

Revising the Brazilian Labeling Program for Refrigerators

Lessons from the European Union and Thailand

February 9, 2021

INMETRO is currently considering modifications to the National Label for Energy Conservation (ENCE) for refrigerators to better differentiate more efficient products that will lower electricity consumption, save consumers money, and reduce carbon dioxide emissions. The modifications being considered include the addition of “A+,” “A++,” and “A+++,” to the current A to G scale, since all refrigerators currently found in the market are already “A” class. These modifications are similar to the additional categories that were added to the European Union’s energy efficiency label in 2010, and then removed beginning in 2017. The Electricity Generation Authority of Thailand (EGAT) has also experimented with the creation of additional categories on their EGAT No. 5 label, which previously categorized products on a scale from level 1 to level 5. They did this by adding three stars to their label, so that the top labeling class changed from “level 5” to “level 5 with three stars.” The experiences from both the European Union (EU) and Thailand demonstrate that, while creating such additional categories can help to differentiate products, it can also decrease the effectiveness of the label and confuse consumers.

KEY FINDINGS AND RECOMMENDATIONS

- **Creating additional label categories is not as effective at motivating consumer choice as a full revision of the energy efficiency criteria for the existing label.** In the EU, consumers were less likely to pay more for an “A+++” product over an “A” product than for an “A” product over a “D” product.¹ In Thailand, 94% of consumers would not purchase a product that does not achieve the level 5, but only 11% of consumers would pay 20% more for a No. 5 product with three stars over a No. 5 product with no stars.²
- **Additional label categories can confuse consumers.** In Thailand, 57% of retailers reported that consumers asked for clarifications about the meaning of the additional stars on the existing No.5 label. In the EU, Electrolux, a major appliance manufacturer, publicly criticized the European Commission for the additional categories as “increasingly confusing to consumers,” creating additional momentum for the elimination of the categories starting in 2017.
- **INMETRO should implement a full rescaling instead of creating additional labeling categories.** This would achieve the objective of differentiating products, maintain the motivating power of the top labeling class, and avoid confusing consumers.
- **If additional categories are created, a comprehensive consumer awareness campaign should be launched to educate consumers on the value of the new categories, and that the “A” class represents the least efficient refrigerator class currently allowed on the market.** Displaying the “A” class as the lowest efficiency class on the label would help to make this clear. In addition, a consumer awareness campaign, including materials for retailers illustrating how to explain the new classes to consumers, would reduce confusion.

CURRENT STATUS OF LABELING FOR REFRIGERATORS

There are two energy labels for electricity-consuming products in Brazil: 1) the mandatory comparative energy label (ENCE) with categories from ‘A’ to ‘C’ or ‘G,’ depending on the product and 2) the voluntary Selo PROCEL endorsement label. The Brazilian National Metrology, Quality, and Technology Institute (INMETRO), who began the discussion around energy labeling in Brazil in 1984, manages the ENCE. The Electricity Conservation Program (PROCEL) of the state-owned electricity generation and transmission company, Eletrobras, manages the Selo PROCEL.

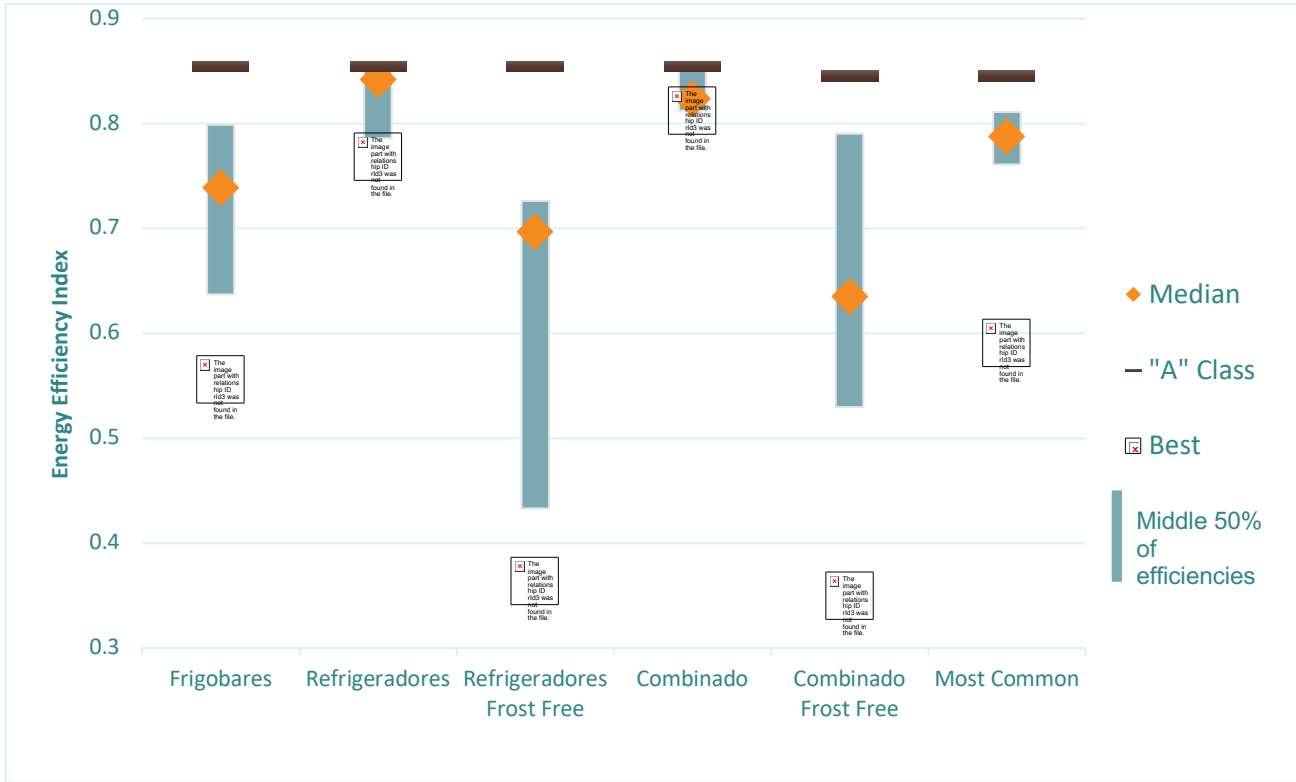
¹ CLASP, “Assessing Consumer Comprehension of the EU Energy Label,” 2013. Available online at: <https://clasp.ngo/publications/assessing-consumer-comprehension-of-the-eu-energy-label>

² Based on 6 focus group discussions (FGDs) with 36 consumers, 200 in-depth interviews (IDIs), and 500 online surveys conducted by Ipsos Thailand in 2020.

Consumers in Brazil respond to the labels, and manufacturers, importers, and retailers all recognize that products that do not attain an ‘A’ rating and the Selo PROCEL do not sell well. A 2015 study conducted by INMETRO found that 91% of consumers recognized the comparative label, 79.9% said they understood the label, and 68.3% said that they would pay 10% more for a product bearing the Selo PROCEL.³ Because of the preference for ‘A’ rated products that bear the Selo PROCEL, many manufacturers seek to primarily or exclusively produce ‘A’ rated products, and some retailers only carry ‘A’ rated products.⁴ The two refrigerator labels combined have had a significant impact in reducing energy demand in Brazil, saving an estimated 3.5 TWh of electricity in 2009 alone.⁵

The categories for the ENCE for refrigerators have become severely outdated since they were last revised in 2006. Figure 1 compares the levels for these labels with the refrigerators available on the market, where more efficient products have a lower energy efficiency index. The column on the far right for ‘most common’ represents the models of combined, frost-free refrigerators that CLASP found on at least 10 retailers’ websites in October 2019. The vast majority of products in each category can achieve the “A” class, despite the existence of far more efficient products. None of the nearly 1,300 products identified on the market did not achieve the “A” class ENCE. Based on these findings, it is clear that the ENCE no longer differentiates more-efficient products from less-efficient products on the market, despite the existence of a wide range of efficiencies, where some combined, frost-free refrigerators consume half as much energy as others.

FIGURE 1: CURRENT REFRIGERATOR LABELING POLICIES COMPARED TO PRODUCTS ON THE MARKET



INMETRO is currently working to remedy this situation by revising the ENCE to better differentiate the refrigerators in the market. One proposal being discussed is to create extra categories on the label: “A+”

³ BRACIER. “USO DE ETIQUETAS DE CONSUMO DE ENERGIA GERÁ ECONOMIA DE R\$ 2,9 BI EM DEZ ANOS.” 2015. Available online at: <http://bracier.org.br/noticias/brasil/5288-uso-de-etiquetas-de-consumo-de-energia-gera-economia-de-r-2-9-bi-em-dez-anos>

⁴ Based on interviews with manufacturers and retailers, conducted in August 2018.

⁵ Balbino Cardoso, Rafael. “Estudo dos impactos energéticos dos Programas Brasileiros de Etiquetagem Energética: Estudo de caso em refrigeradores de uma porta, condicionadores de ar e motores elétricos.” UNIVERSIDADE FEDERAL DE ITAJUBÁ. 2012.

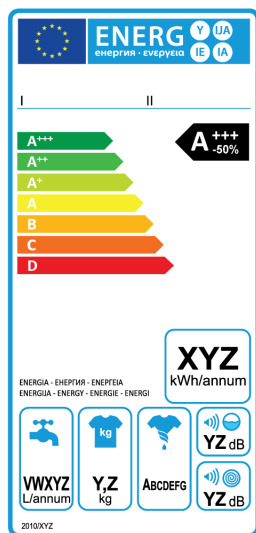
with 10% higher efficiency than the “A” class, “A++” with 20% higher efficiency, and “A+++” with 30% higher efficiency. This proposal is quite similar to a revision undertaken in the European Union in 2010, as described below. In addition, it bears many commonalities with the revision of the EGAT No. 5 label to add up to three stars as a way to differentiate products, given that all labeled products achieved the top level on the existing label.

LESSONS FROM THE EUROPEAN UNION

The European Union introduced categorical energy efficiency labeling for household appliances in 1992 with the Council Directive 92/75/EEC of 22 September 1992. This directive established the A to G scale and the general design of the EU Energy Label as is still used today. After a few years of enforcement of the label, it became obvious that the highest efficiency classes for some products were already overpopulated whereas the lower classes were empty. The clustering of models in the top classes meant that the label no longer clearly differentiated products on the market. The scale of the label therefore needed to be revised in order to restore its ability to help consumers make well-informed purchasing choices. The discussion preceding the adoption of a new Directive in 2010 centered on the question of the rescaling. However, due to industry resistance to a complete rescale of the label, EU Member States decided to maintain the existing categories and add higher efficiency categories (A+, A++, and A+++). The 2010 Directive therefore did not trigger a rescale of the energy labels but rather an extension of the scale to those 3 additional categories.

After the A+++ to D scale was put in place, it became clear that product efficiency was improving beyond what the 3 additional categories were able to differentiate and that a new rescaling would be necessary. In 2015, less than 4 years after the entry into force of the revised energy label for washing machines, Electrolux was putting a machine on the market that claimed to “surpass the EU top energy rating A+++ by a whole 50%” (see Figure 3).

FIGURE 2: ELECTROLUX ILLUSTRATION OF THE EFFICIENCY CATEGORY OF 2015 MACHINE ON THE DECEMBER 2015 ENERGY LABEL



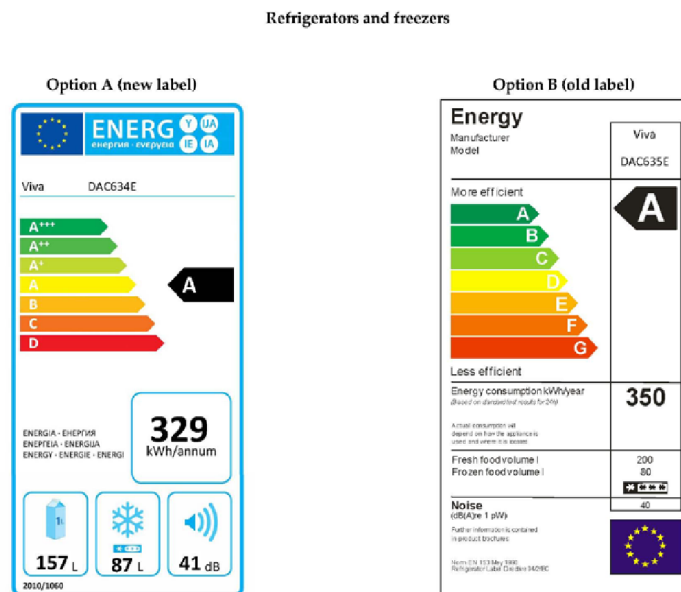
The company was concerned that the EU label would not do justice to the efficiency of their product and called for a revision, declaring: “It is time for a major revision of the energy labeling system in the EU”, and “The current system where manufacturers have to add more and more plus-signs to the labels will be increasingly confusing for consumers.”⁶ In fact, just 3 years after the revisions to the EU Energy Label in 2010, there was already a consensus that a new rescale was needed and that adding plus-signs was not a long term solution. The European Environmental Bureau (EEB), the European Environmental Citizens Organisation for Standardisation (ECOS) and the European Committee of Domestic Equipment Manufacturers (CECED) co-authored a paper on this issue in 2013: *Revising EU energy label: evolution or revolution?*, confirming that even for industry, the 2010 revision with its scale extension only “provided a short term solution to the issue of saturation of the top classes.”⁷ This paper also lays out a few suggested principles for the revision of the label, some of which were adopted by the European Commission.

⁶ Electrolux “New washer breaks all limits: Time to revise energy label system.” 2015. Available online at: <https://www.electroluxgroup.com/en/new-washer-breaks-all-limits-time-to-revise-energy-label-system-21050/>

⁷ Arditi, S., Toulouse, E., and Meli, L., “Revising EU energy label: evolution or revolution?” 2013. Available online at: <http://www.ecostandard.org/wp-content/uploads/Revising-EU-energy-label-evolution-or-revolution.pdf>

In 2013, CLASP published a consumer research study⁸ that evaluated the effectiveness of the new label design. The study was intended to assess how consumers use, understand, and respond to the revised label. The study revealed that consumers understand both versions of the label and that both positively impact purchase decisions. However, it showed some differences in appeal and understanding between the two versions. More consumers would consider the middle category acceptable in an A+++ to D label scale than in an A to G scale. When selecting products from an A+++ to D scale, consumers declared that they would be willing to pay 44% more for the highest energy efficiency category as opposed to middle-range products, compared to 50% more for an A to G category. Other studies found a larger difference between the motivational power of the two scales (see for example Heinzle & Wüstenhagen, 2010, in which researchers dissociated the effect of the A+++ to D scale from the rest of the design changes).⁹

FIGURE 3: 2010 (LEFT) AND 1992 (RIGHT) VERSIONS OF THE EU ENERGY LABEL FOR REFRIGERATORS



The study also investigated other parts of the label, such as energy consumption per year, water consumption, and icons. This detailed feedback from consumers was extremely useful to justify shifting back to the original A to G scale (with no “+”) in the 2017 revision of the legal framework, as well as to improve the presentation of certain elements and identify what may have to be further investigated for each product group. The survey also highlighted the importance of improving communication to consumers and retailers about the energy label.

In 2014, the European Commission published a report on the evaluation of the Energy Labelling Directive (initiated in 2012).¹⁰ The first priority identified by this study was to revise the energy label:

A key priority is the revision of the present energy label so that higher efficiency levels can be communicated in the future. This will help to ensure future relevance and effectiveness of the energy label. While a new label design will inevitably require a rebasing of the efficiency classes currently applied, consumer understanding should be the chief concern for future label revisions (...). It is also becoming increasingly clear that the A+ categories are less effective at attracting consumers to the higher classes than the A class on an A-G scale. The evolution of energy labels to the A+++

⁸ CLASP. “Assessing Consumer Comprehension of the EU Energy Label.” 2013. Available online at: <https://clasp.ngo/publications/assessing-consumer-comprehension-of-the-eu-energy-label>

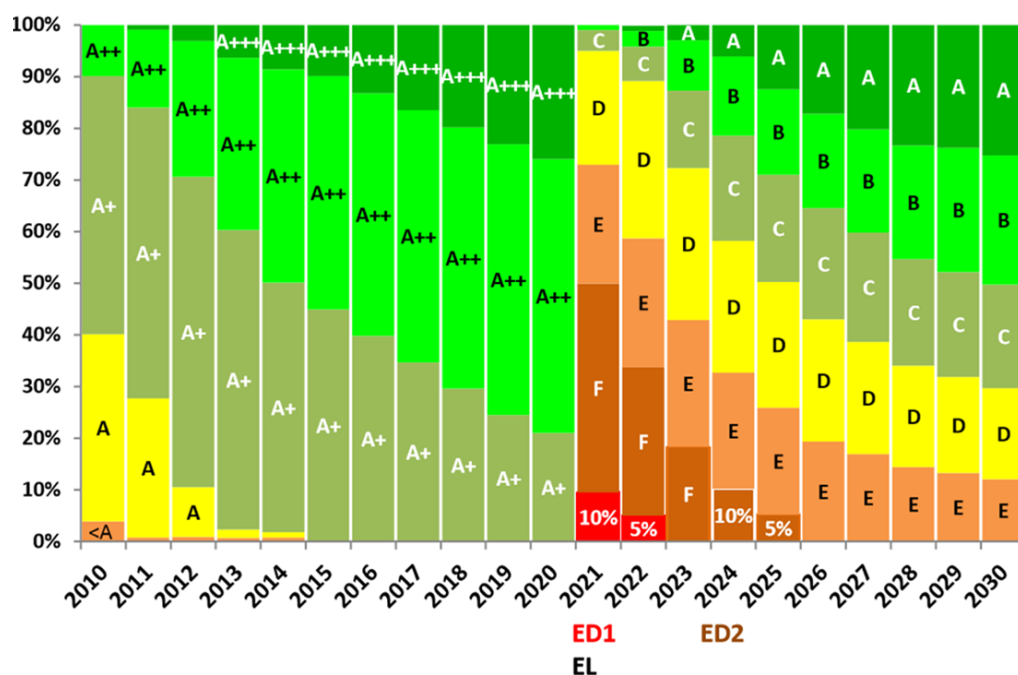
⁹ Heinzle S. and Wüstenhagen R., 2010. Disimproving the European energy label's value for consumers? Results from a consumer survey. University of St. Gallen. February 2010

¹⁰ ECOFYS. “Final Technical Report: Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive” 2014. Available online at: http://www.energylabelvaluation.eu/tmce/Final_technical_report-Evaluation_ELD_ED_June_2014.pdf

categories is one that has little support among stakeholders, and where there is an overwhelming recognition of the need for change. In addition, labels should also not show empty classes at the lower end of the scale without in some way indicating that they are no longer active. The possibility to display environmental information on the label should be maintained. Future options to explore in greater depth are the opportunities offered by ICT to convey additional information or provide electronic labels, display of lifecycle cost information, the development of guidelines for how to revise existing labels, an in-depth assessment of transition issues, as well as a number of advanced label design options.

In 2017 the European Commission adopted a revised legal framework for the energy efficiency label.¹¹ Not only does this new framework restore the original A to G scale, but it also institutes rules about how efficiency categories shall be defined and revised in the future, including that the “A” category should be empty at the moment of introduction of the label, and that the label should be rescaled once 30% of models fall in to the “A” category.

FIGURE 2: REFRIGERATOR MARKET SHARE BY LABEL CATEGORY IN THE EUROPEAN UNION



These new rules have led to dramatic changes in how products are categorized. For example, the refrigerator market went from only including products that were ‘A+’ or higher, to having no ‘A’ category products at all, as the previous ‘A+’ became an ‘F.’ The figure above shows the evolution of the categories in the past 9 years, and how they are projected to evolve through 2030.¹²

LESSONS FROM THAILAND

The original EGAT No.5 label featured 5 efficiency levels to differentiate product performance. However, as the label is voluntary, only products that achieved the highest labeling level (No. 5) were actually labeled by manufacturers, making it difficult for consumers to differentiate the most efficient products. EGAT rescaled the labeling criteria at the end of 2018 by replacing the previous 5 levels with a three-star rating on top of level 5 (hereafter referred to as “EGAT No.5 label with stars”) to better identify more

¹¹ Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU. Available online at: <https://eur-lex.europa.eu/eli/reg/2017/1369/oj>

¹² COMMISSION DELEGATED REGULATION (EU) supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances and repealing Commission Delegated Regulation (EU) No 1060/2010 Available online at: https://ec.europa.eu/info/law/better-regulation/initiative/1553/publication/311969/attachment/090166e5be38dddc_en

efficient ACs. In 2020, CLASP, in collaboration with EGAT and with the support of Ipsos Thailand and the International Institute of Energy Conservation (IIEC), conducted a nationwide survey among manufacturers, retailers, and consumers to assess understanding and perceptions of the original No.5 label and the new label No.5 with stars.

FIGURE 3: EGAT NO. 5 LABEL FOR AIR CONDITIONERS BEFORE 2019 REVISION



FIGURE 4: EGAT NO. 5 LABEL FOR AIR CONDITIONERS AFTER 2019 REVISION



The presence of the No.5 label (both original No.5 label and No.5 label with stars) is an important requirement for consumer purchases and its design is positively perceived by consumers, retailers and manufacturers. Nearly all consumers (94%) would not buy an appliance that does not achieve the level 5. Similarly, 84% of the retailers and 90% of the manufacturers think the label is a very important factor for consumer purchasing decisions, and manufacturers consider it a quality mark for their products.¹³

Consumers are willing to pay more for a product with three stars, but they do not consider it as important as achieving the level 5. Nearly all consumers (95%) would pay a somewhat higher price for a No. 5 product with three stars over a product that only achieves the level 5 with no stars. However, 89% of consumers were unwilling to pay more than 20% more for a product with three stars over one with no stars and 61% of consumers were unwilling to pay more than 10% more.

The star rating is valuable for marketing products to different customer segments. A large portion (70%) of the manufacturers use the higher star rating label to market their products and to promote their brand. The market-leading manufacturers (representing 20% of the manufacturers) are using the higher star rating to target higher-income customers and to justify the higher cost of more efficient products.

Consumers use the star rating and the electricity cost estimate to inform their purchasing decisions. The majority of the consumers (85%) can easily identify the most efficient product by looking at the number of stars and the electricity cost estimate on the label (Figure 7). This is aligned with 95% of the retailers who think that stars play a critical role in supporting purchasing decisions among consumers.

¹³ CLASP found that 71.5% of the ACs on the Thai market display an energy label although the labeling scheme is voluntary. CLASP (2019) Thailand Room Air Conditioner Market Assessment.

FIGURE 5: WHICH LABEL IS THE MOST ENERGY EFFICIENT?



Despite the value of the stars for differentiating products, many consumers are unsure about their exact meaning. Traditional trade retailers said EGAT should have provided marketing materials to help stimulate sales of efficient household appliances and enhance consumer awareness about the No.5 label with stars. While consumers, manufacturers, and retailers were generally positive about the star rating, more than half (57%) of retailers reported that consumers ask for clarifications about the meaning of number of stars.

CONCLUSIONS

In both the European and Thai experiences, policymakers sought to add categories in order to differentiate highly efficient products, as the top labeling class had become overpopulated and no longer represented the most efficient products. In the EU's case, these additional categories were eventually abandoned as they were found to be ineffective and confusing for consumers. In Thailand, the additional categories remain in place; however, it has become clear that initial communication about the additional categories was insufficient, as consumers frequently ask retailers to explain the additional categories, and retailers have not been provided with adequate materials to help them do that. The key lessons out of these experiences for Brazil are:

- A full rescaling will be more effective at motivating consumer behavior than creating additional categories. If additional categories are created, it should only be a temporary measure before implementing a full rescaling.
- Additional categories can be confusing to consumers, so the creation of any additional categories must be accompanied by a concerted effort to educate consumers and retailers about the changes.