

Overcoming fear of the unknown . . . rescaling categorical energy labels in Europe

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Abstract

Categorical energy labels are one of the clearest and most robust policy measures used to inform consumers about product energy performance at the time of purchase. Many countries and regional economies use categorical labels to pull their markets toward better performing, more energy-efficient models. However, as technology evolves, so must the categories on the label in order for the label to retain its relevance. Europe instituted a temporary fix to its Energy Label in 2010 by creating new high-efficiency categories with “+” symbols, but it was understood this was not a long term solution and new approaches are being discussed. One option would be to retain the existing or similar Energy Label design, but shift the current market products from today's highest categories to the middle of a new scale. Some stakeholders have expressed concern over this approach, citing fear over consumer confusion and unintended market consequences. This paper discusses this issue and presents case studies on label rescaling in Australia and China, showing it is both practical and possible, and did not result in market chaos. For example, China's Energy Label has rescaled several products since it was first implemented in 2005. Stakeholders are comfortable with the revisions, since the key issue for them is fair competition in the market and the revision helps to ensure that. This paper points to the policy maker's transition strategies in these markets, identifying the best practice that could be applied in Europe such as the steps taken to ensure market surveillance authorities were able to differentiate between the labels and algorithms used to determine compliance. Rescal-

ing is not something that European stakeholders should fear – rather, Australia and China have demonstrated that it offers policy makers a powerful tool to ensure the labels continue to communicate clearly with consumers and help markets to evolve and improve their energy-efficiency.

Introduction

In the market of appliances as in any market, participant bargaining power is affected by information asymmetries. End-use equipment energy efficiency markets are not any different with many governments forcing mandatory systems of labelling upon their markets to more equitably share important information relevant to those equipment purchasing decisions.

HOW DO LABELS WORK?

An Energy Label informs and encourages consumers to buy more efficient products and manufacturers to put more efficient products on the market. Consumer understanding of the information presented on the label affects their willingness to buy efficient products. Labels efficiently presenting all the necessary information to make an informed choice are really the lever that can make energy labels an efficient market transformation tool (Wiel and McMahon 2005 and many others referenced in Molenbroek et al. 2013). Indeed the opposite is also true; if the impact and understanding of the label on consumers is poor, the motivational effect on manufacturers to place top class efficient products in the market will also be diminished (Du Pont 2000).

The potential reduction to their energy bills by a highly efficient product means labels are well liked and supported by consumers, as demonstrated by their willingness to pay a premium

for top-class products (Langley 2012, Navigant for CLASP 2013). It makes previously invisible operational energy use and associated costs more tangible to consumers, thus unlocking their buying power. A label showing a product as top-class enables suppliers to ask for a higher price, especially if the scheme is managed by a highly credible institution such as a government agency.

This paper focuses on categorical labels, which range products on a scale, allowing consumers to compare between similar products, as opposed to endorsement labels that distinguish products that meet a set of criteria. The EU, Chinese and Australia energy labels are all three examples of categorical labels, whereas an example of endorsement label would be the Energy Star scheme.

BACKGROUND – A LITTLE HISTORY ...

The European Union started as far back as 1979 to establish the framework of an energy labelling scheme for household appliances¹. Categorical labelling was introduced by the *Council Directive 92/75/EEC of 22 September 1992 on the indication by labelling and standard product information of the consumption of energy and other resources by household appliances*, which established the A to G scale and the general design of the EU Energy Label as we know it today, although still in black and white. Product specific Directives were then adopted under this framework Directive, starting with refrigerators and freezers².

In 2010, the 1992 Energy Labelling Directive was recast and *Directive 2010/30/EU of the European Parliament and of the Council of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products* was adopted, broadening the scope of the scheme, updating the design of the label and introducing illustrative icons (pictograms) in place of the former explanatory text to indicate which product performance parameter is being referred to. The discussion preceding the adoption of the new Directive centred on the question of the rescaling. Finally, instead of rescaling, the decision was taken to add new higher efficiency classes above the “A”, in the form of “A+”, “A++” and “A+++”. One of the consequences was that the scale would vary across products. Most of the revised labels would then range from A+++ to D but the scale for the television label adopted in 2010 was A to G³. Consumer research demonstrated since then that there is a significant difference in the motivational effect of an A+++ to D scale compared to A to G. When A is the top of the label scale it is much more motivating to consumers than when A+++ is (Navigant for CLASP 2013, LE and Ipsos 2014). Several voices from industry have now – informally but in various forums

– endorsed these results and are in favour of a rescale of the energy label.

The rating scheme introduced by the 1992 Directive, reflective of school grades, resonated well with Member States, suppliers and consumers alike because it communicates comparative rating in an easy-to-understand way. The fact that it has been copied in other regions seems to attest that it is perceived as operating well. However, the EU label has struggled to keep the original rating points relevant to the ever-improving technologies available on the market. For more than 30 years, the school-room grading system (including the advent of + grades) has proved successful but it cannot continue with only short-term tinkering around the grade scale. The upcoming revision of the EU Energy Labelling Directive must be the occasion for a real rescaling and for some long-term thinking.

Barriers to rescaling in the EU – the fears: what could possibly go wrong?

RESCALING AND WHY IT IS NEEDED?

In order to keep the label understandable, accurate and relevant over time it is necessary to maintain a visible differentiation between products offered on the market. However, if the label reaches its objective, the market will overtime be pulled towards a better efficiency. In light of those observations, it appears that the only two strategies are to have an open scale (or virtually open if the best level represented on the scale is unreachable, e.g. absolute energy consumption with the highest level being zero consumption) or to periodically rescale the label.

In the case of the European A–G label, the scale was closed at the top of the performance scale. Over time as technology development occurred, this design limitation led to a bunching of all models in the top or top few classes and the label lost its power of differentiation. The value of the 7 letter scale of A–G was compromised as only a few classes were available to some white goods and other equipment types. The addition of “+”, “++” and “+++” was a compromise to add new higher categories, opening the scale to grades above A. But there is a limit to how long this interim solution can stave off rescaling. Consumer research shows that this was not an ideal solution (Navigant for CLASP 2013) and adding new letters or characters, is not a realistic option if the A to G scale is to remain the touch-stone for the EU label.

WHAT ARE THE OPTIONS?

To accompany the rescaling of an energy label, policy makers elsewhere around the world have used several options in terms of making the transmission of a new rating scale visible to consumers:

- Colour or other non-substantial changes in appearance: shows consumers that something has changed but without explaining what.
- Words or icons to indicate that this is a revised label. This option gives more indication on what has changed than the previous one but may be difficult to apply in a multi-lingual environment.

1. COUNCIL DIRECTIVE of 14 May 1979 on the indication by labelling of the energy consumption of household appliances (79/530/EEC).

2. Commission Directive 94/2/EC of 21 January 1994 implementing Council Directive 92/75/EEC with regard to energy labelling of household electric refrigerators, freezers and their combinations.

3. Article 3 of Regulation 1062/2010 on the energy labelling of televisions establishes that versions of the labels including A+ were to enter the market in January 2014. According to this article, class A++ shall appear in 2017 and A+++ in 2020.

- Numbers such as a year or date. This is the most direct indication that something has changed in time (Australian focus groups testing shows it works much more effectively than the other formats with consumers [Winton 2013]). Concerning this option, the example of ENERGY STAR Most Efficient + year⁴ can be given: when a too large part of the market had earned the ENERGY STAR label for certain products, the label had lost its power to differentiate the best products in the market. In order to re-enable the label to pull the market towards a higher efficiency, the US EPA decided to launch “ENERGY STAR Most Efficient” in which the year of the criteria is indicated.
- Finally, policy makers may choose not to signal the transition in any way, or in such a discreet way that most consumers probably won't notice. For example, when ENERGY STAR updates its criteria for a product like televisions, the blue ENERGY STAR label does not change from one set of criteria to the new one, but manufacturers using the label must apply the new criteria from its effective date.

Of course a combination of some of the above options could also be considered. Additional options can also be developed through the use of new digital media. A QR code on the label could for example lead consumers to a web page indicating whether this product's label is the up-to-date version or the previous version. If it's the current version, which is newly implemented, the webpage could also explain the relationship to the previous label.

It is fair to say some of these options are more successful than others in communicating change, and various stakeholder groups may measure success differently.

WHAT ARE THE POTENTIAL IMPACTS?

On consumers

The whole idea motivating a rescaling is to maintain the positive effect of the label on and for consumers. Rescaling a label when products are bunched in the top levels renews the support brought by the label in identifying the best performing products. Not rescaling on the contrary gives a wrong signal to consumers as some of the least efficient products on the market will finally be in the top classes. Consumers may buy – and even be willing to pay a higher price for – a model that they think is one of the most efficient ones because it is labelled in the top class (or, in the case of the “+”, at least what they think is the top class) whereas this particular model actually is among the least efficient and maybe just passes the minimum efficiency requirement. In the case of a closed scale, rescaling is thus essential to avoid transforming a tool made to empower consumers into a support for misleading information.

If the option is chosen to make the rescaling visible on the label, it can also be an opportunity to make other revisions to improve the information that is conveyed to the consumers, or the way it is conveyed.

When considering a rescaling, the main concern of policy makers but also manufacturers, retailers and of course consumer associations is the impact on consumer understanding and

willingness to buy. The transition from the old label to the new one is of course when the risks of confusion are the highest, with the two versions of the label being displayed at the same time. Different strategies have been adopted by economies that have already rescaled their respective energy labels and this paper presents the examples of China and Australia.

On manufacturers

Mirroring the impact on consumers, the main impact on manufacturers is that a rescaling re-establishes a differentiation on the field of efficiency, and the competition that this creates. Rescaling promotes fair competition, avoiding an undeserved promotion of the least efficient products in the top efficiency classes.

Manufacturers may be concerned that a rescaling will affect profit margins because fewer products will be in the top classes and consumers may not be willing to pay as much for a product that isn't a top-rated product. In the long run, however, not rescaling simply undermines the credibility and effectiveness of the label and being a top class efficiency product would no longer provide any additional value.

One negative impact of a rescaling is of course the extra burden of changing the label in the production itself but also on communication and marketing material (catalogues, website ...). To minimise the disruption, special care must be given to the details of the transition phase and new digital media can be applied such as QR codes that could not only ensure consumers get the most current label, but also additional information for making comparisons at the time of purchase. It should be noted however that there is to our knowledge no studies assessing how consumers would react to QR codes on an energy label.

Some manufacturers also expressed concern that consumers or retail stores may return products because the information on the label is not what they expected (different from what they had seen online or on display in the shop) or because they want a product with the new label. These concerns are made more vivid when the introduction of new elements on the label is discussed, and in particular the year of manufacture (Winton 2012). This has not been a significant issue in the labelling programme of the two economies we profile in this paper.

On retailers

As an interface between manufacturers and consumers, the impact of a rescaling on retailers would reflect the impact on their clients and suppliers.

The main effect is however probably the training and communication needs that a rescaling implies. Indeed, in particular during the transition phase between the old and new labels, retailers have to be able to explain the situation to consumers, on their website and in their shops, and help customers compare models if needed.

Like manufacturers, retailers may be concerned about potential complaints and product returns linked to the change of label. It does not seem to be a real life issue in the experiences analysed in this paper, but a rescaling may imply some extra rigor in terms of stock management.

Finally, the burden put on retailers strongly depends on the details of the transition period and obligations put on different operators in the supply chain.

4. http://www.energystar.gov/index.cfm?c=most_efficient.me_index



Figure 1. CEL Design – Note that the China national standard (GB) and its version (2011 represents year of issue) appear at the bottom of the label.

Gaining confidence – Learning from Australian and Chinese experiences

DESCRIPTION OF THE SCHEMES

China Energy Label

The energy labelling programme was established in 2004, with the first labels appearing on products in the Chinese market in 2005. The main reasons that encouraged policy-makers in China to create an energy labelling programme were⁵:

1. Improving market monitoring, verification and enforcement (MV&E) on product energy efficiency by requiring the registration of the energy performance data of covered products, tested by accredited laboratories.
2. The “pull” effect: with energy efficiency information shown on the label, not only are consumers better informed and enabled to buy efficient products, but also manufacturers are encouraged to produce higher efficiency products to differentiate themselves in the market and perhaps earn a higher profit margin thanks to consumer general perception of higher classes being better quality products with lower running costs.
3. The broader impact on society: the label informs consumers about energy efficiency and energy conservation in a way that relates to their daily life. This helps with broader national policies working to promote energy savings across China.

The China Energy Label (CEL) is based on China's energy efficiency standard (minimum energy performance standards),

and categorises the energy performance of products on the basis of products in the market. A decision was taken to only represent the efficiency levels that are allowed in the market as this would simplify MV&E activities in China. And, due to the physical size of the label being limited, efficiency levels below the current MEPS are not shown on the label's scale.

The CEL has either 3 or 5 levels or “tiers”, with Level 1 being the most efficient and Level 3 or 5 being the entry level. The number of levels, 3 or 5, is based on the specific situation of each product, i.e., if the efficiency range is large enough to differentiate 5 levels taking into account allowances test for tolerances and uncertainties, then 5 levels are defined, otherwise 3 levels are used.

It should also be noted that energy efficiency standards in China include not only the minimum energy performance requirements themselves but also the test method that shall be used to measure the performances of the product. When the standard is revised, the modifications can either only affect the required minimum performance or also include changes to the test method.

More information on the China Energy Label can be found at: <http://www.energylabel.gov.cn/en/Introduction/index.html>.

Australian energy label

In 1983 the following objectives for labelling were formally endorsed by all nine energy ministers of the Commonwealth, State and Territory governments:

- “to enable the consumer to make an informed choice between energy consuming products (a higher initial purchase price may be offset by accumulated energy cost savings over the appliance's lifetime);
- to provide an incentive for manufacturers in the medium term to design and market appliances with improved energy performance, and consequently better tailored to consumers' requirements;
- to promote energy conservation on a national scale and to retard growth in energy demand” (Wilkenfeld 2003).

Following the example of New South Wales and Victoria States, more and more States and Territories legislated for labelling for refrigerators, freezers, dishwashers, air conditioners, clothes dryers and clothes washers and the scheme became effectively national. Nowadays the Commonwealth government works with the State and Territory energy agencies to coordinate the program since it still relies on complementary legislation in each State and Territory, as the Commonwealth government has no regulatory powers in this area, but in practice it can function as a national scheme.

Although the first program evaluation, carried out in 1991 (GWA 1991), identified a need for developing a revision strategy, the actual redesign and rescale only took place in 2000 due to the structural changes that needed to happen for the governance of the program.

In 2000 energy labels for all appliances were rescaled together. Since then, energy labels have been introduced for other products and are rescaled independently for each product in function of the introduction of new energy performance standards or of the evolution of the market. Mandatory registration of products, effective since commencement in Australia, fa-

5. CNIS, personal communication.

cilitates market monitoring so that action can be taken when a large part of the models are bunched near or at the top of the scale. New energy performance standards are then introduced and the label is revised and regraded wherever “bunching” toward the top of the scale becomes a problem. Broad guidelines were developed for the development of new algorithms, including (EES 2004):

- 1 star set as the MEPS level (where relevant)
- use a geometric progression for the star rating system
- set maximum star rating on market at the time of review to be around 3.5 stars
- try to ensure that only limited products on the market will achieve 5 stars within the nominal 5 year period (based on estimates of technology progress in this timeframe).

As illustrated in Figure 2, rescaling has been accompanied by little or no changes to the design of the label because stakeholders value information as presented and did not want radical redesign. The touchstone for the Australian appliance label design remains based around hotel and restaurant ratings. The 2000 rescaling, and each subsequent individual product regrading, have been prepared with extensive consumer research. Changes were only minor because the existing label had been so well understood by consumers. For example, one of the explored options for the regrading at the request of manufacturers was to add more stars to the scale, allowing products to retain the original rating but newer, more efficient products would have many more stars. Consumers rejected this unlimited star rating concept completely (Winton 2008). Not only did it not retain the scale they had become used to, 1 star being basic, 3 stars being acceptably efficient and 5 stars representing luxury, they also rejected the notion that technology improvement could not become part of the labelling scheme. A 5-star hotel 30 years ago is not going to maintain that rating unless research and product development continued. Interestingly the

scaling back option was clearly preferred by Australian consumers who also expressed a desire to see existing appliances significantly downgraded in order to leave “plenty of room for the new ones” (Winton 2013).

In 2000, a design change to the label was adopted, requiring manufacturers to add a green box on the new stock to differentiate it from the existing stock, with the option to add some information in the box to indicate that this was a revised label, give the year of the label and even the rating of the product on the old scale.

RESCALING – MECHANISM AND CONCERNS

China Energy Label

As technology evolves, the energy efficiency of products tends to increase as well. Therefore, if a certain product is among the most efficient on the market and as such regarded as Tier 1 (highest efficiency class) in the year 2005, many of the products on the market in 2010 may well be more efficient and its energy efficiency may then only qualify for Tier 2 (Figure 3).

Normally, the process to revise the energy label in China starts when the revision of the MEPS (i.e., GB Standard) is complete. The energy label revision may involve a variety of stakeholders, e.g., policymakers, industry, and sometimes NGOs. It is widely understood and accepted in the Chinese market that all products produced after the date of entry into force of a revised/updated label shall be labelled to the new version of the China Energy Label, applying the new criteria. However, if products (units) were produced beforehand, they can still be sold on the market using the old label for up to one year after the date of entry into force of the new label. However, after this one year transition period, all products on the market must be labelled with the new label. Thus, during that one year transition period, consumers may find both labels for the same or very similar models on the market.

In terms of visual identification of the different versions, the only direct indication is the reference to the version of the

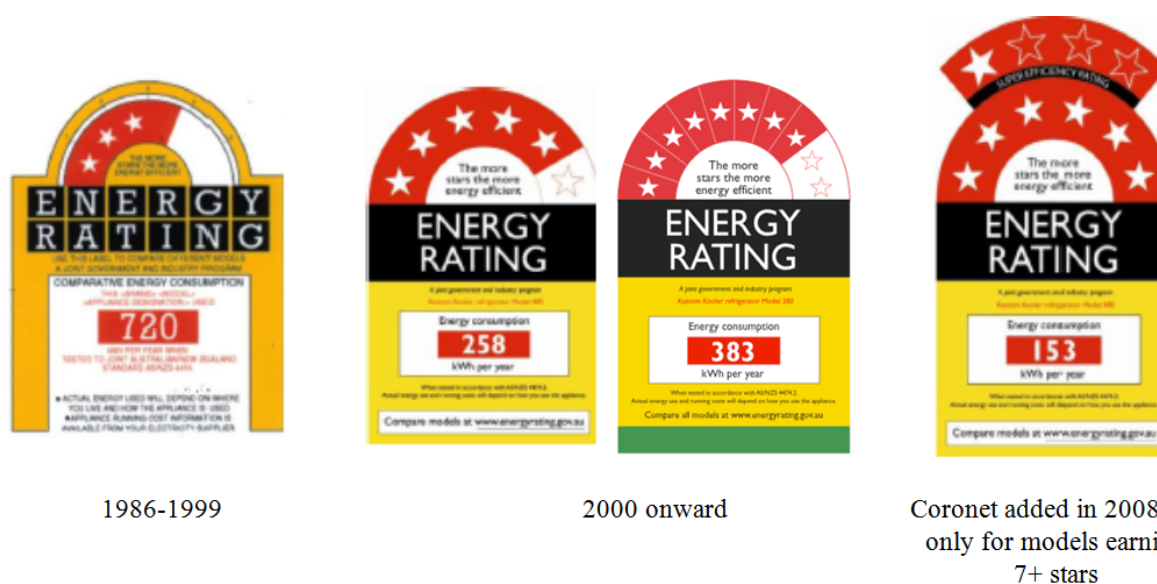


Figure 2. Evolution of the Australian Energy Label over time (Winton 2013) – during 2000 a colored band was added at the bottom of the label to signal that this was a revised star rating.

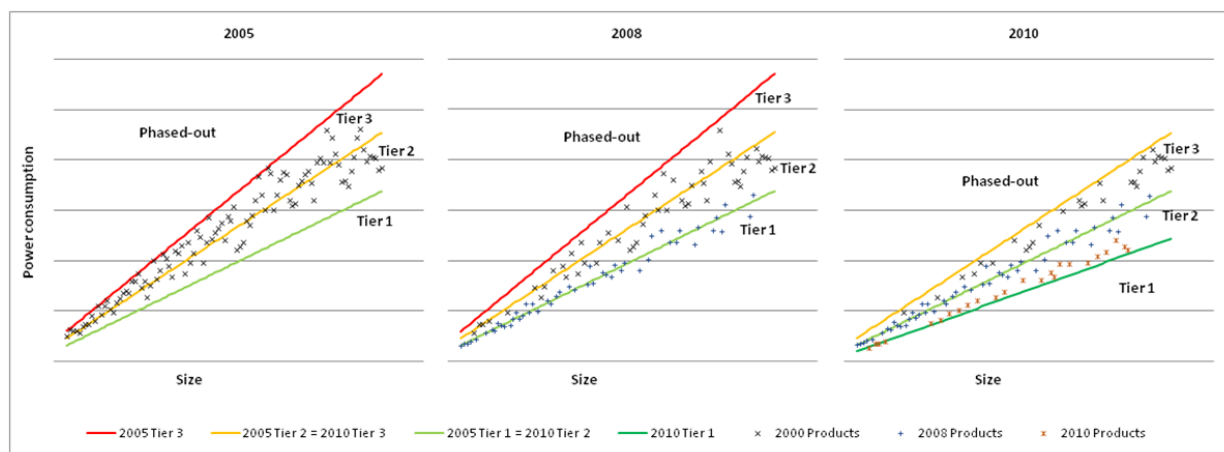


Figure 3. Illustration of the mechanism of the definition and evolution of Tiers.

energy performance standard on which the label is based. As shown in Figure 1 this includes the year of entry into force of the standard. Sometimes, the difference also lies in the number of energy efficiency tiers, i.e., from the three tiers to five tiers or counter wise. Of course, most of the models, if not all, will be rated to a different energy efficiency tier on the new label.

As discussed above, the CEL is linked with the national mandatory energy performance standards. And when one of these mandatory standards is updated, a new label is also produced that establishes the same set of energy performance levels that can be found in the energy performance standard. The new and the old version of the energy label for a given product may look quite similar. But the main (visible) changes will be the potentially changed energy efficiency level and the version of the standard that the label refers to (at the bottom of the label), which is also important for answering any questions from consumers.

The main concern that was expressed by manufacturers about rescaling of the label was that it would impact their profit margin. Manufacturers indicated that if a Level 1 product rescaled/relabelled to Level 2 or lower, they would likely lose the pricing advantage associated with being the “most efficient” in the market. However, the government maintained its policy of updating the label after the national energy performance standards, and manufacturers are now used to and comfortable with the rescaling, having understood that:

- adding more levels (as was done in Europe) is not viable as a long-term solution;
- introducing new, more efficient products that meet the new Tier 1 requirement would enable them to be in a similar position as they were before the rescaling, protecting brand reputation and pricing position;
- only when energy labels are rescaled to create space at the premium efficiency end will new technology have an opportunity to enter the market and earn more profit, meaning that without rescaling profit margins will be eroded; and
- it is a level playing field – the rules are the same for all companies operating in China.

Of course not all manufacturers support the concept of rescaling, but after ten years of the CEL, most of them recognise the value it brings and that is enough for policy-makers to decide how to shape the market.

Australian Energy Label

The labelling scheme in Australia has been led by a National Appliance Energy Labelling Co-ordinating Committee since 1992 which is itself composed of officials but works with an advisory committee of industry and consumer representatives, ensuring that all interested stakeholders are aware and involved from the beginning of the process when a re-scaling is considered. In early December 1997 the National Appliance and Equipment Energy Efficiency Committee (NAEEEC) held a national industry forum where the major topic of discussion was the review of the existing national appliance labelling scheme (EES 2004).

Also, as mentioned above, extensive consumer research is done before any decision of change is taken. More specifically, research has been done concerning the number of stars and different ways to indicate that something about the label had changed, by introducing a date and/or an additional colour band. The results of the consumer research activities are then compared to other stakeholder's reactions to evaluate the feasibility of the various options and select the best approach to follow.

One of the points receiving the most discussion around the visibility of a rescaled label was the introduction of a date on the label. A 2012 report on the inclusion of a date on energy rating labels (Winton 2012) mentions that “after some discussion, it is clear that almost all of the consumers in this study support the idea of placing a year of manufacture on the energy rating label for a range of reasons on balance, whereas suppliers and retailers are considerably less supportive of the idea”. As a consequence, this option was not adopted by policy makers in Australia, but more recent reports seem to indicate that the inclusion of the date of revision of the algorithm in a quite prominent position is possible (Winton 2013).

Concerning the timeframe, based on the estimate that the inventory stock time for white goods was 3 months, the rescaling of the labels in 2000 offered a transition period of 6 months during which both the old and the new label could be displayed

in the stores. For products displayed in the stores, following this six month period it would be illegal to display products with the old label. Inspections were done in about 7 % of the stores selling white goods, both to evaluate compliance and to raise awareness. Concerning the products that were not displayed in the stores but delivered to consumers, the government also made an allowance that after the deadline for products to be displayed with the new label, suppliers were still allowed to deliver products to consumers with the old label for an additional 6 months.

The choice was made for this first long awaited revision of the energy label to revise and rescale for all products with the same timing. Following this experience, the feedback from various stakeholders (manufacturers, suppliers and authorities) was that this was probably too ambitious to be done all at once and it would be better to rescale product by product in the future. However, manufacturers recently highlighted that synchronizing the revisions also had advantages (economy of scale). And, rescaling several product labels at the same time can also help market surveillance authorities enabling several products to be checked during the same inspection and combining communication campaigns for multiple products.

ACTUAL DISRUPTION – HOW IT WAS PREVENTED AND ADDRESSED

China Energy Label

Anticipation

Whenever a label revision is expected, all stakeholders are invited to participate in the review. This provides opportunities for all stakeholders to express their concerns and for policy-makers to take those into consideration in their decision.

It is well known in China that energy labels are updated immediately after the MEPS. So when the revision of the MEPS starts, manufacturers are aware there will be a change in the energy labels in the near future and they prepare for it. The MEPS revision is a long process, and it may take one to three years between initiation and completion. Then the revision process for the energy label itself will typically only be one year, which gives industry plenty of time to prepare.

Communication efforts

The assumption is that the fact that the label shows the national performance standard it refers to (the number of the regulation indicating the year of adoption) makes it easy for consumers to tell which of two labels is the newer version. The potential confusion and following impact on the consumers' willingness to buy does not seem to be a major factor or impediment to the revision. Taken together with the other means of communication, the date of the performance standard is considered to greatly reduce the possibility of consumer misunderstanding.

Concerning the risk that consumers will return an item due to a misunderstanding of the label, or a difference between what was purchased online and received, the China National Institute of Standardisation (CNIS) stated that this was not an issue with Chinese consumers⁶. In fact, there were very

few complaints, and after CNIS clarified the process and other technical points with those that did complain⁷, their issues were resolved.

In China, manufacturers actively work with their communications teams to support the revision of the national energy label. It is common to find on manufacturers' websites, for example, that they use special marks to show the products with new labels and offer help buttons and documents that clarify the rescaling for consumers, enabling them to understand the difference between the old and new energy label. By doing this, their main objective is to sell their newly labelled products, which may appear to be of a lower efficiency level when compared to a product using the old label.

Generally, retailer staff are either directly employed by, or managed by, manufacturers. Therefore, manufacturers also train their employees so they are informed and better able to promote sales of the new products. Meanwhile, retailers would also conduct training sessions for sales staff, an activity that CNIS supports, helping and collaborating with retailers on these training courses. For online shopping, e-retailers tend to mimic the information and communications programmes of manufacturers – as shown in Figure 4. This communication document is an example of material prepared by the famous brand Midea and found on an e-retailer's website. And, if manufacturers don't provide material like this for some reason, online retailers would prepare information themselves to help inform (and retain) their customers.

The Chinese approach is clear and pragmatic. Bearing in mind that the objective of the energy label is market transformation, the government takes action following the observation that rescaling is a necessary process to maintain the effectiveness of the energy label. Based on this premise, policy-makers set out a process that would minimise confusion in the market, leveraging communication efforts by stakeholders in support of consumers.

Accompaniment with other policy interventions

Sometimes, additional policy interventions (incentive policies) have been needed as a strategy to get industry backing for rescaling. In 2009, the Chinese government was thinking about upgrading the MEPS and CEL for air-conditioning, but the industry did not support it. However, based on market research, policymakers were confident that the new energy efficiency target was achievable. Therefore, the government introduced market incentives (in this case, a subsidy for high efficiency ACs) in order to encourage industry to move towards higher efficiency. After two years, the incentive policy had achieved a large market share of high-efficiency ACs on the market, and the government then proceeded with the rescaling without opposition.

6. CNIS, personal communication.

7. The complaints were mainly due to the discrepancy between the label seen on the internet, on display in the shop or on the packaging or manual vs. the label on the product. Because products and their packages/manuals could be produced at a different time, some of them may use the old label and some may use the new one. When consumers discovered the discrepancy, they thought it could be a misuse of the label by the manufacturers so they complained to CNIS, the administration of the Label (CNIS, personal communication).



Figure 4. Clarification document on the rescaling prepared by a manufacturer and presented on a retailer's website.

Australian Energy Label

Anticipation

As mentioned above, the first labels appeared in 1986 with the first report identifying the need for a rating review issued in 1991 culminating in a revision of the label in 2000. As in Europe, the programme managers needed to conduct research and involve various stakeholders, including industry and retailer representatives, making sure that the whole supply chain was in a position to anticipate the upcoming revision. The debates in Australia were rigorous but with consistent information from government, the change to the label grading was accepted by all stakeholders who were then able to plan for the change some years later. With so many equipment and appliances manufactured offshore, delivering consistent, reliable information about the rescaling process to those manufacturing and importing equipment was seen as vitally important to its general acceptance.

Communication effort

Communication was considered as the cornerstone for a successful transition. An extensive communication strategy was developed and deployed, based on surveys and consultations. This covered communication aimed at consumers, buying groups, retailers (shop floor staff and retail shop managers), manufacturers, interest groups and governments and involved (but was not limited to) point-of-sales material, inquiry line, website, industry publication advertising and consumer media.

One of the main challenges seems to have been to reach small shops, as the distribution of education and point-of-sales materials entirely depended on buying groups⁸ and major department stores.

With the communication material made available by authorities, we could not find any evidence of material developed by manufacturers or retailers. Of course these still have a critical role to play for a smooth transition since they are the

interface with the consumers. As such, they can influence the understanding and purchasing decision of the consumers but also their perception of the whole scheme. Similarly, a phone or on-line help centre only has a positive impact on the comprehension and credibility of the label if it provides a high quality of service.

Assessment of the compliance and impacts

In order to evaluate the degree of compliance and the disturbance caused by the new label, shadow shop surveys were conducted in Australia at three points in time – (1) before, (2) during and (3) six months after the transition.

The results of these surveys indicate that the percentage of unlabelled products do not seem to have been affected by the introduction of a new label, and with almost 80 % of the products correctly labelled 6 months after the transition, the process seems to have gone rather smoothly.

In terms of the impact of the label, the comparison of the sales distribution for refrigerators shown in Figure 6 and Figure 7 illustrates that there is no visible negative effect of the rescaling. The figure shows a slight improvement of energy efficiency rating for the sales distribution between 1993 and 1997, but the improvement is even more significant between 1997 and 2002.

It should be noted that although the improvement in product performance between the two last tested years seems more limited than for prior dates, this is at least partially due to the fact that 2007–2009 only represents a two-year difference whereas in the other cases the difference is 4 to 5 years.

Figure 6 shows that by 1997 almost 40 % of sold refrigerators were 4-star and almost 30 % were 5-star according to the original algorithm. Figure 7 shows the evolution of performance using the new algorithm and rating. Although 4-star refrigerators were not represented in 1997, development is already visible shortly after the rescale (3 % of sales in 2002) and they represent the highest percentage of sales in 2007, with 46 % of the sold refrigerators being 4-star.

Concerning the impact of the rescaling on the consumers' perception of the label, one interesting source of information is the triennial Australia Bureau of Statistics (ABS) survey of

8. Wholesale dealers for public and non-profit sectors.

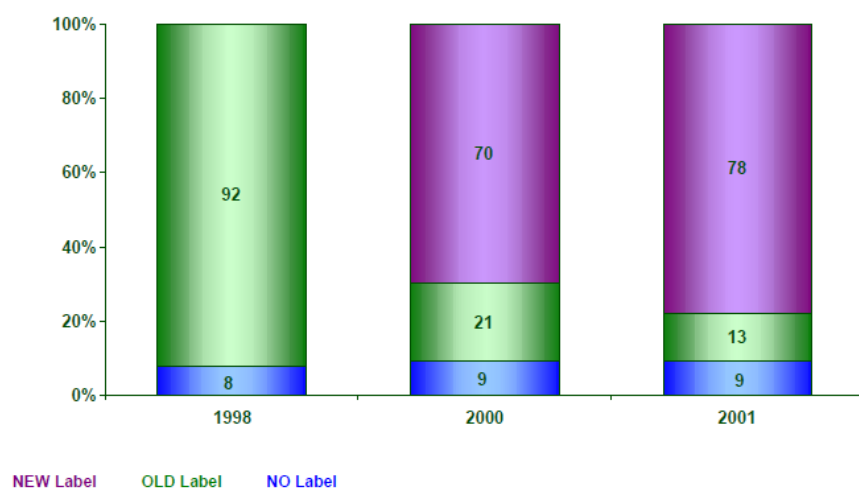


Figure 5. Percentage of all appliances with label – 1998, 2000, 2001 (source: Energy Label transition – the Australian experience, Energy Efficient Strategies, July 2004, quoting Millward Brown Australia – Stage 2 Report, April 2001).

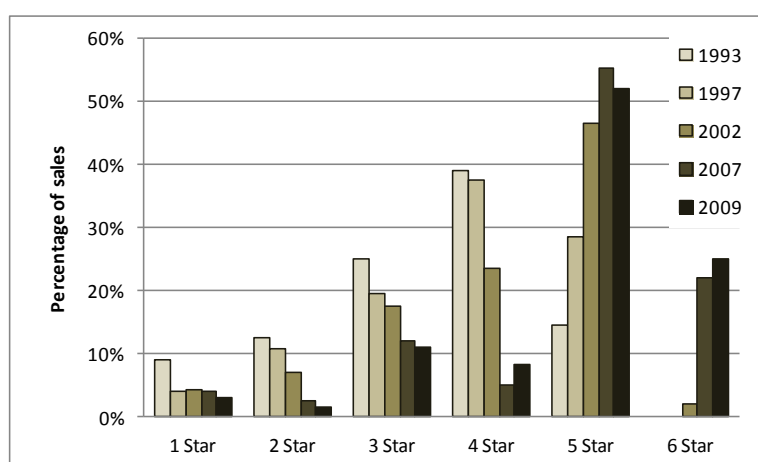


Figure 6. Refrigeration – National Sales Distribution by Original Star Rating (EES 2010).

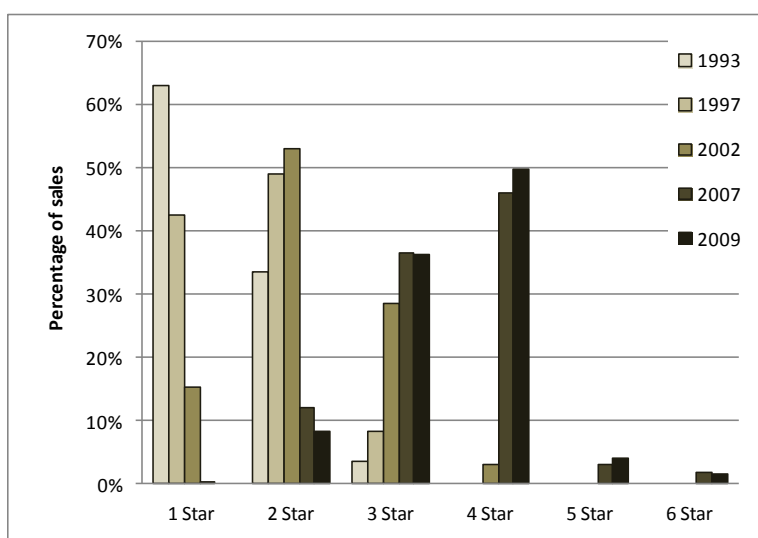


Figure 7. Refrigeration – National Sales Distribution by 2000 Star Rating (EES 2010).

household energy use and conservation⁹. Since 2005, the ABS has asked the same question about influencing factors for those respondents whose household had purchased a new appliance in the previous 12 months. Table 1 summarises the results of the four latest surveys, presenting the percentage of respondents nominating each factor as influencing their purchase decision. Responses were not prompted: respondents did not have a set of answers to choose from but were rather invited to list whatever spontaneously came to mind (source: Shane Holt, George Wilkenfeld – personal communication).

Based on these results, the label seems to have gained in popularity and influence since 2005, although there is a slight decrease of interest between 2011 and 2014. This decrease is also reported for environmental considerations in general and for the Water Efficiency Labelling and Standard (WELS) rating and is thus probably not the result of the rescaling.

It should be noted that despite the recent (and limited) decline in influence, the energy label is more often mentioned as a factor influencing the purchase decision than retail price for almost all tested products.

Conclusions and way forward

The EU energy label has heavily influenced categorical labelling throughout the world and its future capacity to maintain that influence will be determined by how it faces the challenge presented by rescaling its categories. In the field of rescaling, the EU cannot postpone any longer the major revision required to the existing rating scale.

The EU is not alone in facing this challenge with several experiences from which to draw inspiration to develop new algorithms and categories that will keep pace with the rate of technological innovation. Although there will be some concern and costs created by the label revision, the two examples of China and Australia show that the downsides can be identified, managed and limited. Indeed, many of the concerns expressed by stakeholders are expected to be unfounded (e.g. little record of product being returned by retailers seeking credit). Consumer benefits through selection of more efficient appliances are clear, since the credibility and impact of the label are maintained over time and rescaling becomes perceived as a normal part of the process. In terms of identifying best practices, there is a tremendous amount of material from both the Australian and Chinese experience on which the EU can capitalise.

What first might be perceived as an economic burden for industry in the short term will in the long run be beneficial to all players. Although rescaling may affect the status quo, the added value of being able to more easily identify products in the top classes only exists if the label continues to display real efficiency differentiation. In the long run, rescaling protects the manufacturer's investment in making more efficient products and to extract a premium price for the most efficient products.

Consumer understanding is the cornerstone of any labelling programme, and the EU Energy Label is no exception. Consumers have a favourable opinion of the European label and

it has been demonstrated to have an impact on the purchasing decisions (Navigant for CLASP 2013). Unfortunately the impact of the label will diminish as the incentive to purchase more efficient appliances will erode as consumers perceive the difference between A and A+ as smaller than between B and A (Navigant for CLASP 2013). Maintaining the status quo is thus not an option if stakeholders supporting the energy label want it to remain meaningful and impactful. Europe should build on the good reputation of the label and restore its impact on purchasing decisions by focussing on consumer understanding and rescaling as products offered in the market start to cluster in the highest categories.

The rescaling in Australia and China followed very different approaches, but both highlighted the importance of good communication with consumers. In Australia a communication strategy was developed and deployed by the government, targeting all players and various media. In China, manufacturers and retailers developed their own communication material to try and help consumers understand the situation. In China, the change to the label was considered self-explanatory as apart from the rating itself the only other change to the label was the version of the national standard on which the label is based, which contains the year of publication. This reference is however placed in rather small characters at the bottom of the label and could easily be overlooked by consumers who may not be aware of it. According to Australian focus groups, the addition of a date in a prominent position is better understood than a design change (e.g., the addition of a colour bar) to indicate what is happening (Winton 2013). This may thus be an option to limit the necessary communication efforts, or at least make them more efficient, indicating to consumers that they need to look for more information than just the new rating categories.

New forms of consumer communication (like QR codes, apps and on-line selection software tools) can all be considered as ways to help consumers understand the labels and offer them even more relevant information, as it can be personalised to take into account the specific situation (type of usage, location, etc.) of the user. The Chinese government recently decided to make QR codes mandatory on the label. China is also developing a CEL smart phone app. The Australian label already indicates "Compare models at www.energylabelling.gov.au" since 2000. In addition to that, a smart phone app has been developed, enabling consumers to search for the desired information in real time, while shopping for an appliance. Each of these options has their strengths and weaknesses and they can certainly be used together in a complementary way to enhance the information provided at the time of purchase. The Super Efficient Appliances Deployment (SEAD) initiative identified four smart phone apps that "put product certification data into the hands of shoppers and help them make better informed purchasing decisions"¹⁰. It should be noted however that in the absence of a strong government-maintained smart phone app, there is a risk that private companies will develop their own offer, the reliability of which could be difficult to ensure.

9. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4602.0.55.001?OpenDocument>

10. <http://www.superefficient.org/dataaccess>

Table 1. Australia Bureau of Statistics survey of household energy use and conservation – percentage of respondents nominating that factor as influencing their purchase decision – responses not prompted (source: Shane Holt, George Wilkenfeld – personal communication).

Year	Refrigerator	Separate Freezer	Dishwasher	Heater	Washing Machine	Clothes Dryer	Portable Air Conditioner
Energy Rating Label							
2005	41.2	28.8	50.3	30.8	43.5	39.8	
2008	50.3	46.2	47.7	34.7	45.7	45.4	
2011	51.5	42.2	51.8	33.0	48.7	52.8	32.7
2014	45.2		50.4		46.7	51.8	
Water Efficiency Labelling and Standard (WELS) Rating							
2005			NA		NA		
2008			42.0		49.0		
2011			45.0		46.4		
2014			38.3		39.4		
Environmental Considerations							
2005	2.0	1.6	13.6	7.7	19.1	4.6	NA
2008	2.6	2.8	5.6	7.0	6.0	4.1	NA
2011	3.6	2.4	4.6	6.4	6.0	6.2	7.4
2014	3.3		4.3		6.5	7.2	
Retail Price							
2005	38.9		38.0		38.1	40.4	
2008	40.7		35.5		35.2	44.3	
2011	43.7		44.6		41.3	48.1	
2014	44.3		40.8		40.3	52.3	

In the future, when rescaling is considered by all stakeholders as part of the normal process in the maintenance of the EU Energy Label, more automation (systematic launch of the rescaling process each time a predefined percentage of products reaches a predefined efficiency class) would probably be beneficial, helping policy makers to plan for a rescale before all products are bunched in to the highest energy classes. Some alert system could probably be put in place if the EU creates a product registry database, which could monitor the distribution of products across the available energy classes, and point to the need for a rescaling review of products that experience excessive clustering in the highest categories. This type of system could help to make the whole process smoother and the rescaling less resource intensive.

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