Product efficiency policy.
An International comparison.

SUMMARY

DOWNLOAD THE FULL REPORT HERE: http://is.gd/Coolproducts

coolproducts
for a cool planet

coolproducts
for a cool planet

For a stronger, faster Ecodesign Directive to help save the climate & money.

The Coolproducts for a coolplanet coalition is a group of NGOs from all across Europe who are working to ensure the EU Ecodesign Directive and related Energy Labelling policies are as ambitious as possible.

The full report was commissioned by Coolproducts member the European Environmental Bureau and ECOS and written by Paul Waide, Waide Strategic Efficiency Ltd.

FEBRUARY 2013

www.coolproducts.eu

DOWNLOAD THE FULL REPORT HERE:
http://is.gd/Coolproducts

DOWNLOAD THE FULL REPORT HERE: http://is.gd/Coolproducts

Product efficiency policy.
An International comparison.

Equipment energy efficiency policy measures are one of the key elements underpinning international policy measures for energy efficiency. Since the early 1990s equipment energy efficiency standards and labelling programmes have become a mainstay of international energy and industrial policy.

The number of countries implementing such schemes has risen to over 70, including all the world's major economies, and this policy instrument is applied in economies comprising over 80% of the world's population and a larger percentage of its GDP.

In the EU it is estimated that full exploitation of the regulatory potential of the Ecodesign Directive could produce net annual cost benefits of €90 billion and savings in annual CO2 emissions of 400 MT, equivalent to the expected benefit from the EU Emissions Trading Scheme (ETS).

Over the last 20 years considerable international experience has been gained regarding best practice in the design and implementation of equipment energy efficiency programmes. This experience addresses all aspects of programme design and implementation including:

- the legal foundation, administrative processes and program resources
- development of mandatory (or voluntary) energy efficiency standards or requirements (also called minimum energy performance or MEP's)
- energy performance test procedure design and maintenance
- communications
- regulatory compliance
- monitoring and evaluation
- impact assessment

The report presents a summary of this experience and compares the EU's programme to those operated in the peer economies of Australia, China, Japan and the USA to ascertain where the EU programme is most successful and in what ways it could be improved by adopting international best practice. In particular it focuses on:

- administrative processes, capacity and throughput
- policy coverage
- stringency
- compliance and rigour
- monitoring and evaluation of impacts

Full exploitation of the regulatory potential of the Ecodesign Directive could produce net annual benefits by 2020

€90 billion could be saved in net annual cost benefits

400 MT C02 emissions could be saved every year
Reference: Ecofys, 2012

Could double expected benefits of the Emissions Trading Scheme
Reference: Ecofys, 2012

Principal findings

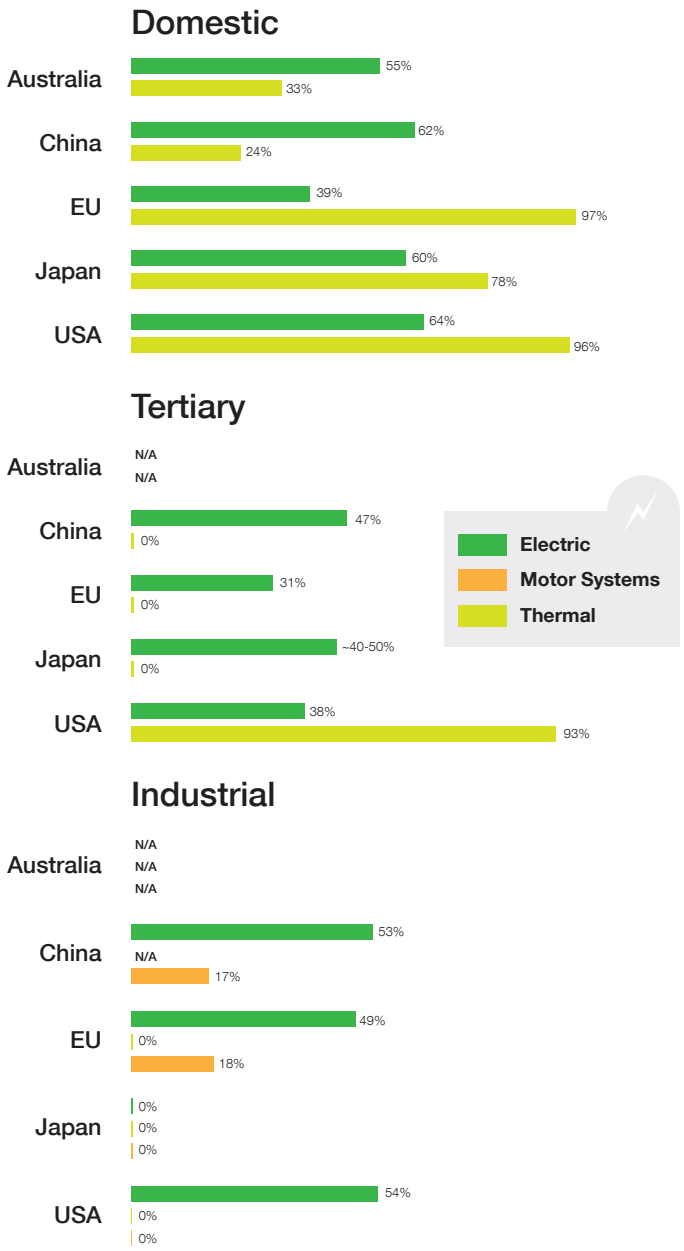
Although the EU's energy labelling programme dates back to the mid 1990s and has had a significant positive impact on most of the products it has been applied, the EU was relatively late in implementing minimum energy performance standards (MEPS) (through the Ecodesign Directive) compared with the peer economies.

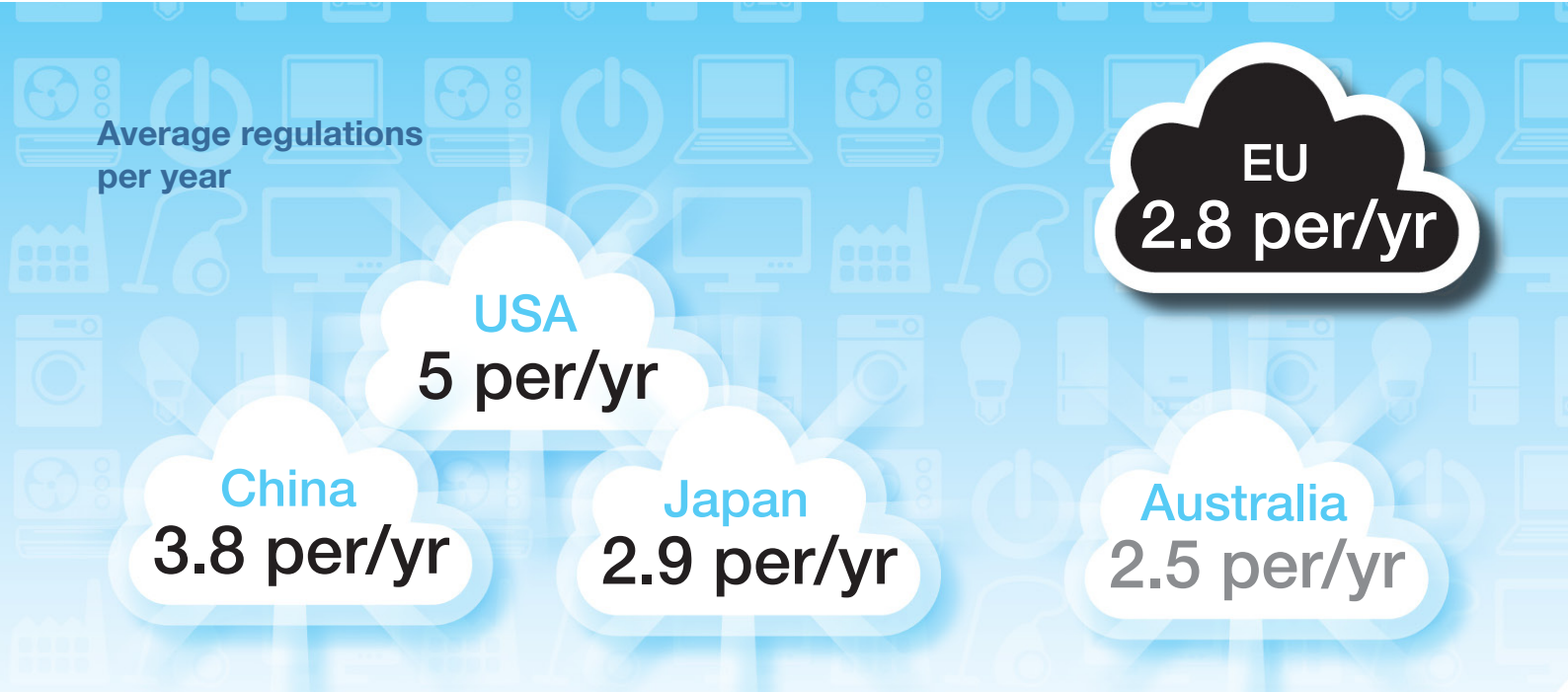
The other economies established legal frameworks to impose product energy performance requirements considerably earlier than the EU and hence have made more progress in issuing regulations. This is reflected in the disparity in the relative shares of equipment energy consumption which is subject to MEPS in the peer economies.

Taking mid-2010 as a benchmark year the EU had the lowest proportion of its total electricity consumption covered by MEPS in the domestic and tertiary (service) sectors, Table E1.

Nonetheless in some ways the EU's programme is a leader among the peer economies. It is the only one designed to address all environmental impacts of energy using and energy-related products. It also has the widest mandate regarding the factors which may be addressed in the regulations in that Ecodesign and energy labelling measures can be set for all types of non-transport energy-using or energy-related products; however, in practice there is considerable scope in the other economies to address similar equipment types while the other economies have been more productive in setting regulatory measures than the EU has to date.

Table E1 Estimated shares of energy consumption subject to MEPS in 2010 for the peer economies





Regulatory throughput

The pace at which regulations and other policy measures are developed and adopted (the throughput) is one of the key parameters of a programme's effectiveness. In this regard the EU seems to be considerably behind the other peer economies although some of these have also had to overcome difficulties in the past.

Australia has managed to set 2.5 regulations per year since the programme began in 1999 and 5.7 per year over the last 3 years. The pace at which China has been adopting MEPS and labelling has been increasing in recent years, averaging 3.8 regulations per year since 2000 but increasing to six per year for the last few years. Japan has set 2.9 regulations per year since 1995 but was expecting to accelerate from 2012 onwards. The USA has been setting approximately five regulations per year over the last six years and is expected to continue at this rate over the next few years.

By contrast the EU had adopted by the end of 2011 just 17 MEP's and labelling regulations. Following the passage of the Ecodesign Directive the average rate of adoption has been 2.8 regulations per year. With 6 implementing measures and a voluntary agreement in 2012 and a promised record year in 2013, the average annual adoption rate in the EU may soon improve.

The comparative tardiness of the EU process is a major handicap to its overall effectiveness and puts in question the ability of the EU's product policy to make the desired contribution to the EU's broader 2020 policy target for energy efficiency.

In general the most significant delays have occurred in the consultation phases after the preparatory studies have been completed. The cause of delay is thought to principally be due to combinations of the following factors:

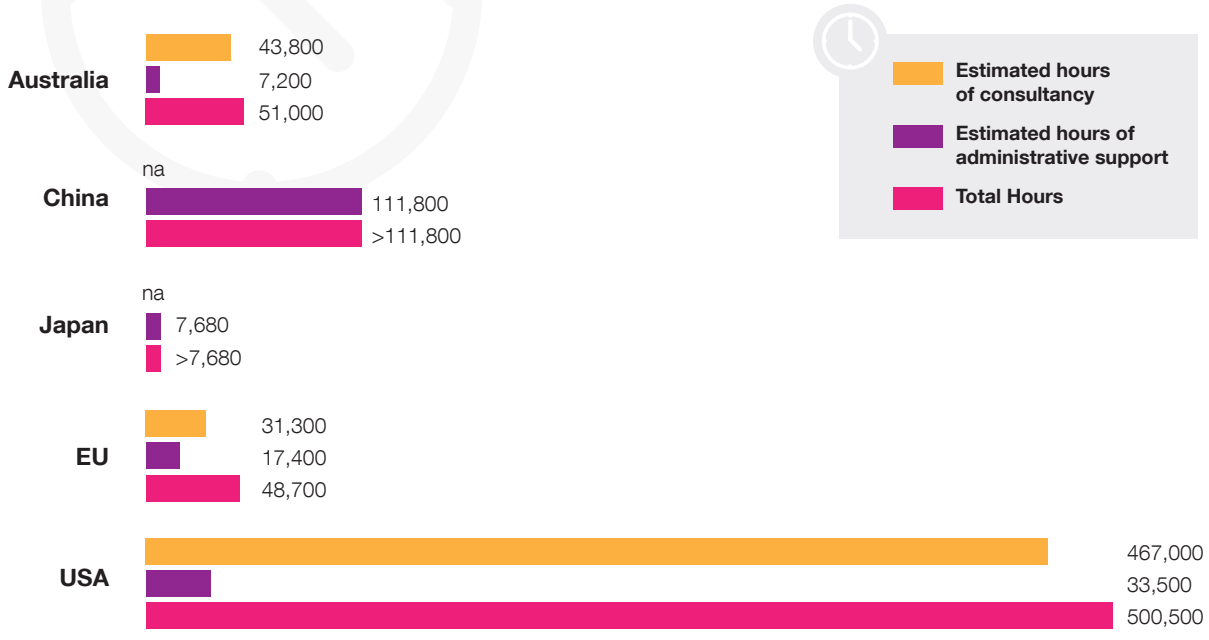
- lack of consensus over the preparatory study results, sometimes caused by inadequacies in the studies or lack of sufficient data, partially stemming from inadequate market monitoring
- lack of administrative capacity within the Commission, sometimes worsened by staff rotations and personnel changes, combined with burdensome regulatory procedures
- lack of readily available and adequate product performance measurement methods
- lack of robust deadlines in consultation and decision making processes and a need for more streamlined procedures to accelerate the different stages of the regulatory development process (consultations, negotiations with stakeholders, finalisation, mandating of measurement standards, etc.)

Administrative and technical capacity

Limited administrative capacity and inadequate budgets to hire consulting support are the key factors that limit the rate of policy measure development in the EU compared with the peer economies. Based on what is known about each of the peer programmes their estimated human resources, expressed in terms of annual person-hours of administrative and technical (consulting) support are shown in Table E2. Additional resources would be allocated for labelling. For the size of its economy the EU commits substantially less resources to support its programme than any of the peer economies.

While these values are estimates it is interesting to note that the US figure is roughly 10 times that of the EU despite both having similar sized economies and similar magnitudes of benefits to achievable from optimising their equipment energy efficiency programmes. The estimated person-hours per year for development of the Chinese programme are over twice those of the EU's. The Japanese and Australian programmes have the lowest person hours committed for administration but the total Australian effort when consultants are added is roughly equivalent to that in the EU despite having a population of only one 25th of the EU's and a much smaller economy. These figures suggest that the EU and possibly Japan are lagging behind the other peer economies when it comes to human resource allocations to the development and administration of their equipment energy efficiency programmes.

Table E2 Administrative and technical support for the development and administration of equipment energy efficiency regulations by peer economy– estimated hours per year



Note, the Australian, Chinese and European values include estimates of all time spent at the economy-wide level for the development of all equipment energy efficiency regulations, including MEPS and labelling. By contrast the US figures are just the estimated time spent on the development of MEPS.

Stringency

Comparison of the stringency of the energy efficiency regulations in place in the peer economies is often complicated by differences in how energy efficiency is measured and defined. Nonetheless in many cases it is possible to either directly compare policy settings or make adjustments for the differences to allow comparison.

To date efforts to make such comparisons have usually been piecemeal and so the information is only available for some product types. These have tended to show that the regulatory measures in place in one of the EU, Japan or the USA are likely to be the most stringent for any given product type.

However Australia's policy of setting the stringency of their regulations at the same level as the most stringent of those in place among their leading trading partners is likely to mean their regulations are as stringent as anyone's across the set of products which they regulate.

In some cases, such as for room air conditioners in Japan, there is a very significant difference between the most stringent policy settings and those applied elsewhere. By contrast, the EU has often led the field in the breadth of applicability of their policy settings e.g. being the first of the peer economies to adopt a horizontal standby power limit and extending it to Network standby power limit in 2013.

Compliance and Enforcement

Australia has had the most proactive approach to compliance and enforcement among the peer economies and has carried out relatively extensive and systematic product energy performance verification testing and retailer labelling compliance surveys over many years.

The Australian authorities and more recently their US counterparts have been willing to prosecute non-compliance and publicise the findings to maximise the deterrent effect. Although a small number of EU countries and jurisdictions have done likewise, proactive enforcement of the energy labelling and Ecodesign Directives is still rare among the EU Member States and the willingness to take legal action against non-compliant suppliers is rarer still. Enforcement of compliance remains an area of weakness in the implementation of the EU's policy and one where there is scope to learn from international experience.

Monitoring, evaluation and impact projection

The level of efforts to monitor trends in regulated product markets and evaluate programme impacts varies across the peer economies, although the efforts in Australia would appear to be the most consistent and systematic. Apart from tracking sales of regulated products by their efficiency, features and energy consumption as measured under standard test conditions, the Australian authorities have regularly conducted detailed end-use metering studies to confirm that the theoretical savings are being realised in practice and to inform the development of their energy performance test procedures.

Such studies have also been conducted within the EU but have tended to be piecemeal in nature and there is no consistent and systematic effort to gather such primary data for use in regulatory evaluation and design processes. It should be noted the same data will also support efforts to forecast programme impacts and in this regard Australia and the USA have developed the more comprehensive regulatory impact forecasting tools. While some EU countries have elaborated similar tools, e.g. within the UK's Market Transformation Programme, they are not as complete or as well elaborated at the EU scale.

DOWNLOAD THE FULL REPORT HERE: http://is.gd/Coolproducts

Recommendations

The EU needs to invest in the design and implementation of the Ecodesign and energy labelling Directives if it is to realise their impressive potential for cost-effective energy and carbon savings. The most urgent need is to **bolster administrative and technical resources by increasing the number of desk officers administering the development of energy labelling and Ecodesign measures** and by **raising the budget available** to sustain technical support for preparatory studies, data collection, standardisation development, forecasting, monitoring and evaluation. It may also be possible to address part of the administrative capacity shortfall by farming out some functions to other agencies or partners.

The Commission and Member States should **consider adoption of a binding administrative schedule** that fully clarifies well in advance all the regulatory design, standardisation and consultative procedures and indicates to stakeholders when they will have an opportunity to engage in or comment on the regulatory development process and when the process will conclude.

An associated regulatory development plan should be developed (and frequently revised) that clearly indicates the regulatory development resource requirements, provisional estimated outcomes in terms of energy savings, environmental impacts and economic effects and the impact on the share of total product energy use subject to energy labelling and Ecodesign measures.

The strength of monitoring and compliance activities needs to be substantially enhanced. Most critically efforts should be intensified to ensure adequate resources are committed to compliance at the Member State level and that synergies are explored that would facilitate greater cooperation among national market surveillance authorities. Given the low level of compliance activity seen to date in the EU it may be appropriate for the Commission to be given a coordination role and for legal obligations on the scale of compliance activity to be established.

Other recommendations are:

The Ecodesign preparatory studies should consider the application of learning curves to estimate and account for the expected rate of technological and production cost progress associated with higher efficiency design options and the use of this in the techno-economic and least life-cycle cost determinations. Application of a shadow price for carbon emissions should also be considered in the life cycle cost determinations.

The Commission should explore options to **strengthen the technical foundations of the preparatory studies by**: organising the development and maintenance of product energy and cost simulation tools to be used to examine proposed design changes; conducting product tear -down analyses to establish the bill of materials and associated production costs, establishing longitudinal market and field data collection; farming out the impact assessments to a dedicated consultancy that applies the same approach across all product types; developing a long-term bottom up energy consumption forecasting tool for products in the EU based on stock modelling approach.

Efforts should be taken independently of the preparatory studies to **benchmark EU product regulatory energy efficiency settings against those applied in peer economies** and clarify reasons for the differences observed

The Commission should consider **the development of a comprehensive and properly resourced standardisation plan and schedule** that anticipates all test procedure needs ahead of regulatory needs and ensures that lack of adequate energy performance measurement standards is not a cause of delay in the regulatory schedule. Efforts should be made to work with the standardisation processes in the peer economies to share the developmental burden, enhance international harmonisation and facilitate policy benchmarking and trade.

Stronger efforts should be made to integrate the energy labelling specifications into green public procurement plans potentially including clear targets or obligations across the EU and similarly, to leverage other economic instruments to accelerate the adoption of advanced and innovative technologies.

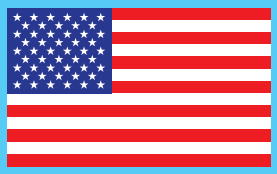
The EU should consider options to **share regulatory development efforts** for demanding or green-field (new) product categories with administrations in peer economies.

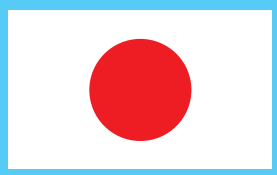
What can Europe learn?

Europe would benefit from emulating aspects of:

- **China and the USA** in the breadth and scope of their MEPS coverage
- **the USA** in the rigour of its technical analyses which include: full product tear-down analyses to better estimate cost (e.g. the bill of materials) and performance factors, development and application of dedicate energy performance simulation software; the application of learning curves to estimate the likely future change in product costs over the prospective regulation lifetime; and the application of shadow values for carbon emissions in the techno-economic optimisation analyses
- **Japan** in the stringency of some of its measures and the dynamism of its policy settings
- **Australia** in the rigour of its compliance activities and of its end-use metering, forecasting, and market monitoring activity and impact assessments

- **China and the USA** in the scale of human and administrative resources committed to programme design and administration
- **the USA** in the scale of the budget committed to technical support activities
- **China** in the scale of its green public procurement efforts linked to its energy efficiency endorsement label
- **the USA** in its rigorous regulatory development process linked to a pre-determined time frame and highly structured consultation and dialogue process
- **all** of these economies in the speed and efficiency with which they develop and issue regulations but especially the USA in recent years, which like Europe has an elaborate and formalised analytical and consultative process





DOWNLOAD THE FULL REPORT HERE:
www.goo.gl/DuiOT

www.coolproducts.eu