

# Fact Sheet: May 2014

**Distribution Transformers: Minimum Energy Performance Standards**

Certain classes of distribution transformers are regulated for energy efficiency in Australia and New Zealand. If you manufacture, import, or supply a distribution transformer that is regulated for energy efficiency, it is important to understand what your legal obligations are.

**Legislative framework for Minimum Energy Performance Standards** (**MEPS)**

Distribution transformers have been regulated for energy efficiency In Australia and New Zealand through the application of MEPS since 1 October 2004.

In October 2012, a single piece of Australian Government legislation, the *Greenhouse and Energy Minimum Standards (GEMS) Act 2012* (**Act**), replaced the various State and Territory laws that had previously been used to implement MEPS. The new Act sets out participation requirements as well as a range of offences for non-compliance.

A key change from the previous State and Territory laws is the extension of coverage to include both the offer to supply and the commercial use of regulated products. If you purchase regulated transformers overseas and import them for your own commercial use they must still comply with the law, even though the supply[[1]](#footnote-1) event occurred outside Australia.

**Specific requirements for transformers**

In Australia, regulatory requirements for distribution transformers are set under the *Greenhouse and Energy Minimum Standards (Power Transformers) Determination 2012* (**Determination**). The Determination specifies what products **are** and **are not** covered, and incorporates requirements for MEPS and testing from the relevant Australian Standard by reference.

**What transformers are covered?**

The Determination covers oil immersed type and dry-type distribution transformers, both single and three phase:

* with power ratings between 10 and 2500 KVA;
* with a system highest voltage of 24 kV; and
* that are designed for 11 or 22kV networks.

This covers transformers installed both in public and privately owned electrical distribution systems, whether installed within on-main grid systems, or off-main grid systems such as mining sites etc. Privately owned transformers installed in commercial or industrial facilities where the voltage of the primary winding is either 11 or 22 kV are also covered.

*Dry-type transformer* means a transformer of which the magnetic circuit and windings are not immersed in an insulating liquid. *Oil-immersed type transformer* means a transformer of which the magnetic circuit and windings are immersed in oil.

**MEPS Requirements**

MEPS requirements are set out in Section 2 of AS 2374.1.2-2003, and are set in relation to power efficiency at 50 per cent load.

**Testing Requirements**

Transformers must be **laboratory tested** to verify their energy performance. The test requirements and calculations are specified in Section 4 of AS 2374.1.2-2003. The test procedures used to determine compliance with MEPS are specified in AS 2374.1-1997 Power Transformers and AS 2735-1984 Dry Type Power Transformers. Testing conducted by manufacturers’ in-house test laboratories is acceptable.

**Registration**

In Australia, all regulated distribution transformers must be registered before being offered for supply or used commercially.

More information on registering a transformer is available at:

[www.energyrating.gov.au/programs/e3-program/energy-rating-labelling/submit/](http://www.energyrating.gov.au/programs/e3-program/energy-rating-labelling/submit/).

A test report is not required to be submitted as part of the registration process. However, manufacturers or importers are required to provide a copy of the test report to the Regulator on request. To streamline compliance checks it is recommended that an electronic copy of the test report be uploaded when making a registration application. Instructions on the use of the on-line registration system are available at:

[www.energyrating.gov.au/resources/program-publications/?viewPublicationID=2139](http://www.energyrating.gov.au/resources/program-publications/?viewPublicationID=2139).

**Monitoring and Enforcement**

The E3 Compliance Program incorporates a range of compliance activities including the national check-testing program and retail surveillance. Check-testing aims to ensure the compliance of products with energy efficiency regulations. It also provides the community and other stakeholders with information that demonstrates that the overall efficiency goals of the program are being met and that those suppliers not meeting their responsibilities are identified and sanctioned. Regular check-testing is undertaken on a range of domestic and commercial product types. Results of previous check-testing and surveillance activity and information on the E3 compliance program are available at:

[www.energyrating.gov.au/programs/e3-program/compliance/](http://www.energyrating.gov.au/programs/e3-program/compliance/).

**Exclusions**

The following transformer types are not covered by the Determination, and are not required to comply with energy efficiency requirements:

* transformers not designed for 11 or 22 kV networks
* instrument transformers
* auto transformers, that is transformers in which at least two windings have a common part
* traction transformers mounted on rolling stock
* starting transformers
* testing transformers
* welding transformers
* three phase transformers with three or more windings per phase
* arc-furnace transformers
* earthing transformers
* rectifier or converter transformers
* uninterruptible power supply (ups) transformers
* transformers with an impedance less than 3 percent or more than 8 percent
* voltage regulating transformers
* transformers designed for frequencies other than 50 hertz
* gas-filled dry-type  transformers
* flameproof transformers.

| For more detailed information go to:Submitting an application:[www.energyrating.gov.au/programs/e3-program/energy-rating-labelling/submit/](http://www.energyrating.gov.au/programs/e3-program/energy-rating-labelling/submit/)On-line registration instructions:[www.energyrating.gov.au/resources/program-publications/?viewPublicationID=2139](http://www.energyrating.gov.au/resources/program-publications/?viewPublicationID=2139)The standards are available from SAI Global or Standards New Zealand:[www.saiglobal.com](http://www.saiglobal.com/)[www.standards.co.nz](http://www.standards.co.nz/default.htm)Purchase IEC Standards:[www.saiglobal.com](http://www.saiglobal.com/)The Determination:[www.energyrating.gov.au/legislation-for-e3-under-gems](http://www.energyrating.gov.au/legislation-for-e3-under-gems) |
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**The** **information in this document is provided as guidance only. This document has been developed to help registrants of distribution transformers better understand their responsibilities under the legislative framework in Australia. For registrants of products in Australia, this document should be read in conjunction with the *Greenhouse and Energy Minimum Standards* *(GEMS) Act 2012* (GEMS Act) and its supporting Regulations and Instruments. Changes to legislation may affect the information in this document. Ultimately, persons are responsible for determining their obligations under the law, and for applying the law to their individual circumstances. This document does not constitute legal advice and is not a substitute for independent professional advice.**

1. See section 14 of the Act for the full range of transaction types that are considered ‘supply’. [↑](#footnote-ref-1)