INTAS

Overview on H2020 Project INTAS

prepared for Coiltech/ World Magnetic Conference, 26th September, Pordenone/ Italy

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INTAS partners

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Funded under the Horizon 2020 programme, INTAS will take place between March 2016 and February 2019, involving 16 European partners, among which 11 are national MSAs or cooperating organisations:

- **List of project partners:**

- **WIP Renewable Energies - Europe**
- **European Environmental Citizens' Organisation for Standardisation - Europe**
- **European Copper Institute - Europe**
- **Engineering Consulting and Design - Europe**
- **Waide Strategic Efficiency –Europe**
- **Austrian Energy Agency - Austria**
- **Federal Public Service Health, Foodchain, Safety and Environment - Belgium**
- **SEVEn Energy Efficiency Center - Czech Republic**
- **Danish Technological Institute -Denmark**
- **Finnish Safety and Chemicals Agency - Finland**
- **The Polish Foundation for Energy - Poland**
- **Directorate General of Energy and Geology - Portugal**
- **Romanian Regulatory Authority for Energy - Romania**
- **Foundation for the Promotion of Industrial Innovation - Spain**
- **Italian National Agency for New Technologies, Energy and Sustainable Economic Development - Italy**
- **Economic and Food Safety Authority - Portugal**

Starting point

The need for the INTAS project arises from the difficulty that national Market Surveillance Authorities (MSAs) and market actors face in establishing and verifying compliance with energy performance requirements for large industrial products subject to requirements of the Ecodesign Directive.

INTAS scope: ***medium / large transformers*** and fans

Ecodesign is a key element…

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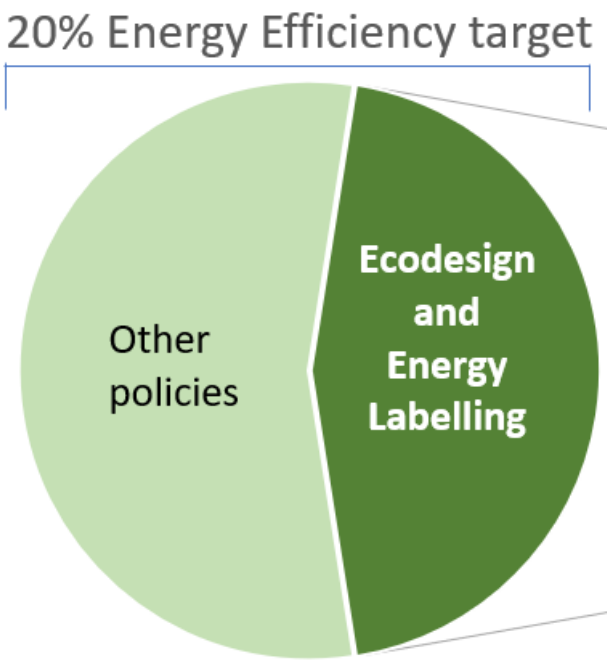

Ecodesign and Energy Labelling will deliver almost 1/2 of the 20% Energy efficiency target by 2020, through:

- -Setting minimum energy efficiency standards for products
- -Eliminating the least performing products from the market
- -Supporting industrial competitiveness and innovation

…but needs effective market surveillance

- In the EU, total losses in 2008 amounted to **93.4 TWh/ year**, = 12% **residentia**l electricity consumption.
- Regulation No. 548/2014 in place since May 2014. However, low market surveillance of large products impedes level-playing field
- Potential savings through more efficient design of transformers estimated at about **16.2 TWh/ year beyond 2020**
  = 3.7 Mt of CO2 emissions
- However, 10-20% of products do not comply with energy efficiency requirements, hence projected **losses in energy savings of 1.6-3.2 TWh**…*if we do not do anything !*

The project aims to

- Support European Member State MSAs to deliver compliance for large products, specifically for **large transformers** and fans
- Support industry to be sure of what their obligations are under the Ecodesign Directive and to deliver compliance in a manner that will be broadly accepted by MSAs
- Foster a common European approach to the delivery and verification of compliance for these products

Challenges for Ecodesign Market Surveillance of Transformers

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For non-series products (i.e. large power transformers) :

- MSAs are unaware of when the product is placed on the market in time to be able to do conformity assessment prior to putting into service
- Conformity assessment post putting into service would incur unacceptably high costs and inconvenience and is technically challenging
- Conformity assessment when putting into service (i.e. during installation) may not be technically viable and may not meet MSA's requirements (i.e. an outcome that meets the technical requirements and is legally defensible)
- Unless mutually acceptable solutions are found there is a risk MSAs will implement conformity assessment practices that create significant cost and inconvenience for the private sector
- Issues regarding "exemptions" from the regulation

Challenges for Ecodesign Market Surveillance of Transformers

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For series products (i.e. small to medium power transformers) :

- MSAs can inspect manufacturer catalogues and could acquire products for conformity verification testing at a 3rd party laboratory
- However, there is still a question of when the product has been placed on the market and how to sample the product for verification testing
- 3rd party testing is more feasible but still quite costly
- Issues with imported units from outside EU (notification, documentation check, possible testing)

Options for compliance verifications

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1. **Documentation inspection**
2. **Test of transformers at accredited independent laboratory**
3. **Test of transformer at manufacturer's premises with independent laboratory measuring equipment**
4. **Test of transformers in combination with manufacturer/utility/end user assessment (witness testing) using manufacturer's laboratory and equipment**
5. **In-situ test of transformer at site of installation (before putting into service) with mobile independent laboratory measuring equipment – *last resort***

outcomes of INTAS activities

A) Information requirements and documentation inspection, to:

- allow the identification and classification of products to MSAs
- develop a a checklist to enable MSAs to quickly and easily request the information that is both required and relevant for the evaluation of which products will undergo physical testing.
- enable manufacturers to anticipate the type and format of a request for information on a particular product and thus reduce the administrative burden

outcomes of INTAS activities

B) Evaluation of product's energy performance

Of all testing options, “witness” of factory acceptance tests (FATs) is considered the most affordable and the least disruptive and costly to suppliers. However, important needs are:

- to properly document ways that cheating in FATs could occur and to devise strategies to overcome them
- to ensure there is a competent independent 3rd party inspectorate community available for MSAs to hire
- to establish minimum qualification criteria for the supplier’s test facilities and test procedures.
- to explore means of allowing external measurement equipment to be used in a manufacturer’s lab.
- to address the possible legal issues in the event an MSA rejects a product following a witness test.

Exercises realized in INTAS

Overall 42 transformer units were investigated, some hints of possible "non-compliance" identified !

Test exercises were realized in Spain, Romania, Portugal, Poland and Italy:

Documentation inspection

- Evaluated: 35 units

Test transformers at independent laboratory

- 17 units
- max. ratings: 630 kVA, 36 kV

Test transformers at manufacturer / in-situ with the independent laboratory measuring equipment

- 14 units
- max ratings: 800 kVA, 15.75 kV - 400 kVA, 20 kV

Test transformers in witness testing with manufacturer's equipment

- 2 units
- max ratings: 40 MVA, 72.5 kV

Methodology Flow Chart

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Please see current version here:

http://www.intas-testing.eu/project-documents

- The methodologies will undergo a practical validation phase during which MSAs participating in the INTAS project will assess their applicability.
- Market actors have also be informed and consulted at a number of National Focal Point meetings organized in Europe.

Methodology Flow Chart

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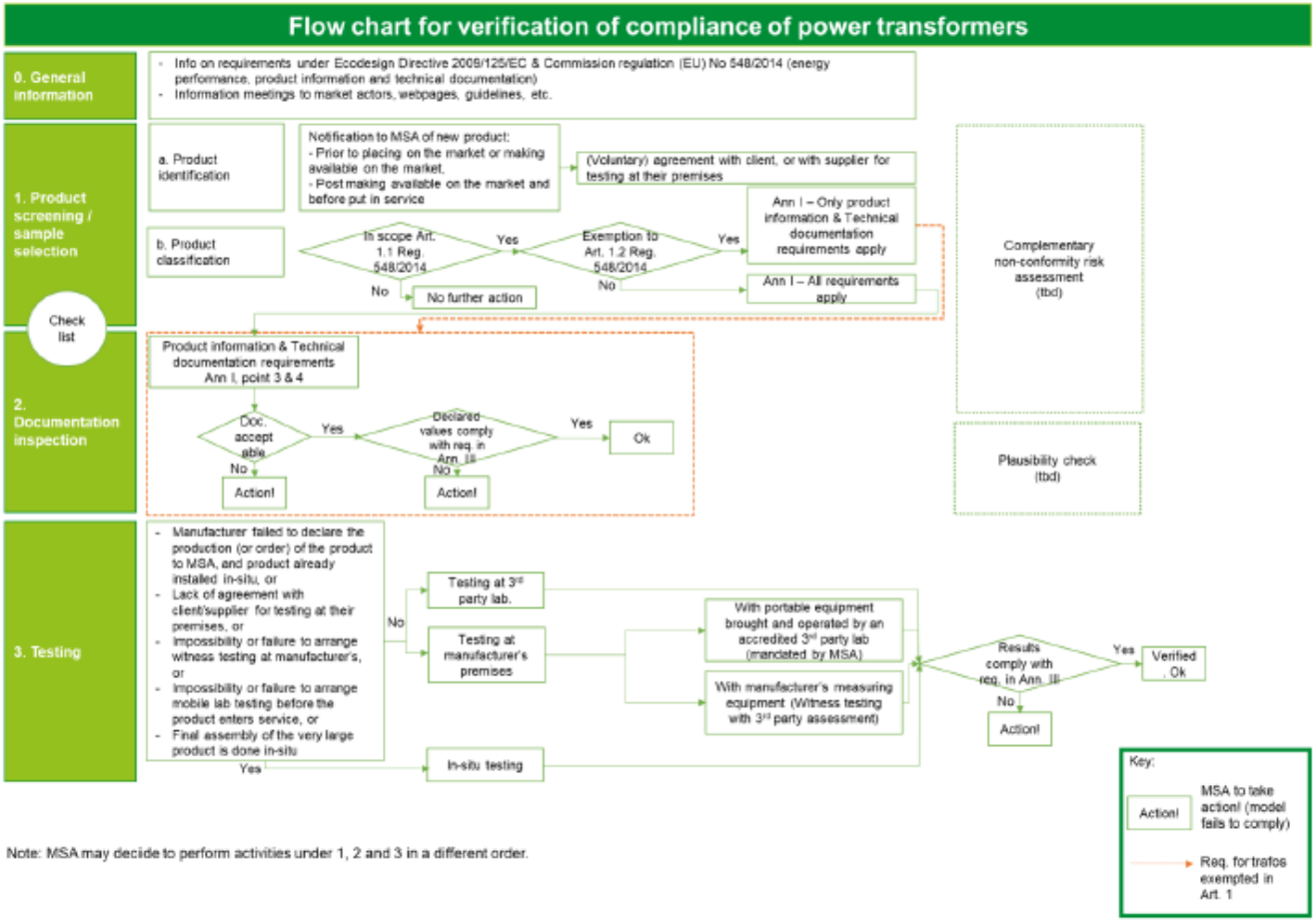

Note: MSA may decide to perform activities under 1, 2 and 3 in a different order.

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What's next ?

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September 2018

Validation of the market surveillance methodologies for fans and transformers

October 2018

Policy recommendations for effective market surveillance of industrial products

February 2019

Final conference in Brussels to present the main project outcomes to all stakeholders

More information

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www.INTAS-testing.eu

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