

Sociological study on the level of attention given to the energy criteria during the purchase of an electrical appliance, and the use and management of households' stock of appliances

Summary report

EXPERTISES

Dec.
2020

ACKNOWLEDGMENTS

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TO QUOTE THIS REPORT

BRISEPIERRE Gaëtan, JOLY POUGET Mathilde, *Etude sociologique sur la prise en compte des économies d'énergie dans le choix et la gestion des équipements électrodomestiques*, synthèse, Projet MECAPERF, ADEME, 2020.

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Numéro de convention : 1904C0018

Étude réalisée par Gaëtan Briseperre Sociologue (GBS) pour le projet MECAPERF financé par l'ADEME

Projet de recherche coordonné par l'Université de Lille.

Appel à projet de recherche : Bâtiment Responsable à Horizon 2020

Coordination technique - ADEME : Thérèse KREITZ - Service Bâtiment

Sociological study on the level of attention given to the energy criteria during the purchase of an electrical appliance, and the use and management of households' stock of appliances

GBS – Sociology practice and consultancy (Gaëtan Briseperre, Mathilde Joly Pouget)

October 2020

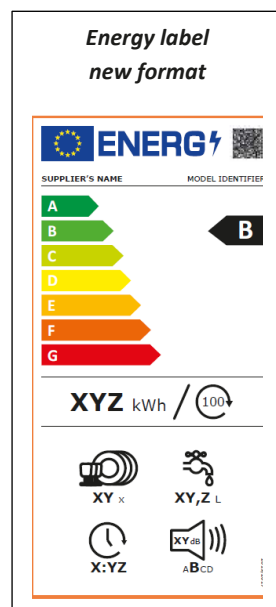
General consumption of electrical appliances is yet to be under control

Households' electrical appliances consumption is in constant increase (they have raised of about 10% between 2000 and 2016ⁱ) whereas heating and hot water consumptions remain stable. **This increase is especially striking knowing that the energy efficiency of electrical appliances has also considerably improved in the last 30 years** (ex. between 1996 and 2016: -30% on refrigerators, -75% on washing machine etc.ⁱⁱ)

At the same time, the number of appliances per household has exploded to reach about a hundred items. This is due to the spread of large electrical appliances amongst households, the increasing number of small household appliances and the development of consumer electronics. Tomorrow we will need to add connected objects and electrical vehicles to that list...Beyond this "rebound effect", it seems that French households buy less efficient appliances than some of their European neighboursⁱⁱⁱ.

From a consumer point of view, 2021 marks a turning point with the launch of two measures dedicated to **impact household's equipment choices towards more durability**.

From March 2021, an updated version of the Energy Label will be displayed in-store and online. The rating of this new label is both more demanding and



more transparent as the rating of the products will go back to a scale from A to G.

In 2021 will also be launched a new repair index on some electrical appliances, which will go beyond the information on the availability of the spare parts, as it is already provided today. In addition to those regulatory measures, we observe some other voluntary approaches to display the environmental impact of products by private and public stakeholders. In this context, it appears relevant to study the purchase decision of consumers when it comes to electrical appliances.

A sociological approach of the purchase decision as well as the use of households' electrical appliances

This study aims at understanding the extend with which consumers take into account energy in their purchase decision for an electrical appliance. The choice of an electrical appliance over another one has consequences for a household, especially regarding its electricity consumption. However, the energy criterion is rarely a priority.

From a sociological point of view, **the purchase decision of an electrical appliance should not be considered only as a balance between objective and rational criteria, but more as a process** in which each step holds the possibility of influencing the final decision.

Also, **this purchase should not be dissociated from the use of the appliance by the consumer**. The choice of an « energy efficient » model is therefore one of the possible energy savings' strategy for the consumer.

Finally, to understand consumers' choices concerning their electrical appliances, it is necessary to apprehend them in the overall

household equipment dynamic, which is an indicator of their lifestyle.

To enlighten those issues, we have led a study **with 25 consumers who had recently bought a large electrical appliance** (in the six months prior fieldwork) **amongst those three categories of appliances: refrigerators, dryers and TV. This study has been led in France on a sample of French customers, from May 2020 to June 2020.**

We have chosen to lead the study with a majority of “informed” consumers (2/3 of the sample). “Informed” consumers have taken into account the energy criteria amongst their top three criteria when buying their appliance. They are therefore illustrative of the levers and barriers in taking into account that criterion during a purchasing process of large electrical appliances. Fieldwork has been led through in-depths interviews in visio. Beforehand, participants were invited to undertake an auto-observation via commented pictures of

MECAPERF – the project

Consumers’ decision process when it comes to energy efficient large electrical appliances

This project is funded by the French Agency for the Ecological Transition (ADEME). It runs between 2019 and 2022 and involves three partners: Lille University, SoWatt Engineering office, and GBS – Sociology practice and consultancy.

The main objectives are to enlighten households’ decision processes as regards to the purchase of large electrical appliances in the context of the launch of the new energy label, to design new strategies to guide consumers towards more energy efficient products.

Prior to this study, the team has undertaken a literature review and will also lead a study amongst professionals and brands selling large electrical appliances. This will help understand the “offer” side: how the new energy label is experienced by professionals, how they intend its display in-store and guide consumers to it. Mystery shopping and experiences in laboratories are also planned.

Results of this project will be shared and disseminated through publications, trainings, and workshops with professionals.

their appliances: perception of the appliances’ consumption, inventory of their appliances and their use frequency, and their last and future purchases.

Various attitudes towards the energy criteria and how it is taken into account during the purchase decision

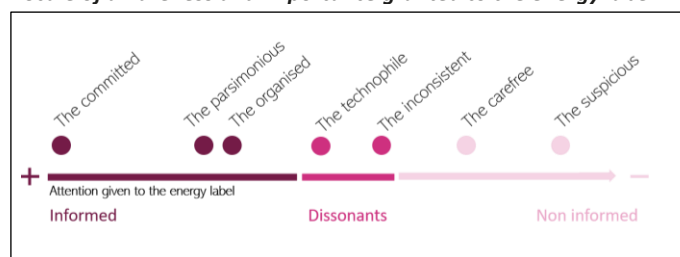
The identification of profiles allows us to go beyond a standardised vision of consumers and their attitude.

We have identified three axis which influence the way the energy criterion is taken into account in the process of purchase decision.

- **The commitment in the purchase process influences positively the awareness regarding the energy criterion.** Some consumers act like professionals and are methodical and organised in their approach of purchase decisions, whereas some feel obligated, which means they don’t want to spend too much time researching for their new products.
- **The level of expertise is ambivalent as regards to the awareness of the energy criterion** as it can also act as a barrier if it is challenged. The expertise can be technical skills from professional activity and / or a more general interest for Climate Change and its stakes.
- **Price sensitivity usually leads to a lesser attention to the energy label** because the cost becomes the primary criterion, reversely to consumers who are less constrained by budget.

We have identified seven consumer profiles, characterising the various attitudes towards the energy label. They are placed on a scale from the least “informed” to the most “informed”. The “dissonants” are the ones for which we observe a gap between claimed intentions and actions.

Scale of awareness and importance granted to the energy label



The seven profiles which characterise the variety of attitudes when it comes to the purchase of a large electrical appliance

Informed

Dissonants

Non informed

THE COMMITED

THE PARSIMONIOUS

THE ORGANISED

THE TECHNOPHILE

THE INCONSISTENT

THE CAREFREE

THE SUSPICIOUS

Priority is given to the energy label, which is coherent with a wider personal approach

The importance granted to the energy label is "common sense"

The attention to the energy label is part of a process of domestic optimisation

The importance given to energy label balances over-equipment

Claim to be sensitive to the environment but has not considered the energy label for this purchase

Buying is often a pleasure, therefore the energy-criterion is far from a priority

High level of technical expertise but associates the energy label with greenwashing



"If we have to choose between living like people in Burkina Faso or Americans, I will go to Burkina »

"When I leave a room I switch off the light. Same for water, I try and save it. It is common sense to me "

"It is important to be able to have appliances at home without it being too heavy on my energy bill"

"I already have a lot of connected objects. But I always need more, I am a big consumer"

"The thing I liked in this TV is the ambilight option – the gadget...but otherwise, there is nothing I do without thinking about the environment"

"It was not a purchase I had planned, we had to do with a limited budget and find something that was okay-ish"

"I worked in the energy sector for many years so I know how it works. But it would be good if ecologists would know a bit more about the technical aspects"

- Choses the product with the highest energy label because it is part of a wider approach of preserving the environment
- Very high level of expertise towards the environment, go further by questioning the global impact of the product (life cycle, ability to be repaired)

- Looks for a good value for money, meaning a rather good energy label, but at a reasonable price
- A general « no waste » approach inherited from education

- Very involved in the purchase process and very price-sensitive
- Attention to the energy label to reduce the overall energy budget
- the logic is to invest in a durable appliance but to avoid a prohibiting cost

- Attention is given to the label to compensate the impact of a new appliance on his energy bill, already heavy due the high number of appliances
- Replace his appliances when they are obsolete even though they're still functioning

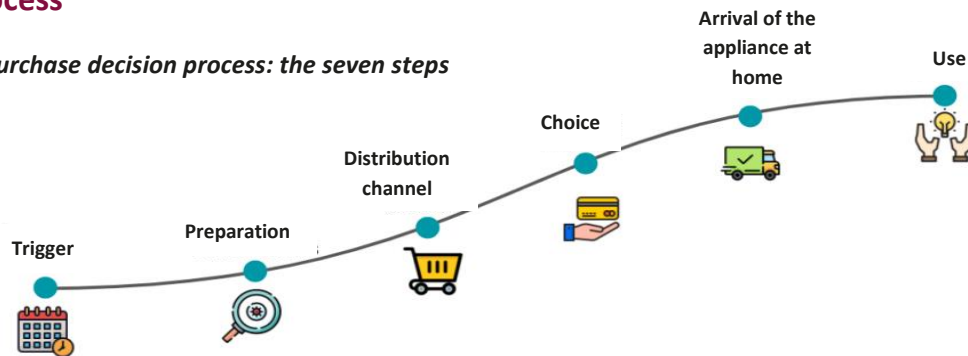
- Inconsistency between a pro-environment claimed approach and a non-efficient purchase
- Generally speaking, tries and buy less but at the same time, likes to indulge himself on some purchases, and particularly electronic goods

- For electrical appliances, very little attention to the energy label because little interest for the subject
- Delegates the responsibility to industrial stakeholders to propose efficient products

- Use his own criteria rather than the energy label to assess the energy-efficiency of a product
- Familiar to the subject of ecology but reject the « ecologist / green » figure

The energy criterion is present during the whole purchase decision process

Purchase decision process: the seven steps



1. The buying trigger influences the way the energy label is taken into account (or not). It depends first on the type of appliance needed: consumers tend to postpone the purchase of a refrigerator, and of a dryer, considered energy-intensive. Buying a TV relates more to a “pleasure purchase” rather than a practical need, which does impact negatively the degree with which the energy label is considered. Some particular situations also minimize the attention given to the label: emergency situations (unexpected breakdowns) and multiple purchase (ex. after a divorce) – in the latter case more attention is given to the price. Replacing an appliance by a more efficient model is constantly balanced with repairing the old one. But repair itself also raises a number of questions / obstacles: cost, obsolescence, technical feasibility, prescription from the salesman to buy a new one...

2. Preparing the purchase: the energy label is a victim of consumers’ growing autonomy in their research. Because they face a situation where they have a tremendous choice between models that are sensibly the same, consumers are developing strategies to simplify their choice. Having the energy label as a priority criterion is rarely one of those strategies, the most recurring being the impulsive buying (“crush”, promotion...). Only few consumers are acting like “professional buyers”, taking into account a wide range of criteria in their research, the energy label being part of the list. Majority of the consumers do few researches for this type of appliance, and they will choose

amongst the products that are commercially emphasized. First time buyers are doing a bit more research than those replacing an existing product. Therefore, there is a challenge to guide them efficiently. Consumers usually get informed through online shopping websites and are less likely to use independent and expert sources of information (consumer associations, Topten Guide...). Some are still going in-store to see the products, but their choice is usually made already, and they don’t interact much with the salesman if not to confirm it.

3. The purchase channel influences the attention given to the energy label. Buying in-store is the most favorable channel to the energy label because the label is very visible and acts as a nudge, as well as the salesman speech which encourages consumers to go towards energy efficient products. But consumers visit less and less the stores, or sometimes just to collect a good bought online. The other distribution channels appear less favorable to the energy label. Buying online, which is becoming the most common practice for this type of appliances, offers a wide range of products, but the most efficient ones are not necessarily emphasized and often consumers need to do several clicks to access the energy label. When consumers are buying through kitchen fitter shops, they usually have a more constrained choice (their budget is limited due the fact they are undertaking works, and a limited space to fit in the appliance). Finally, the second-hand market is not commonly used for this type of product (large electrical appliances)

and even if they do, the energy label is often missing. Indeed, it is not an obligation to provide the energy label on the second-hand market..

4. When it comes to the choice, various ways of considering the energy label

- For some consumers, the energy label is an **essential criterion**, mostly when they are in a long-term investment position and / or when this purchase is part of a more general approach of reducing their carbon footprint. In this case, they usually have an elevated threshold for the energy efficiency and they give some attention to the lower part of the energy label.
- For others, the energy label is a **secondary criterion**, mostly when they look for the best value for money, or when a brand is seen a sufficient indicator of quality. Usually they trust the energy label but only take into account its upper part, and consider it moderately because they consider that there is not much difference between the upper grades.
- Finally, for others, the energy label is **not a criterion**, and especially for consumers who associate it with a commercial process of greenwashing. Therefore, they don't take it into account during their purchase, but prefer using other criteria they consider more important: brand, recency of the product, or a technology considered as energy-efficient (Led for instance). That does not mean they will necessarily choose an appliance that is not of a high-performance in terms of energy-savings.

Beyond those considerations, some other criteria divert consumers' attention from the energy label: the discount approach (looking for the less expensive product), compatibility (having an appliance that fits the required dimensions), and the choice for a bigger size equipment, for which the consumers can feel they are buying energy-efficient appliances, but which bigger size cancels the benefits.

5. The arrival of the appliance in the household is a missed opportunity to provide advice on

the most efficient use of the appliance. This step is the link between the purchase and the use of the appliance, but it is rarely an opportunity to get advice on the most energy-efficient usages of the appliance, even though habits are usually taken in the first few weeks. During the delivery, priority is given to logistic considerations, and the delivery person is not considered legitimate to provide technical advice, whereas installers are. When advice is given, the tone is set on maintenance, while advice on the use could benefit to consumers and contribute to energy saving practices (ex.: not place the refrigerator close to a heating source, advice on the temperature set up...).

6. Beyond the energy label, uses and practices determine greatly the effective consumption of the appliance. An optimal use of the appliance presupposes a minimal level of knowledge of the way it is functioning. But rare are the consumers that read user instructions. Either they usually base their practice on previous experiences, or they wait for a problem to occur to refer to the manual. New ways of transmissions are yet to explore (ex. simplified user manual...).

In the end, four elements are influencing the effective energy consumption of the appliance. 1/ The way it is set up, most consumers aren't changing the "by default" settings because they don't have other criteria in mind. 2/The way they use their appliance – it being a controlled usage (ex. use the dryer only in winter) or reversely an unrestrained usage. 3/ The continuity of the usage – either continuous or interrupted (ex. turn off the refrigerator during holidays). 4/ The maintenance of the appliance, for which consumers don't always perceive the energetic impact, except for the defrosting of the refrigerator.

Management of the electrical appliances: new opportunities for energy-conservation

Beyond the energy efficiency of each appliance, it is necessary to consider the consumers' electrical appliance stock as a whole, to reduce

energy consumption. We enter the world of energy-conservation (or energy sufficiency) by studying households' lifestyles and habits as regards to their electrical appliance stock.

The energy consumption of all their appliances is underestimated by households

Hierarchy in the various energy-consumption sources is rarely known by consumers. They usually have an idea of an approximate estimation of each appliance consumption but not a global view of all the sources of energy-consumption.

Their approximation of consumption per appliance is usually based on their experience, beliefs or family transmission: some appliances (ex. dryer, oven) are considered energy-intensive, but those considerations are not based on technical arguments. **Consumers are confused between various elements such as power, consumption and use-frequency.** This confusion leads some consumers to buy more powerful appliances, thinking they would be more energy-efficient as well.

To estimate energy-consumption, consumers use their own subjective criteria (use frequency, production of heat, lifespan...) which are not always coherent with the label. Some more expert profiles closely monitor their consumptions (notably via smart-meters like Linky).

An evolving social norm: from being overequipped to being underequipped

All of the participants in the study say they are over the minimum threshold of equipment, meaning that they are equipped with all the appliances that are useful for their daily life. However, the inventory of their appliances reveals very different levels of equipment, and various attitudes linked to it:

- **Raised awareness of an elevated level of equipment** when doing the inventory of their appliances for the study (profiles: technophile, carefree). Implicitly, this means that the over-equipment is still very present as a social norm and that

consumers need to take a step back to understand it.

- **Satisfaction of being equipped only with "necessary" appliances**, those consumers claim they don't own unused appliances (profiles: parsimonious and organised). However, the notion of need is very subjective and what is "necessary" won't refer to the same appliances for everyone.
- **A global energy-saving approach prior to the study** for which consumers claim their willingness to reduce their consumption more generally (profiles: committed, suspicious, inconsistent). They express the need to get rid of the unessential and to avoid accumulating new appliances and objects.

Weak signals towards a diminution of the level of equipment...

Those weak signals are anchored in three approaches:

- **Minimalism**: a voluntary process which aims at reducing the household clutter (and the number of electrical appliances) for an improved well-being.
- **Second hand**: encouragement to give a second life to objects and appliances by repairing them, giving them away, or buying second-hand...to *in fine* consume less new products.
- **Self-regulation of behaviours**: get rid of an appliance or postpone its purchase to avoid its use, considered quite negatively (ex. stop coffee, or postpone the purchase of a TV).

...But trends are still leaning towards accumulation

Apart from those three approaches, we observe other trends, which act like stronger leads towards the accumulation of more appliances:

- **Technical progress encourages both new acquisitions and replacement of appliances** for models with new functions or using new technologies. Currently, the

trends for the installation of air-conditioners and connected objects generate new purchases.

- **Changes in lifestyle introduce new needs for appliances:** working from home (new needs such as a printer, a microwave to heat food...) or the trend around increased well-being (bread making machine, juice extractor...).
- **Social pressure to accumulate more appliances is illustrated through various forms:** a peer group which implies conformism between its members (ex. buy an electric bike), the gift ritual with family and relatives which leads to the accumulation of unused appliances, or a commercial pressure with subscription giving the right to promotions for instance (ex. Amazon Prime).

Unused appliances are invading our closets

Those trends towards the accumulation of equipment lead **to a stock of unused or not-much-used appliances**, that we have classified in three categories.

First, the *ad-hoc* appliances, the archetypical example being the “raclette” machine, which seems to be present in most of the French households although it is used once or twice a year. Then the temporary appliances, which have been bought for a temporary use like the baby bottle warmer. And finally the obsolete appliances, for which the technology is obsolete or not used much anymore (digital camera), or which are partly defective.

The conservation of those appliances even though they are not used much is to understand through the dialectics of visibility. Because they are not used much, they are stored away to make some space, which in return accentuates their low level of usage. Moreover, getting rid of those abandoned appliances face various

constraints: practical (logistics of getting rid of a broken fridge), social (hard to make a gift disappear) and symbolic (sentimental value).

The energy label and its perception by consumers

The energy label is a tool that is well settled in consumers’ habits, especially as it has been replicated in other consumption sector (Energy Performance Diagnosis for house properties).

Participants recognize its principle, but insist on the effects on the production line rather than on their own decisions.

They express their expectations in terms of complementary information that could go along the new format of the energy label:

- Being able to compare energy classes via an image: don’t mention the savings in kWh but in “use equivalent” or another appliance
- Integrate information on the global ecological impact: grey energy, source of the product...
- Give examples of level of consumption in real life and not only “laboratory assessed” consumptions

However, there is no consensus on the displaying of the saving in €, or on the digitalisation of the label, which is of interest for only few profiles, and notably the technophile.

Consumers are expecting to see communication during their customer journey, through a short and playful format. In other words, it seems appropriate to do a ‘situated’ communication at the point of sale (either in-store or online).

Professionals that are selling those appliances are considered legitimate to carry this message, but they need to be supported by public authorities.

ⁱ ADEME, *Chiffres-clés Climat, air et énergie*, 2018.

ⁱⁱ ENERTECH, *Campagne de mesures des appareils de production de froid, des appareils de lavage et de la climatisation*, ADEME, 2016

ⁱⁱⁱ Michel A., Attali S., Bush E., *Energy efficiency of White Goods in Europe: monitoring the market with sales data*. ADEME, 2016.