent years, and standards organisations have participated in many IEA workshops on energy efficiency issues. In March 2009, the IEA and IEC co-hosted a workshop with ISO and the IEC on *International Standards to Promote Energy Efficiency and Reduce Carbon Emissions*².

The IEA Energy Efficiency Unit (EEU) has continued interest in promoting energy efficiency through collaboration with IEC and ISO and a standing invitation to attend relevant meetings. However, with limited resources and other priorities, it is likely that the EEU would welcome the opportunity to develop a co-operative working relationship with 4E on standards issues. This is particularly the case on issues relating to Standby Power, although not limited to this topic. Initial discussions with the EEU indicate that they would be willing to make a presentation to the April meeting of IEC SG 1.

It is likely that SEAD will also seek to influence standardisation organisations, probably under the S&L Working Group. There would be considerable benefits in avoiding duplication, and the possibility of

² See Agenda and presentation at http://www.iea.org/work/workshopdetail.asp?WS_ID=400

gaining wider support for our messages from SEAD member countries. 4E should therefore discuss this opportunity with SEAD.

Gaining the support of Industry groups would also be highly advantageous, as this may be reflected in additional support within technical committees. We should work with Annexes to identify and encourage any industry groups that are likely to be supportive.

6 Tasks

Before making a major commitment, undertaking the following tasks would enable ExCo delegates to better understand the potential role for 4E in this field:

6.1 Preparatory

1. Approach the International Energy Agency and SEAD to determine whether they wish to collaborate with 4E on approaches to Standardisation Organisations.
2. Agree within the ExCo on general messages to be conveyed to strategic committees.
3. Ask Annexes to identify sets of actions/measures they wish to see adopted by technical committees.
4. Ask Annexes to identify relevant technical committees and any existing members (or industry groups) that are likely to be supportive.
5. Identify a priority list for standardisation organisations and their relevant committees (and membership).

6.2 Actions

6. Approach strategic committees to gain invitations to attend/present.
7. Co-ordinate letters to product-specific technical committees from individual countries (copying supportive members of these committees).
8. Follow-up above actions.

7 References

ICF (2011), *Reducing Trade Barriers for Environmental Goods and Services in APEC Economies: Mapping Exercise for Energy Efficient Products*, produced for the Asia-Pacific Economic Cooperation (APEC) Expert Group on Energy Efficiency and Conservation Energy Working Group by ICF International (Beijing), January 06, 2011

IEA (2009), Proceedings of workshop: *International Standards to Promote Energy Efficiency and Reduce Carbon Emissions*, OECD ,Conference Centre, Paris: 16-17 March 2009, available at: http://www.iea.org/work/workshopdetail.asp?WS_ID=400

Navigant (2011), *Opportunities for Success and CO2 Savings from Appliance Energy Efficiency Harmonisation*, Paul Waide, Navigant Consulting, March 2011

SA (2008), Guide to international Standardisation, Guide No 3, National Standards Office, Standards Australia, Revision: 01/09/2008. Available from:

<http://standards.org.au/LinkClick.aspx?fileticket=begud0ahXcE%3D&tabid=89>

Attachment 1: IEC SG 1

SG 1 was established in 2007 to look at current developments in energy efficiency and renewable resources and road map the IEC's standardization work in these areas. The terms of reference are:

- to analyse the status quo in the field of energy efficiency and renewable energy sources (existing IEC standards, ongoing projects),
- to identify "white spots"/gaps/opportunities, find new ways of achieving energy efficiency in the electrotechnical domain,
- to set objectives for electrical energy efficiency (EEE) in products and systems,
- to formulate recommendations for further actions.

SG 1 meets approximately every 6 months, usually in Europe. The next meeting takes place in Frankfurt on 12 April 2012.

A representative of the IEA Energy Efficiency Unit may join any meeting related to energy efficiency as an observer.

Table 1: Membership of IEC SG 1 (2012)

Member	Country
Secretary Mr Gabriel Barta	C.O
Convenor Mr Bernhard Thies	DE
Mr Mark R. Amos	AU
Mrs Bianka Belinska	ZA
Mr Franco Bua	IT
Mr Weisheng Chen	CN
Mr Jun Young Choi	KR
Mr Pablo Corróns Crespí	ES
Mr Ken Elsey	CA
Mr Chris Evans	GB
Mr Paul Hamilton	US
Mr Thomas Korssell	SE
Mr Jean-Jacques Marchais	FR
Mrs Kirsi van Hunen Silander	ISO
Mr Ralph Sporer	DE
Mr Kris Szajdzicki	GB
Mr Atsushi Takakuwa	JP
Mr Jia Zhu	CN
Mr Bruno Ziegler	FR
Alternate Member	Country
Mr Angelo Baggini	IT
Ms Jean Baronas	US
Mr Derek Henriques	CA

Attachment 2: ISO SAG – E

Co-chaired by AFNOR (France) and SAC (China)

Table 2: Membership of ISO SAG-E (2012)

MEMBER	ORGANISATION	COUNTRY
Mr. ASHER Allan	COPOLCO	Australia
Mr. BHASKAR Ram	National Standards Council	Singapore
Mr. BOO Kyung-Jin	Korea Energy Economics Institute (KEEI)	Korea
Mr. BOONEKAMP Piet	Energy Research Centre of the NL	Netherlands
Mrs. MOHAMED Igbal Elsadig AHMED	Ministry of Energy & Mining	Sudan
Mr. GIDEON Richards	Consulting with Purpose Ltd	UK
Mr. GRASER Christoph	Siemens	Germany
Mr. GROSS Z'ev	Ministry of National Infracstrutures	Israël
Mr. HENRIQUES Derek	Henriques Consulting	Canada
Mr. ISHIHARA Akira	Energy Conservation Center	Japan
Mr. KABARITI Malek Atallah	National Energy Research Centre	Jordan
Mr. KRUGER ENGE Andreas	Enova	Norway
Mrs. LE GALL Carole	Centre Scientifique & Technique du Bâtiment	France
Mrs. LIHIDHEB Kawther	National Agency for Energy Conservation	Tunisia
Mr. MATTEINI Marco	UNIDO	Guest
Mr. MARCHAIS Jean-Jacques	Schneider Electric	France
Mrs. MCKANE Aimee	Lawrence Berkeley National Laboratory	USA
Mr. MUÑECAS Miguel Angel	Repsol-YPF	Spain
Mrs. NEKHAEV Elena	World Energy Council	UK
Mr. RADLOFF Gustav	Energy Cybernetics	South-Africa
Mr. SHIRISH Garud	Renewable Energy Technology Applications	India
Mr. THIES Bernhard	Convenor of the IEC SAG on Energy	Germany
Mr. VYZE Trevor	ISO Central Secretariat	Switzerland
Mr. PARK Jungwook	IEA	France
Mr. WONGPRADIT Napha	Energy Conservation Regualtion	Thailand
Mr. YANG Zeshi	SAC	China
Mrs. MOUTET Catherine	AFNOR - Host	Guest
Mr. GINDROZ Bernard	President of the European sector forum on energy management	Guest

International Partners:

IEC

IEA

WEC

ISO COPOLCO (Committee on Consumer Policy of ISO)

Table 3: Report on progress and status of SAG E Recommendations taken so far (SAG E doc 27 2010-01-21)

Recommendations	Actions
<p>Care should be taken to ensure that International Standards are provided in time to support the metrics and calculation methods, methodologies and best practices needed to support decisions of policy makers.</p>	<p>Recommendation establishes general principle for SAG E discussions. Note: The TMB recently approved a policy statement on this matter for all ISO committees. Principles for Developing ISO and IEC Standards Related to or Supporting Public Policy Initiative. Further action: None needed</p>

Attachment 3: Summary of Experience in Motors (EMSA)

A. Summary of Performance Benchmarks in Motors Standard

Since 2008, 'efficiency classes' have been contained within IEC 60034-30 *Rotating electrical machines: Part 30: Efficiency classes of single speed, three-phase, cage-induction motors (IE-code)*.

The inclusion of energy classes was initially proposed in 2005 to overcome confusion caused by the developments of different regions standards and government/industry classification. The concept was presented at EEMODS'05 in Heidelberg and later developed by the SEEM Initiative under the direction of Conrad Brunner (now Operating Agent of 4E Electrical Motor Systems Annex).

CEMEP (Manufacturers of Electrical Machines and Power Electronics) took over the initiative in 2006 by presenting a proposal to the IEC. The IEC adopted this as a new work item, establishing Working Group 31 under TC 2, convened by Martin Doppelbauer (Chairman of the German Council of Standardisation of Electric Motors).

IEC 60034-30 is in the process of being updated and Edition 2 is currently issued as a Committee Draft (CD). The forward stresses the harmonization aims of this standard:

“This IEC standard provides for the global harmonization of energy-efficiency classes of electric motors. It deals with all kinds of electric motors that are rated for sinusoidal voltage as long as their efficiency can be determined independent of the voltage source.”

IEC 60034-30 is not a test methodology, but refers to the relevant part of the IEC 60034 series of standards that specifies how products shall be tested:

“Efficiency and losses shall be tested in accordance with the preferred method of the individual motor type as given in IEC 60034-2-1.”

The classification of nominal efficiencies is provided in a series of tables, referred to below:

Table 4: IE-Efficiency classification

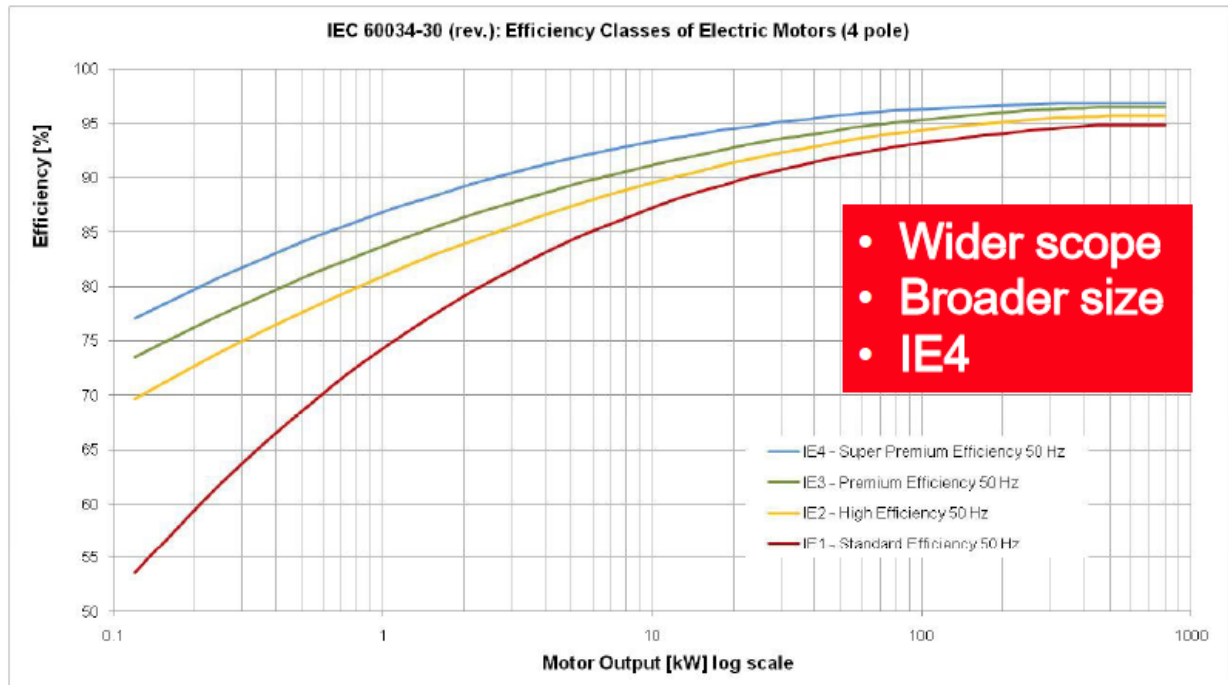
Designation	Definition
IE1	Motors with a rated full-load efficiency equal to or exceeding the limits listed in clause 5.4.1.1.
IE2	Motors with a rated full-load efficiency equal to or exceeding the limits listed in clause 5.4.1.2.
IE3	Motors with a rated full-load efficiency equal to or exceeding the limits listed in clause 5.4.1.3.
IE4	Motors with a rated full-load efficiency equal to or exceeding the limits listed in clause 5.4.1.4.
IE5	Envisaged for a future edition of this standard. See clause 5.5.

These efficiency levels are illustrated in Figure 1 below:

The Standard further specifies that:

“The efficiency declared by the manufacturer on the rating plate (rated efficiency) shall be greater or equal to the nominal efficiency as defined in this standard (according to the efficiency class (IE-code) on the rating plate).”

Figure 1: Motor efficiencies for IEC classifications



It should be noted that IEC 60034-30 does not usurp or interfere with the rights and responsibilities of governments, or other bodies, from setting their own performance requirements for motors. IEC 60034-30 establishes a set of threshold efficiency levels and their classification that can be referred to, or called up, by national energy efficiency programs if they consider there are advantages in doing so.

EMSA monitors the adoption of motor energy efficiency policies, and Figure 2 & Figure 3 show the uptake of MEPS in terms of the IEC classification.

Figure 2: Stringency of MEPS for motors in three region over time using the IEC classification

Motor MEPS	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
USA	IE2													IE3						
Europe EU-27														IE2				IE3*		IE3**
China P.R.					IE0				IE1					IE2				IE3		

*) > 7.5 kW or IE2+ VFD

**) all sizes or IE2+ VFD

Figure 3: Stringency of MEPS for motors globally using the IEC classification

70% of motor system electricity is used in „MEPS Countries“

Efficiency Levels	Efficiency Classes	Testing Standard	Performance Standard
3-phase induction motors	IEC 60034-30	IEC 60034-2-1	Mandatory MEPS ****
	Global 2008; rev. 2012 *	incl. stray load losses 2007/rev. 2012 **	National policy Goal
Super Premium Efficiency	IE4	Preferred Method	
Premium Efficiency	IE3	Summation of losses with load test: P _{LL} determined from residual loss	Canada
High Efficiency	IE2		USA
			Europe*** 2015 / 2017
			Australia
Standard Efficiency	IE1		Brazil
		China	
		Europe	
		Korea	
			New Zealand
			Switzerland
			Costa Rica
			Israel
			Taiwan

11.05.2011 CUB
A+B International

*) Sizes 0.1 kW - 800 kW, 50 and 60 Hz

**) for 3-phase machines, rated output power < 1 MW

bold means in effect

***) Europe* 2015 (≥ 7.5 kW), 2017, IE3 or IE2 + Variable Speed Drive

****) Minimum Energy Performance Standard



EMSA Zurich 16/17 May 2011

B. 4E EMSA consultative role in standards

To support the development of energy efficiency policies in Europe, the European Commission asks the European Standard Makers (CEN and CENELEC) in certain cases to develop, change and expand existing standards to cover subjects in their current legislation. Some of these items are then quickly propelled onto the global level and treated in IEC. In all of these cases IEC (or CENELEC) organizes the work and sets up an existing (or new, or joint) working group to handle the project.

EMSA was mentioned in the Mandate on future standards on efficient electric motors the European Commission (EC) handed to CENELEC in June 2010.

This mandate states:

"As appropriate, CEN, CENELEC and ETSI will consult organisations of other global standardisation and policy initiatives such as the IEA Electric Motor System 4E Annex."

Currently several standards are under revision because of the mandate.

- IEC 60034-30 Efficiency classes: expansion of the scope from old 0.75-375 kW to new 0.12 to 800 kW, include also 8-pole motors and other kind of motor technologies, and define IE4.
- IEC 60034-2-1 Testing: improve accuracy and repeatability, provide guidance to testing sequences, define a "preferred testing method".

Attachment 4: National members of ISO and IEC

Table 5: National members of ISO and IEC

Country	Organisation
Argentina	IRAM - Instituto Argentino de Normalizacion
Australia	SAI - Standards Australia International Ltd (Australian National Committee of the IEC)
Austria	Austrian Electrotechnical Committee Austrian Standards Institute
Belgium	The Belgian Institution for Standardization Comite Electrotechnique Belge
Bosnia and Herzegovina	Institute for Standardization, Metrology and Patents of Bosnia and Herzegovina
Brazil	ABNT – Associacao Brasileira de Normas Tecnicas (Brazilian National Committee of the IEC)
Canada	SCC – Standards Council of Canada (Canadian National Committee of the IEC)
Chile	INN – Instituto Nacional de Normalizacion
China	CSSN – China Standards Information Center CSBTS – China State Bureau of Quality and Technical Supervision (Chinese National Committee of the IEC)
Colombia	ICONTEC – Instituto Colombiano de Normas Tecnicas y Certificacion
Costa Rica	INTECO – Instituto de Normas Tecnicas de Costa Rica
Croatia	DZNM – State Office for Standardization and Metrology
Czech Republic	CSNI – Czech Standards Institute
Denmark	DS – Dansk Standard
Ecuador	INEN – Instituto Ecuatoriano de Normalizacion
Egypt	EOS – Egyptian Organization for Standardization and Quality Control
Finland	SFS – Finnish Standards Association SESKO – Finnish Electrotechnical Standards Association
France	UTE – Union Technique de l'Electricite AFNOR – Association francaise de normalisation
Germany	DIN – Deutsches Institut fur Normung DKE – Deutsches Komitee der IEC
Greece	ELOT – Hellenic Organization for Standardization
Hong Kong, China	ITCHKSAR – Innovation and Technology Commission
Hungary	MSZT – Magyar Szabvanyugyi Testulet
Iceland	STRI – Icelandic Council for Standardization (IEC National Committee of Iceland)
India	BIS – Bureau of Indian Standards
Indonesia	BSN – Badan Standardisasi Nasional
Ireland	NSAI – National Standards Authority of Ireland (Electro-Technical Council of Ireland)
Israel	SII – The Standards Institution of Israel
Italy	CEI – Comitato Elettrotecnico Italiano UNI – Ente Nazionale Italiano di Unificazione
Japan	JISC – Japan Industrial Standards Committee
Kenya	KEBS – Kenya Bureau of Standards
Korea	KATS – Korean Agency for Technology and Standards (Korean National Committee of IEC)
Latvia	LVS – Latvian Standard
Lithuania	LST – Lithuanian Standards Board
Luxembourg	SEE – Service de l'Energie de l'Etat, Departement Normalisation (Comite National CEI du Luxembourg)
Malaysia	DSM – Department of Standards Malaysia (Malaysian National Committee of the IEC)
Malta	MSA – Malta Standards Authority (IEC Maltese National Committee)

Mexico	DGN – Direccion General de Normas
Moldova	MOLDST – Department of Standards, Metrology and Technical Supervision
Morocco	SNIMA – Service de normalisation industrielle marocaine
Netherlands	NEN – Nederlands Normalisatie-Instituut (Netherlands National Committee of the IEC)
New Zealand	SNZ – Standards New Zealand (New Zealand Electrotechnical Committee)
Norway	NEK – Norsk Electroteknisk Komite NSF – Norges Standardiseringsforbund
Oman	DGSM – Directorate General for Specifications and Measurements
Peru	INDECOP – Instituto Nacional de Defensa de la Competencia y de la Proteccion de la Propiedad Intelectual
Philippines	BPS – Bureau of Product Standards
Portugal	IPQ – Instituto Portugues da Qualidade (Portuguese National Committee of the IEC)
Russian Federation	State Committee of the Russian Federation for Standardization, Metrology and Certification (Russian Federation Committee for the IEC)
Saudi Arabia	SASO – Saudi Arabian Standards Organization (Saudi Arabian National Committee of the IEC)
Singapore	PSB – Singapore Productivity and Standards Board (Singapore National Committee of the IEC)
Slovakia	SUTN – Slovak Institute for Standardization (Slovak Electrotechnical Committee SEV)
Slovenia	SMIS – Standards and Metrology Institute (Slovenian IEC National Committee)
South Africa	SABS – South African Bureau of Standards (South African National Committee of the IEC)
Spain	AENOR – Asociacion Espanola de Normalizacion y Certificacion (Comite Nacional Espanol de la CEI)
Sri Lanka	SLSI – Sri Lanka Standards Institution
Sweden	SEK – Svenska Elektriska Kommissionen SIS – Standardiseringen i Sverige
Switzerland	SNV – Swiss Association for Standardization CES – Swiss Electrotechnical Committee
Thailand	TISI – Thai Industrial Standards Institute (Thai National Committee of the IEC)
Trinidad and Tobago	TTBS – Trinidad and Tobago Bureau of Standards
Turkey	TSE – Turk Standardlari Enstitusu (Turkish National Committee of the IEC)
United Arab Emirates	SSUAE – Directorate of Standardization and Metrology
United Kingdom	BSI – British Standards Institution (British Electrotechnical Committee)
United States	ANSI – American National Standards Institute (US National Committee of the IEC)
Uruguay	UNIT – Instituto Uruguayo de Normas Tecnicas
Venezuela	FONDONORMA – Fondo para la Normalizacion y Certificacion de la Calidad
Vietnam	TCVN – Directorate for Standards and Quality