

BNXS38: A comparison of voluntary and regulatory standard setting for energy-using products

Version 2.1

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 Programme.

1 Summary

This Briefing Note provides an overview of the different types of standards for energy-using products and the advantages and disadvantages of taking a voluntary or regulatory approach to setting standards.

2 Introduction

The Government's cross-departmental¹ energy efficiency innovation review (EEIR), which was published in December 2005, examined the state of domestic, industrial and commercial energy efficiency across the UK. It looked to identify areas where policy measures could be used to improve rates of energy efficiency.

The Market Transformation Programme (MTP) was asked to provide data and expert opinion on a number of topics, of which this is one (As an opinion piece this document has not been subjected to the conventional MTP stakeholder consultation process.)

.This Briefing Note summarises what was then the current MTP evidence base; the review to produce it was carried out over a short timescale and therefore may contain inaccuracies.

This Briefing Note interprets standards broadly - including labelling and procurement as well as standards imposed by legislation.

¹ Comprising representatives from Defra, HM Treasury, Energy Saving Trust and [0]Carbon Trust.

3 Overview of different ways of setting standards

This section provides a brief description of the different types of approaches to setting standards and provides examples. Most of the examples referred to below are also included in another report: 'Comparison of UK and the best international standards as at March 2006' also undertaken for the EEIR and subsequently updated (the report is available on the MTP web site).

3.1 Minimum energy performance standards (MEPS)

MEPS are either Government laws or regulations which restrict the sale of products which have an energy use above a certain level. In Europe for traded products, such as consumer goods, these would be set at EU level to ensure common market rules. For fixed products, operating within a system, such as for heating, cooling and insulating, they are generally set at national level.

Examples

- UK building regulations for boilers and home insulation levels.
- EC Directive on lighting ballast efficiency.

3.2 Fleet average standard

This is a Government law, regulation, or voluntary agreement which requires the sales- weighted average of the energy performance of a range of products from a manufacturer or importer to be above the given level. This does not stop inefficient products being sold, but if they are sold, they must be balanced by the sale of the same number of products which are more efficient than this level. Within Europe a regulatory scheme would be set at EU level to ensure common market rules.

Examples

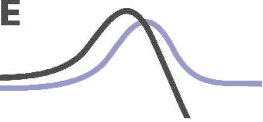
- Japan Top Runner Program - (see http://www.eccj.or.jp/top_runner/index.html for an overview of this program).
- EACEM agreement on energy use in passive standby for TVs and video cassette recorders (VCRs).

3.3 Minimum standard by voluntary agreement

In some sectors the members of a major trade organisation, such as a trade association, for example, agree not to sell products with an energy use above a certain level. Once the agreement is made, all members have to abide by this and if they do not, they must leave the organisation or suffer other penalties. In principle, this could apply to a single country but the nature of the European market means that such agreements are likely to cover the whole of the EU (with national organisations affiliated to a central European one). Sectors may choose to adopt a voluntary standard in order to avoid a regulatory standard being imposed. These agreements generally rely on an existing common 'test standard' agreed at Government level.

Example

- European washing machine standard.



3.4 Mandatory labelling

Energy labels are intended to help buyers make an informed decision about energy efficiency when buying products. The intention is that the energy label will enable the consumer to take into account not just the purchase cost of the appliance but also the otherwise 'invisible' factor of energy consumption. Government may make it mandatory that the amount of energy used when operating certain products is labelled on them in a consistent way. Mandatory labels are generally relative (comparative labels which allow consumers to form a judgement about the energy efficiency (or energy consumption) and relative ranking of all products that carry a label.). They may also include the estimated energy usage of the product in normal use: for a year e.g. for a fridge or per use e.g. a washing machine.

Within Europe, such a scheme would be set at the EU level to ensure common market rules. The labels do not in themselves set best practice but they allow manufacturers to show when they are following best practice and consumers to select which appliance are manufactured as a result of best practice.

Examples

- EU energy labels for domestic products (including: refrigerators, lamps, electric ovens).
- Australia's energy rating scheme for domestic products (including: refrigerators, washing machines, driers, dishwashers, air conditioning).

3.5 Voluntary labelling

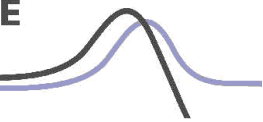
In these schemes the labels are generally endorsement ie they show that products displaying the labels have reached a certain standard of energy efficiency which is nominally the best practice. The schemes may be set up by a Government or non-Government body (that will also have to provide funding for the scheme). It is important that the organisation involved has credibility and does not have any commercial interest in the products. These schemes can be local, national or international.

Examples

- US Energy Star (information and communications technology).
- Energy Saving Trust's energy saving recommended (domestic products).
- EU EcoLabel (wide range of products - covers broader environmental impact, not just energy use).

3.6 Procurement standard

This is when an organisation makes a rule that it will buy only products that achieve a certain energy performance standard. This can happen at any organisation size but the larger the organisation and bigger its purchasing budget the more effective the standards will be. Standards adopted by national Government and large multi-nationals have the greatest influence in this way although so far only the former have taken this step. In these cases the procurement standard can become the best practice and have significant influence on manufacturers.



Example

- US Federal energy management programme (includes: lighting, standby power on electronic products).
- Energy+ process for domestic cold products (a voluntary co-operative project that operates across Europe - see www.energy-plus.org/english/ for details).

3.7 Fiscal Incentive

This is a scheme set up by Government whereby an organisation receives a financial incentive, generally a rebate on tax, if it buys a product that meets a specified minimum standard of energy efficiency which is above any regulatory standard or the market average. This standard can act as best practice. This will be set at national level provided the tax on which the rebate is offered is national. Where the tax is European-wide e.g. VAT, there must be EU agreement.

Example

- UK Enhanced capital allowances (includes: lighting, cooling equipment, boilers, motors, drives).

4 Notes to the Table

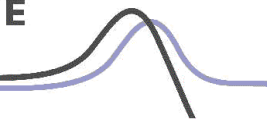
All types of energy standards depend on both an agreed test (or ranking) methodology and for testing of compliance to be in place to be effective. Regulatory standards also depend on sufficiently strong penalties to ensure compliance. Voluntary standards need to offer sufficient benefit (or disbenefits from non-participation) to get the wide spread involvement that will make them effective. Also, information about standards needs to be effectively disseminated well in advance of when they need to start taking effect.

Setting energy standards or labels is complex and involves consideration of many factors. For example, in some sectors a particular technology may be mature but in the process of being replaced by new innovations. In these circumstances, the standards applying to the old technology will no longer be effective in limiting energy use in that new application².

This means that it is important to look ahead to emerging technologies and look at the whole market, to be sure that an appropriate mechanism, the correct standard levels and review dates are chosen.

NB the analysis in Table 1 below represents the current situation for the UK - operating with current EU directives. The Framework Directive for the Eco-design of Energy Using Products (EuP Directive) has been adopted recently and the first implementing of legislation for specific products is expected in 2008. One objective of the Directive is to make setting minimum energy performance standards quicker so the situation will change once this takes effect.

² One example of this is TVs (and display technology) where conventional CRT units are now being replaced by plasma and LCD screens (the proportion of CRT TVs is expected to drop from current levels of over 90% to roughly 50% by 2010). LCD screens are themselves expected to be replaced by newer technologies such as FED (Field Effect Diode) and OLED (Organic Light Emitting Diode) in the future.



5 Conclusion

On the basis of this summary analysis, there is no single approach which is best for all circumstances. Some of the key deciding factors in deciding on appropriate standard setting are listed in Table 1 below. Also within each approach there are options which will influence its cost and effectiveness - careful design can maximise the benefits and minimise the disbenefits.

Table 1: Factors in appropriate standard setting

Type of approach	Time to implement	Administrative cost to Government	Direct cost to industry	Degree of compliance	International aspect - affect on competitiveness	Comments on Pros and cons
Minimum standard						
Minimum energy performance standards (MEPS)	Long lead time ³ . Once set up including a forward timetable for review of levels may make timescales more manageable.	Could be high.	Could be high - depends on where level is set relative to current practice and how long manufacturers have to respond relative to product life-cycle.	High – if accepted by industry – see comments	Most suitable for sectors where products are manufactured in the EU/UK or for products that are customised in some way for the UK. If applied to products which are driven internationally, there will be trade implications.	Probably most suitable for sectors where the technology is relatively mature so change is predictable and incremental. More suitable for relatively long-lived products with lower turnover. It may be very difficult to convince some industries, where MEPS have not been in place, that these are necessary or appropriate. If levels are set to a level with which the industry disagrees it may mount a legal challenge against the EU. This is most likely in high growth sectors where the technology has not matured
Fleet average standard	Long lead time to set up. Need to include review timetable to ensure remains current.	1) If Gov run scheme could be high. 2) if voluntary scheme, low	Likely to be lower than MEPS as can still sell low efficiency product as long as some high sold to compensate plus setting target level some years in advance allows manufacturers to plan ahead. If voluntary scheme also add cost of administering so higher	High	More flexible than MEPS so more suitable for international products.	Greater flexibility than MEPS in terms of both the range of products which can be sold and setting a target well in advance means that the costs are reduced and may be suitable for a wider range of products. Not suitable for immature sectors where the technology changing very quickly. The potential difficulty in getting the industry to accept the standard covered under MEPS above may also apply here.

³ At present - before implementation of the EuP directive.

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Type of approach	Time to implement	Administrative cost to Government	Direct cost to industry	Degree of compliance	International aspect - affect on competitiveness	Comments on Pros and cons
Minimum standard by voluntary agreement	Should be shorter than compulsory measures	Low - Government not formally involved although likely to influence levels.	Lower - industry sets level where cost is acceptable to it	Lower - this varies depending on the scheme.	Effectiveness will depend on the scope of agreement relative to the nature of market. When the market is internationally driven a UK agreement will not be very effective.	Quicker to put in place and lower cost than alternatives. More suitable for technologically-immature products. Compliance level depends on the power of organisation making the agreement - possible for companies who don't wish to comply to leave eg trade association. Being forced to leave the organisation may, or may not be a real penalty depending on the power of the organisation.
Best Practice						
Mandatory labelling	Long lead time. Once set up including a Forward timetable for review of levels may make timescales more manageable	Could be high.	Relatively low	High	May be applied in all types of market.	Can raise awareness amongst consumers as label is universal. Improved if review process inbuilt or products may end up all in the highest label category (eg EC refrigerators). Doesn't necessarily set best practice by itself but may allow best practice to be set.
Voluntary labelling (endorsement label)	Should be shorter than compulsory measures	Non Government scheme – low Government not formally involved although likely to influence levels. 2) Government led scheme, could be high	Lower than mandatory	Variable	May be applied in all types of market.	Schemes vary widely and different factors affect effectiveness eg: US Energy Star for computers sets values which are very easily achievable and is very widely adopted - very small proportion of market doesn't achieve this. So not effective as best practice EU Ecolabel difficult to achieve - relatively few manufacturers meet so consumer recognition is low - could be argued also not effective as best practice
Procurement standard	Shorter than legislation	Medium	Low	N/A	May be applied in all types of market.	Flexible incentive to manufacturers to provide high performing products. Needs to be reviewed regularly to be effective.

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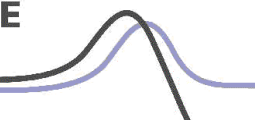
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MARKET TRANSFORMATION PROGRAMME

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Type of approach	Time to implement	Administrative cost to Government	Direct cost to industry	Degree of compliance	International aspect - affect on competitiveness	Comments on Pros and cons
Fiscal incentive	Reasonably short lead in time once initial legislation is in place	Medium	Low	N/A	May be applied in all types of market.	Flexible incentive to manufacturers to provide high performing products. Needs to be reviewed regularly to be effective.



Related MTP information

Relevant Briefing Notes

Briefing Note BNXS03: Framework Directive for the eco-design of energy using products (EuP Directive).

Briefing Note BNXS04: Standards and their relationship with the products covered by the MTP.

Briefing Note BNXS37: Overview of EC Framework Directive 'The indication by labelling and standard product information of the consumption of energy and other resources by household appliances' (the EU energy label framework directive).

Report

Comparison of UK and Best International Energy Standards as at March 2006

Changes from version 1.0

- Summary added.
- Formatting changed.
- References updated.

Changes from version 2.0

- References updated.

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