



Electrical Energy Efficiency (E3)

Introduction

Energy generation based on fossil fuels together with a growing mistrust of nuclear power as a safe and clean alternative, have resulted in unfavourable conditions for maintaining the sufficient and consistent energy supplies of the past. These changes, which have been experienced globally, have led to an increased awareness of the importance of Energy Efficiency and energy efficient products.

As a part of this shift, a new market is expanding rapidly, based on electrical/ electronic and ICT technologies. Countries around the world are introducing new policies and regulations to optimize energy usage.

Part of the solution is to improve the efficiency of individual equipment, thereby stimulating development of technologies.

Today it is very important to create efficient products. IECEE, the IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components, operates the Electrical Energy Efficiency (E3) programme to support industry efforts to develop energy efficient products.

Through the E3 programme, IECEE aims to facilitate cross-border mutual recognition of conformity assessment in the field of Energy Efficiency. It also hopes to satisfy businesses, government and consumer needs.



IECEE E3 programme

IECEE E3 programme is a globally standardized approach to test and verify Energy Efficiency for electrical/electronic equipment, based on IEC International Standards.

It aims to prevent duplication of testing, reduce costs and support global trade in a timely manner. IECEE E3 programme will provide proof of compliance to IEC International Standards in the field of Energy Efficiency in general and more particularly in:

- Energy performance
- Energy consumption
- Level of noise emission

IECEE E3 programme is a third-party conformity assessment service, and implies the granting of a Statement of Test Results (STR).

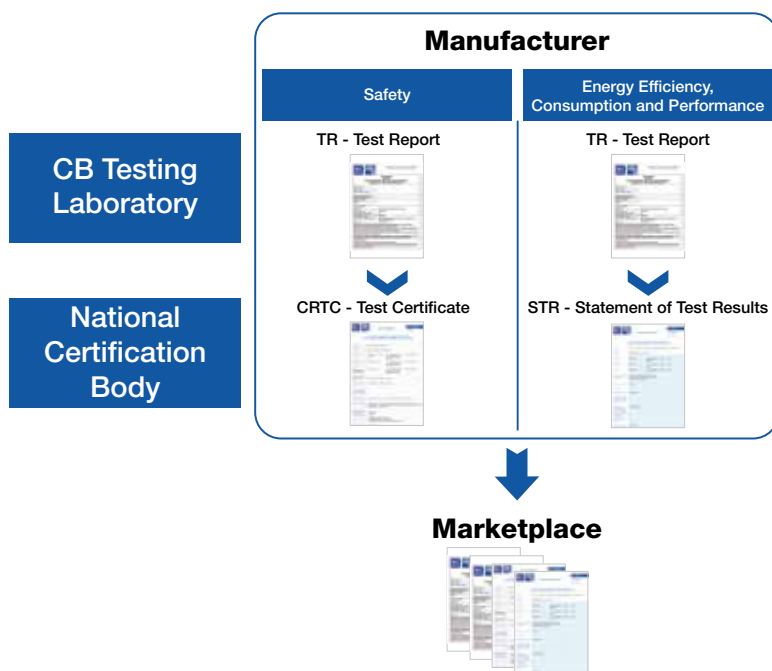
Benefits

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- Help the relevant industry easily access the global market
- Avoid duplication of testing and measuring, thus optimizing costs
- Give proof of compliance with various national regulations
- Offer countries the possibility to adopt IECEE E3 programme as a part of or instead of establishing their own Energy Efficiency programmes
- Support developing economies to protect their domestic markets from importing inefficient end products
- Contribute to environment protection

Major Energy Efficiency programmes

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Three key Energy Efficiency management programmes are currently operated in many countries/regions around the world:

- Energy rating or labelling (including MEPS¹) - household appliances and light bulb packaging are generally subject to energy rating or labelling. These products shall have an energy label when marketed. The Energy Efficiency of appliances is rated in terms of a set of Energy Efficiency classes on the label.
- Energy efficient product marking or certification - energy efficient product marking or certification is usually undertaken as a voluntary programme to promote development and use of energy efficient products, which perform within the limits of certain standards.
- Standby power reduction programmes - standby power reduction programmes are used to promote the widespread use of products with reduced standby power features. The products shall comply with the energy saving standard and may then bear an energy saving label.



IECEE E3 programme is compatible with these other programmes because the E3 STR and associated Test Report may be used as a basis for assessing product Energy Efficiency.

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¹ MEPS (Minimum Energy Performance Standard) is a specification containing a number of performance requirements for an energy-using device, which effectively limits the maximum amount of energy consumed by a product when performing a specified task.

IECEE E3 testing Standards

IEC International Standards are being adopted by countries around the world to facilitate the implementation of their own energy policies and regulations.

Regarding mutual recognition of Energy Efficiency testing in transportation, buildings, and electrical and electronic appliances,

it is estimated that the areas related to Energy Efficiency standards and labelling programmes, centred on electrical and electronic appliances account for 70 - 80% of the total mutual recognition outcomes among different countries with regard to energy saving. This is because most of the mutual recognition among countries takes

place in the areas centred on energy saving of motors, lighting equipment, and standby power.

IECEE is the only international organization whose conformity assessment results concerning electrical products are mutually recognized by its members.

IEC Standards	Contents	Energy Efficiency Standard and labelling scheme	Target products
IEC 62301	Method of measuring standby power for household electrical appliances	Standby power reduction programme Energy consumption efficiency grade indication system	Computers, monitors, printers, copiers, scanners, multifunctional printers, TV, videos, audios, DVD players, radio cassettes, set-top boxes, modems, electric washing machines, dishwashers, drum washing machines, rice cookers, air purifiers, fans, etc.
IEC 62552	Characteristics and test method for refrigeration equipment	Energy consumption efficiency grade indication system	Refrigerators, freezers, commercial refrigerators
IEC 60034-2-1	Method of determining the loss and efficiency of three-phase squirrel cage induction motors	Energy consumption efficiency grade indication system	Three-phase induction motors
IEC 62087	Measuring method for power consumption of audio, video and other associated equipment	Energy consumption efficiency grade indication system Standby power reduction programme	TV, videos, audios, set-top boxes, monitors, etc.



Achieving IECEE - E3

Statement of Test Result (STR)



All tests are conducted by an IECEE assessed and registered laboratory under strict supervision of its National Certification Body (NCB).

An STR is issued by the involved NCB in conjunction with the attached E3 Test Report and includes:

- Name of the NCB that issued the STR
- Manufacturer/trade name
- Reference to the associated and attached Test Report
- Date of issue

- Product/component/material/model number
- Ratings and description of the sample(s) tested
- Test Standard(s) used
- NCB authorized signature

The E3 service online database is administered by the IECEE Secretariat, in Geneva, with test results provided by the NCBs.

IECEE publishes a list of the registered IECEE NCBs and their issued E3 STRs, which can be accessed online at: www.iecee.org

About the IECEE



IECEE operates the successful CB Scheme. The Scheme offers the potential of one test (based on IEC International Standards) and one certification (to show the conformity), to obtain one or more national certification marks as appropriate (the visual symbol for proof of conformity) or simply for third party documentation of product conformity. IEC worldwide Conformity Assessment Systems cover all scenarios: an internationally recognized one-stop shop.

IECEE sees four main underlying reasons for carrying out conformity assessment.

The first is safety: manufacturers/suppliers need to assure that their marketed products are compliant with relevant safety standards, while governments establish regulations generally intended to protect the population against potential risks associated with the products.

The second is quality: buyers/wholesalers want to ensure the quality of purchased products and unhindered market access.

The third is interoperability: product manufacturers and end users want assurance that their products are fit for purpose and can interact in harmony with other products, services and installations comprising an overall operational environment.

The fourth is consistency: manufacturers/suppliers want to ensure that their marketed products are compliant with the sample assessed.

Conformity assessment provides tangible benefits for the different stakeholders:

For governments, it helps reduce trade barriers caused by different certification criteria in various countries, and helps countries meet their obligations as stipulated in the World Trade Organization's Agreement on Technical Barriers to Trade. It is important to understand that conformity assessment covers regulated and non-regulated areas.

For industry, it reduces delays and costs of multiple testing and approvals since a product can be certified once by a single Certification Body (CB) and that certification can then be accepted by others all over the world, normally without the need to assess the product or system again. This means that products can get to market more quickly and with less expense (that is, fewer tests), and that products can have access to a larger market (potentially the entire world).

Conformity assessment also provides assurance that the goods being purchased will perform to expectations and are reasonably safe when used as intended.

Further information

Please visit the IEC website at www.iec.ch for further information. In the "About the IEC" section, you can contact your local IEC National Committee directly. Alternatively, please contact the IEC Central Office in Geneva, Switzerland or the nearest IEC Regional Centre.

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