

BNXS40: Reducing the impact of tolerances within the current EU Energy Labelling scheme

Version 2.2

This Briefing Note and referenced information is a public consultation document and will be used to inform Government decisions. The information and analysis form part of the Evidence Base created by Defra's Market Transformation Programme¹.

1 Summary

The energy label class and other parameters are self-declared by manufacturers in accordance with test standards cited in UK legislation. These test standards permit tolerances on energy consumption and other parameters which create a risk of enhanced performance claims. This Briefing Note illustrates the impact these tolerances can have and proposes possible mechanisms for addressing this issue.

2 Introduction

This Briefing Note discusses the tolerance regime incorporated in test standards required to implement legislation falling under the Energy Labelling Framework Directive 92/75/EC.

3 Overview of legislation and applicable standards

Energy labelling in the EU is covered by the Framework Directive 92/75/EC² which requires that labelling be provided so that consumers can compare the energy consumption and other performance parameters of certain domestic appliances with alternative makes and models.

In the 12 years since its introduction, energy labelling has stimulated product improvements and competition, transforming the market to increase the availability of more efficient products. However, the MTP's own monitoring tests show that often the measured energy performance is not as efficient as claimed on the energy label.

¹ Further information and Briefing Notes on related issues can be found at www.mtprog.com or follow the links if viewing on-line.

² The European Commission published the Action Plan for Energy Efficiency: Realising the Potential in October 2006, (COM(2006)545 final) in which it states that the revision of the Framework Directive will begin in 2007.

EU Directive 92/75/EC does not specify any limits or performance levels. It provides a legislative framework under which other implementing directives can be introduced to require marking and performance levels for specific household appliances. The implementing directives are identified in Table 1.

Each of these implementing directives identifies either a specific test standard or generically identifies a European standard or harmonisation document that is to be used for measuring the energy and other applicable parameters, e.g. cleaning, spinning etc., depending on the type of appliance. The relevant standards are identified in Table 1.

These test standards also contain a clause detailing levels of tolerance. A summary of these is given in Table 1.

Table 1 - Summary of implementing directives

Appliance	Implementing Directives	Test Standard	Test Standard Energy Tolerance	Notes
Refrigerators and freezers	94/2/EEC 2003/66/EC	EN 153	15%	
Washing machines	95/12/EC, 96/89/EC	EN 60456	15%	
Electric tumble dryers	95/13/EC	EN 61121	15%	
Combined washer-dryers	96/60/EC	EN 50229	15%	
Dishwashers	97/17/EC, 99/9/EC	EN 50242	15%	
Lamps	98/11/EEC	EN 50285	Between 4% and 10%	Tolerance depends on type of lamp
Air conditioning	2002/31/EC	EN 14511	0.85 x declaration	
Electric ovens	2002/40/EC	EN 50304	10% plus 0.040 kWh.	Tolerance is for test with a 'load', otherwise 15% for pre-heating

The tolerance shown is for the first sample tested, see 4. d) below. Current practice in most of the standards listed above is to test one sample of that model from the market. If the energy used proves to be more than 15% greater than claimed, a further three samples from the market are to be tested. The mean result of these three should be within 10% of the claimed energy.

4 Effect of tolerances in the marketplace

Evidence suggests that it is possible to take advantage of the tolerance permitted by the relevant test standard by adjusting results to show an up to 15% improvement in energy efficiency. Thus a product with an A-rating declared on its energy label may have a real energy index closer to the lower end of the B-rating.

Use of tolerances up to 15% can introduce the risk of:

- a) Providing information that is not in line with consumer expectations.
- b) Undermining the accuracy of energy savings calculations.
- c) De-valuing fiscal incentive schemes such as the Carbon Emission reduction Target (CERT, formerly the Energy Efficiency Commitment (EEC³)) funding intended to subsidise the cost of A-rated appliances (as a B-rated machine plus 15% could be declared as an A).
- d) Inhibiting market surveillance.
- e) Allowing 'free-rider' products to penetrate subsidy schemes and to side-step a retailers' procurement policy which restricts their buying to the more energy efficient products.

5 Test results

An analysis of energy test results from 2005/06 is shown in Table 2⁴.

The appliances purchased represented the range of models available. One sample of each model was tested at a laboratory accredited to EN 17025 for the applicable test procedures.

Table 2 - Test results

Appliance	No. of models tested	No. of models where independent tests showed measured energy 15% or greater than claimed energy	No. of models with assessed energy class worse than claimed energy class
Cold appliances ⁵	20	7	15
Washing machines	10	0	7
Tumble dryers ⁶	20	2	19

The results of the testing illustrate that, even though most models are within the allowed measurement tolerance, the majority were measured as having a lower energy label class than that claimed.

The figures in Appendix I illustrate the effect of applying 0%, 5%, 10% and 15% tolerances to the measured energy results.

5.1 Variations between declared and independently measured test results

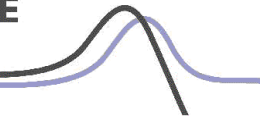
Setting aside any effects of the manufacturers' energy label marking policies, there are two other possible explanations for why the energy efficiency measured

³ See <http://www.defra.gov.uk/environment/climatechange/uk/household/eec/index.htm>

⁴ Results of testing commissioned by Defra as part of MTP compliance activities.

⁵ Domestic fridges, fridge-freezers, upright and chest freezers.

⁶ Vented and condenser with both manual and sensor timers.



subsequently in an independent laboratory may differ from that declared on the product's label.

Inter-laboratory variation – ‘Round-robin’ tests involving several laboratories testing the same appliance consistently show a significant variation in results. The reasons for this are varied, though probably in part due to some or all of the following:

- difficulties with controlling test methods tightly enough;
- inconsistent interpretation of test methodology;
- poor laboratory practice.

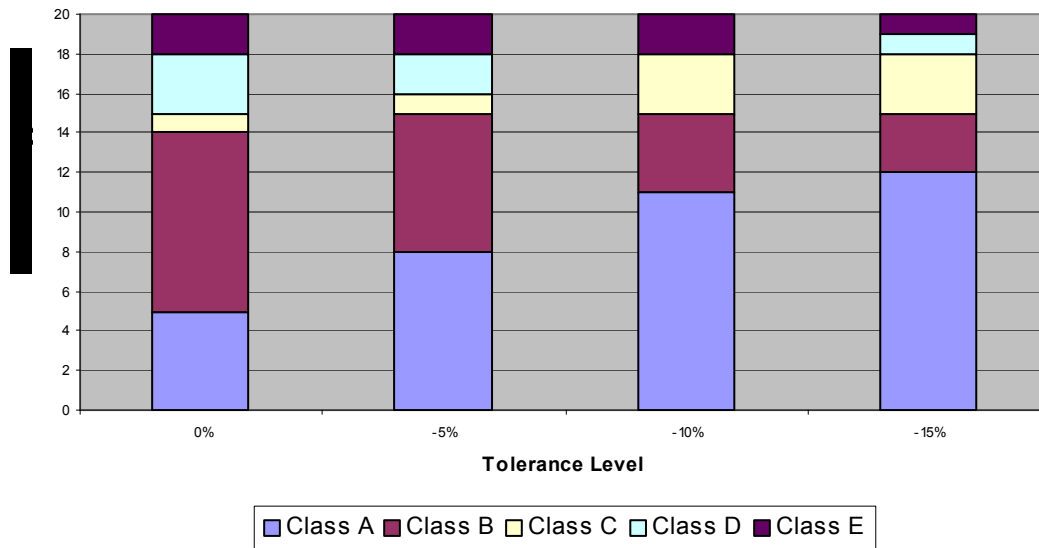
Sample variability – Some variation may exist between different samples of the same product due to differences in the components used in their manufacture or because the original measurements were taken from a product from elsewhere in that product's ‘family’ of similar models.

6 Conclusions

The adoption of generous tolerances brings disadvantages to most stakeholders. It is in the interest of key stakeholders such as policy makers, suppliers and consumers to minimise any market distortions caused by the application of tolerances to ensure that label declarations are accurate, compliance can be more effectively monitored and ‘free-riders’ are prevented from claiming exaggerated performance.

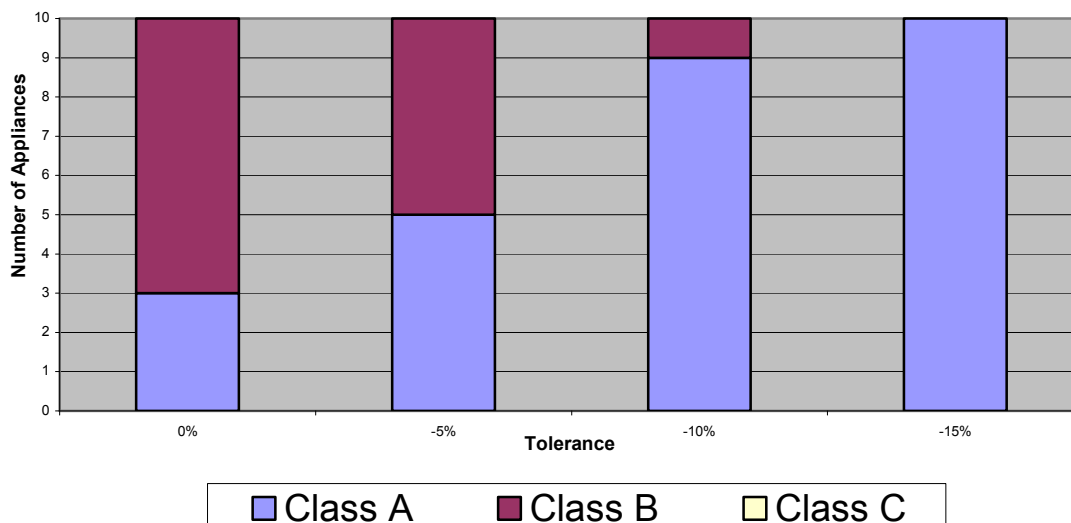
Appendix 1: Impact of tolerances on test results

Energy Label by Tolerance Level: Cold Appliances (2005)



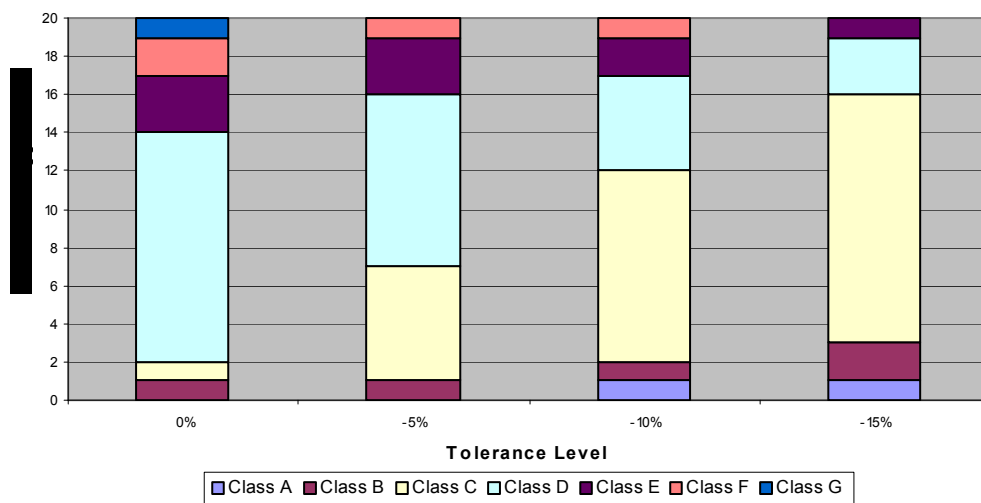
The cold appliances tested claimed 1A+, 13 A, 5 B and 1 C energy efficiency classes.

Energy Class by Tolerance Level: Washing Machines (2006)



All washing machines tested claimed A class for energy efficiency.

Energy Label by Tolerance Level: Tumble Dryers (2005)



The tumble dryers tested claimed 1A and 17C energy efficiency classes and two compact models claimed classes D and F.

Changes from version 2.1

Version 2.2 has been revised in response to stakeholder comments received since version 2.1

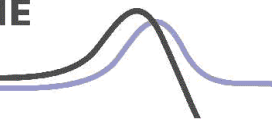
Related MTP information

Briefing Notes relating to the energy labelling of the different domestic appliances and related test methodologies, are listed under 'cold', 'wet' and 'cooking' etc product at:

<http://www.mtprog.com/SelectProductStrategySector.aspx?intSelection=1>

For an overview of the Energy Labelling Framework Directive see Briefing Note BNXS37.

Defra's Sustainable Products and Materials Division are developing a protocol for UK compliance activities. A copy and further details can be obtained from daniel.kapadia@defra.gsi.gov.uk.



Consultation and further information

Stakeholders are encouraged to review this document and provide suggestions that may improve the quality of information provided, email **info@mtprog.com** quoting the document reference, or call the MTP enquiry line on +44 (0) 845 600 8951.

For further information on related issues visit **www.mtprog.com**