Information as key factor for marketing and consumption of durable and repairable goods

Durability index and its applicability in Canada

OCTOBER 22, 2024

Équiterre

Contributions

WRITING
Amélie Côté
Source reduction analyst | Équiterre

Julie-Christine Denoncourt
Source reduction project manager
Équiterre

Marc Journeault
Full professor | Centre de recherche en comptabilité et développement durable (CerCeDD)
Université Laval

Liane-Clarisse Mouchon
Research professional in circular economy | Centre de recherche en comptabilité et développement durable (CerCeDD)
Université Laval

Chloé Steux
Assistant professor | École Polytechnique

TRANSLATION
Lee Zimmerman

CONTRIBUTION
Méralie Murray-Hall
Project manager, qualitative research and analysis
Humain Humain

Francis Therrien
Analyst and writer | Humain Humain

METHODOLOGICAL SUPPORT
Erick Lachapelle
Association professor, Department of Political Science | Université de Montréal

REVISION
Claudia Déméné
Associate professor and Director, École de design | Université Laval

LAYOUT
Marianne Legault
Graphic designer | Équiterre

Équiterre

UNIVERSITÉ LAVAL | Centre de recherche en comptabilité et développement durable

Humain Humain

FINANCIAL SUPPORT

To carry out this research, Équiterre received funding under the Contributions Program for Non-Profit Consumer and Voluntary Organizations of Innovation, Science and Economic Development Canada. The opinions expressed in this report are not necessarily those of Innovation, Science and Economic Development Canada.

With funding from
Canada

Table of content

List of tables and figures

About Équiterre

By 2050, Équiterre's goal is to contribute to the emergence of solutions, the transformation of social norms and the adoption of public policies. This progress is helping to establish new principles for how we feed ourselves, how we get around and how we produce and consume, that are designed for our communities, respectful of our ecosystems, in line with social justice and low in carbon.

Recognized for its credibility and pragmatism, the organization brings together experts from the fields of awareness, mobilization and public policy. Équiterre works to influence decision making by citizens, organizations and governments to accelerate the just and ecological transition toward a more resilient society. It proposes solutions on how to demonstrate, rally and influence in order to achieve tangible outcomes for the desired social transformation. Its expertise, accomplishments, network and reach make it an indispensable actor in the climate and environmental movement. Buoyed by its 30 years of experience, Équiterre is one of Quebec's and Canada's most influential environmental organizations, boasting over 164,000 followers and 22,000 members.

One of Équiterre's objectives is to accelerate the transition toward a durable, circular economy geared to our collective well-being and internalizing the impacts on humans and the environment. In the face of the climate crisis, our modes of production and consumption must change radically.

The organization has identified durability of goods and access to repair as priority strategies for the circular economy and for transitioning to lower consumption. These strategies are part of the necessary changes in our modes of production and consumption to reduce resource waste.

Summary

This research is a follow-up to the study "Working Towards Repairable Appliances and Electronics in Canada" published by Équiterre in October 2022, which recommended establishing a Canadian durability index to address the lack of information on the durability and repairability of Canadian goods. This recommendation was modelled after a French law that makes it mandatory to post a repairability index for certain appliances and electronics. Having taken effect in 2021, the law will also introduce a durability index for televisions and washing machines in 2025.

The analyses conducted are part of a turning point in the right to repair, both in Europe and in North America. We are learning from the initial outcomes of France's repairability index. Meanwhile, other countries and regions have followed France's lead or are at least contemplating similar indexes. The European Union is developing a repairability index for all its member countries. In addition, a number of right to repair laws have recently been passed at the state level in the US, and legislative amendments have been adopted or are on their way in Canada. Quebec has shown the Canadian provinces the way by updating its Consumer Protection Act in 2023 with various right to repair measures.

Through an analysis of a review of the literature including 28 assessment and information tools on product durability (AITPD), results of meetings with experts and interviews with consumers, **this research seeks to highlight the conditions for an effective durability index and its potential application in a Canadian context.**

The key results are as follows:

The public is definitely interested in durable products, especially when the products are expensive. A good's durability is seen as a feature that can help consumers save money. There is a greater interest in durability than repairability. The results of a recent survey show that Canadians hunger for product reliability and durability, viewing this as their second leading purchase criterion (after price). Nearly all of the 25 subjects of the semi-directed interviews showed an interest in durability. In these interviews, product brand emerged as an important or even priority criterion when it comes to choosing a computer or washing machine.

With mandatory AITPDs being a relatively recent development, the impacts on consumers' purchasing decisions and on corporate practices are difficult to measure. The studies and interviews suggest, however, the potential influence of a durability index on purchasing decisions. A recent French study shows that the proportion of more-repairable products sold has increased in relation to less repairable products, and that the average repairability index for products sold tends to increase over time.

The report contains the following recommendations:

- Introduce a mandatory Canada-wide durability index that is regulated by the legislation, and phase in the index by product category.
- Provide for a participatory development process with stakeholders representing civil society and the repair sector.
- Develop a scoring system patterned after the French approach, including criteria determination and weighting. Special attention should be paid to repair prices.
- Ensure that various information is displayed, including an aggregate score with a standard color code, and that there is access to additional in-store and online information.
- Institute independent control measures, require periodic review of the methodology and roll out an awareness strategy. These tools will help establish the index's credibility – an essential success factor in ensuring buy-in from all the stakeholders.

Lastly, the durability index must be part and parcel of a series of legislative, ecofiscal and logistical solutions to ensure that Canadians have real access to durable and repairable goods.

1. Background

In October 2022, Équiterre released a Canada-wide study on access to repairs of home appliances and electronics (HAE). A survey of 2,080 Canadians highlighted the fact that three in five respondents had dealt with at least one broken HAE in the previous two years and that on average the product had ceased working 2.6 years after purchase. And yet despite the short amount of time between purchase and defect, only 19% of the respondents had had their device repaired.

HOME APPLIANCES AND ELECTRONICS (HAE)

Wide range of products equipped with a circuit or electric components, powered by electricity or battery. Examples: washing machine, computer, coffee maker, camera, microwave, etc.

Note: All of the definitions in this report can be found in Annex 1.

The main reasons for this low uptake of repair services lie in consumers' perception that HAE are not repairable, in the difficulty accessing tools and replacement parts and in the dearth of information on do-it-yourself repairs or on where to find repair services.

To counter the lack of information at the time of HAE purchase and to help extend their lifespan, **Équiterre[1] recommended establishing a durability index in Canada.** This recommendation was prompted by the French legislation, the details of which are presented in the next section.

DURABILITY

Capacity of a good to last a long time, to maintain its performance and quality as time goes on. This requires the product to be well made, reliable and repairable.

According to Équiterre's 2021 survey[1] of 2,080 Canadians, 57% were in favor of creating a special label to identify the most durable or repairable products. Interviews with 30 repairers showed that they too were open to this idea.

LABEL
Distinctive label appearing on a product to guarantee quality or compliance with manufacturing standards[2].

REPAIRABILITY
For a product, the quality of being easily repairable[3].

1.1 FRENCH REPAIRABILITY AND DURABILITY INDEXES

In January 2021, the French government introduced a mandatory **repairability** index for certain HAE categories (cell phones, televisions, laptops, front-loading washing machines and lawn-mowers). In November 2022, it expanded the scope to include dishwashers, vacuum cleaners, pressure washers and top-loading washing machines.

Taking the form of a score from 1 to 10, the repairability index integrates multiple criteria and must be displayed at the point of purchase (mandatory). This index seeks to provide consumers with a more informed choice at time of purchase and to encourage manufacturers to produce a more repairable product[4]. Figure 1 presents examples of how this index looks for different scores.

Figure 1. Sample repairability index visual[5]

A 2022 French study[6] comprising interviews with 27 consumers and a survey of 1,206 individuals showed that three quarters of the French find the repairability index useful when choosing which product to purchase. This speaks to a genuine impact on consumers.

In 2020, the *Loi anti-gaspillage pour une économie circulaire* (AGEC) called for this index to transition to a durability index, also mandatory. This transition will take effect in 2025: a durability index will take effect for televisions and washing machines, and will be based on repairability, **reliability** and upgradability criteria. The details of these index criteria can be found in Section 3.2.3.

RELIABILITY

Likelihood that a product will function as required in a given set of conditions, for a given length of time, with no breakdowns caused by a technical defect or by natural wear and tear. This is a statistical notion growing out of tests conducted on thousands of products[7 and 8].

This change is consistent with the feedback from the introduction of the repairability index. In fact, a survey[9] carried out in November 2021 with 15,800 people in 17 European countries shows that 86% of Europeans view the repairability index as an important criterion in choosing a product. Even greater interest in the durability index was observed, since 90% view it as an important criterion.

According to a 2024 Équiterre and RECYC-QUÉBEC survey[10] of 2,183 Canadians, reliability and durability constitute the second leading purchasing criterion, trailing price but far ahead of repairability. This criterion is among the three main purchasing criteria for 53% of the respondents in the case of household appliances and 47% in the case of electronics, versus 11% and 8% for repairability.

The results of this Canada-wide survey show that durability is potentially more influential than repairability on purchasing behavior.

Other countries and regions have taken France's lead or are considering introducing repairability and/or durability indexes, including Belgium, Spain, the UK and Taiwan. Currently, the European Union (EU) is developing a repairability index for all of its member countries.

1.2 RIGHT TO REPAIR IN NORTH AMERICA: A TURNING POINT

For some years now, a movement advocating for the **right to repair** has been growing in Canada and the United States, at both the state/provincial and federal levels.

> **RIGHT TO REPAIR**
>
> Right to have one's objects repaired or to repair them oneself, in a timely and affordable fashion. This generally requires regulations stipulating that manufacturers design their products in such a way that they are repairable and ensure access for a time to the manuals, diagrams, parts, software and tools necessary for their repair at a reasonable cost.

In 2023, Quebec was the first Canadian province to pass a law on the right to repair: the *Act to protect consumers from planned obsolescence and to promote the durability, repairability and maintenance of goods*[11]. Manufacturers and merchants in a number of HAE categories and the automobile sector must provide a warranty of good working order for a set period depending on the product. They must also make available repair services, replacement parts, tools and documentation for a reasonable time and at a reasonable price.

Other provinces have tabled similar legislation. Since 2019, two bills have been introduced in Ontario. The most recent[12], tabled in April 2024, covers HAE, wheelchairs, a number of motor vehicles (including electric power-assisted bicycles) and agricultural equipment. A bill[13] on the right to repair, targeted specifically at agricultural machinery, was tabled in Prince Edward Island in 2023. Similar legislation[14] was also tabled in 2021 in Manitoba, as well as another bill[15] covering electronics. However, none of these three bills passed, as the party in power failed to support them. In British Columbia, municipalities banded together in 2021 to call for the adoption of the right to repair province-wide[16].

While the fate of various bills being considered remains uncertain and others have been rejected over the years, the fact that parliamentarians are introducing them illustrates the growing interest in the repairability and durability of goods in several regions of the country.

Quebec's Government circular economy roadmap 2024-2028[17] published on April 16, 2024 contains various objectives having to do with the present study, including:

Put in place economic, information, awareness and training measures facilitating access to repair for consumers.

Improve environmental labelling to foster responsible consumption.

In the US, some 20 states have bills currently being considered. To date, seven states have passed right to repair laws covering a variety of goods (wheelchairs, automobiles, tractors)[18], and of these states, four have passed laws covering household appliances and/or electronics (New York[19], Minnesota[20], California[21] and Oregon[22]). Like the Quebec statute, these laws require access to certain key repair items (parts, documentation and/or tools), with certain variations or clarifications by state (e.g. products covered, period of availability of replacement parts, etc.). Oregon, Minnesota and California even apply these requirements to goods produced before their law was passed, i.e. July 1, 2021. Oregon goes further still, applying these requirements to goods produced as early as 2015, except for smartphones, where the law is retroactive to July 1, 2021. In December 2023, a bill[23] to introduce a repairability index was tabled in New York State.

The right to repair movement in the United States, which comprises a market of 342 million people, versus 39 million Canadians in 2024, is helping create a favorable climate for measures supporting access to repair in Canada.

At the federal level in Canada, two bills were introduced in 2022 and remain under discussion (C-244[24] and C-294[25]). Both bills aim to facilitate the diagnosis, maintenance and repair of certain HAE by permitting the circumvention of certain measures contained in the *Copyright Act*. One bill[26] to amend the *Competition Act*, which passed in June 2024, prevents manufacturers from refusing, in an anti-competitive manner, to provide the parts, tools, or software needed to fix devices. Lastly, in its 2024 budget, the Canadian government announced it was studying "the merits of a durability index" and consultations aimed at developing a right to repair framework that would place emphasis on durability[27]. These consultations[28], announced in summer 2024, will ran until September 26, 2024.

2. Objectives and research methodology

The combined effect of a North American political context favorable to the right to repair, the public's interest in durability and Europe's introduction of several tools designed to better inform consumers about the features of the goods they consume constitutes a context conducive to the growth of assessment and information tools on product durability (AITPD).

ASSESSMENT AND INFORMATION TOOLS ON PRODUCT DURABILITY (AITPD)

Tools aimed at measuring product durability to encourage manufacturers to turn toward eco-design, and at better informing consumers so they can make info.

ECO-DESIGN

Product design strategy that takes into account potential environmental impacts throughout the product's life cycle and seeks to minimize them[29].

The primary objective of the study is to highlight the effectiveness of a durability index and its potential application to the Canadian context.

Secondary objectives are as follows:

Assess a durability index's potential influence on Canadians' purchasing behaviors and on manufacturers' practices.

Analyze various AITPDs and identify success/failure factors.

Identify and analyze advances on France's repairability and durability indexes.

A review of the literature was carried out to gain a better understanding of the issues surrounding the display of information about product repairability and durability. The review examined an analysis of 28 AITPDs to identify known factors for the success or failure of the French repairability and durability indexes. **Semi-directed interviews with 10 experts** from Europe and North America helped clarify findings from the review of the literature. These experts were chosen for their involvement in the right to repair movement or in developing or implementing certain AITPDs. These interviews also complemented the review of the literature thanks to the experience of the stakeholders working for several years on product repairability/durability questions. The interviewees represented businesses or representatives of repair businesses or manufacturers, public administration, NGOs, environmental organizations and consumer protection groups.

To better understand purchasing behaviors as well as the interest in and importance/influence of information on product repairability and durability in purchasing decisions, **25 interviews were conducted with consumers** across Canada.

Details on the methodology of each of the research steps can be found in Annex 2.

The main limitation of the research lies in the fact that the durability index was not yet in place at the time of the writing of this report, and that the repairability index was still relatively new. This context limited our ability to assess the potential impacts relating to their implementation, for both consumers and manufacturers.

Section 3 presents the results of the review of the literature and of the interviews with the stakeholders. Section 4 describes the results of the interviews with Canadian consumers. And Section 5 details the recommendations growing out of the research.

3. Review of literature and stakeholder interviews

The first part of this section explores Canadians' interest in the durability of the products they buy, and the information available to date to help them make informed purchasing decisions. The second part examines the process of developing and implementing a durability index. The section concludes with a review of the desired/observed effects of implementing an AITPD.

3.1 INTEREST IN DURABILITY

A number of studies[30 and 31] illustrate people's interest in product durability, which is also associated with reliability and **sturdiness**. In fact, a product characterized as durable tends to be seen as a higher-quality product and to reassure consumers about its capacity to last a long time.

STURDINESS

Product's resilience to unpredictable or undesirable events without sustaining excessive damage relative to its original state[32].

Consumers' interest in durable products also lies in the amount these items save them in money, time and effort by remaining in working order. This amortizes the acquisition cost of these objects over a long period[30 and 33].

In addition, buying durable products enables informed consumers to align their consumption choices with their personal values and convictions[34].

Durability is especially important for people thinking about buying expensive products known for their relatively long lifespan and for not going out of fashion[30, 31 and 33]. This is reflected in the results of a 2024 Équiterre and RECYC-QUÉBEC survey[10] of 2,183 Canadians mentioned above. It showed that reliability is a priority purchasing factor for 53% of the respondents when purchasing a household appliance, compared to 47% for a computer.

The perception about information on repairability is not as black and white, since easier-to-repair products are sometimes thought of as being more prone to breakage[33].

The analysis of durability and repair incentives and obstacles in France[34] and the European Union[30 and 33] shows that consumers feel they lack information on product durability and repairability. This is echoed by the four Canadian and American experts interviewed as part of this study, who bemoan the absence of regulations in this area.

According to a groundbreaking six-country survey of 6,042 participants by the European Commission,[30] when information on durability or repairability is provided, **consumers are nearly three times more inclined to choose a product offering greater durability**, versus twice as inclined to choose a product with a higher repairability score.

While durability and repairability are two factors likely to influence purchasing behaviors, there is a pronounced interest in durability.

3.2 PROCESS FOR DEVELOPING AND INTRODUCING AN ASSESSMENT AND INFORMATION TOOL ON PRODUCT DURABILITY

The findings in this section are taken mainly from the analysis of 28 AITPDs, consisting of:

- → 14 optional tools, most developed by government and non-government organizations and by standards organizations;
- → 10 tools specific to those who developed them (manufacturers, retailers and NGOs); and
- → 4 mandatory, government-regulated tools.

The scope of these tools is provincial, national, supranational or international. The 28 AITPDs are detailed in Annex 3.

Tools for informing consumers about product durability have been in place for a long time. Take, for instance, the *Blue Angel label*, created in 1978 by German public officials. These were originally voluntary tools managed by public agencies or growing out of private initiatives.

"Internal" tools, specific to those who developed them, came into being next. The iFixit repairability score, created in 2003, is one such example. More recently, the French entities Belong and Fnac-Darty introduced AITPDs, as well as parallel measures such as a five-year extended warranty[35] or maintenance/repair subscription services[36].

The limited scope of optional AITPDs, their lack of visibility/large-scale rollout, and the limited number of products covered by these developer tools can explain consumers' mixed reactions to the lack of product durability information.

It is only just recently that mandatory AITPDs came into being, in France and Europe. The French repairability index led other countries to pay closer attention to the repairability and durability of household appliances and electronics. Belgium, for one, passed a law requiring manufacturers and retailers to provide a repairability index beginning in 2026[37]. The existence of France's repairability index enabled Belgium to act more expeditiously. Their iteration is based on the same calculation methods as used by the French index and covers the same product categories, except for smartphones which are not covered in Belgium[38].

The following subsections detail the various aspects having to do with AITPD development and implementation:

- Determination of nature and scope
- Method of development and involvement of stakeholders
- Determination, articulation and weighting of assessment criteria
- Display modalities
- Conditions of success for implementation

3.2.1 Nature and scope of application framework

As indicated in the previous section, AITPD can be voluntary or mandatory.

There are a number of advantages associated with **mandatory AITPD**s, including:

- Mandatory labelling makes companies more inclined to attempt to improve their environmental performance[39];
- Standard application of one method creates a level playing field for manufacturers[33 and 39];
- The public has more trust in and familiarity with the tool[33 and 39];
- Consumers can make a more informed purchasing decision thanks to a more uniform availability of information among the various products within a category[33], a notion supported by three of the experts interviewed representing companies or working in the field of consumer protection;
- The effects associated with AITPD implementation can be more easily measured, from the dual standpoint of purchasing practices and product eco-design[34]. Three of the experts interviewed representing manufacturers or working in the field of consumer protection also identified this advantage.

The choice of an AITPD **application scale** is also an important factor in the development process.

The co-existence of the French and European indexes illustrates possible tensions and contradictions with AITPDs developed at the supranational level: if the French index helped put durability on Europe's agenda more quickly, at the same time the EU took a different path by developing labelling that incorporates information on product durability that differs greatly from the French index.

The willingness of both France and the EU to apply their tools to smartphones and tablets caused a conflict, which led to these devices being removed from the list of products covered by the French durability index[40 and 41]. As a result, the French durability index will initially cover only televisions and washing machines.

AITPDs have one application per product category, such as electronics or household appliances. Generally, they initially apply to a number of products in one or more product categories before their scope is expanded to a larger number of products in this (these) same category(ies), or to new categories of products.

Having the tool apply to product categories helps establish set criteria adapted to the product features in order to assess product durability.

Selection and prioritization of products covered.

Products can be selected on the basis of various criteria. The following criteria were identified by two of the experts interviewed representing companies, as well as appearing in the literature:

- → The products are used relatively often by consumers.
- → They are frequently replaced (e.g. smartphones, printers).
- → They break down relatively often.
- → They are subject to aesthetic or psychological obsolescence (fashion-dependent).
- → They are valuable (durability matters more for expensive products).
- → Their manufacture leaves a large environmental footprint, but not their use[30 and 33].

3.2.2 Development method and stakeholder involvment

There are two methods for developing an AITPD: consultative or participatory.

Consultative methods are based on an existing proposal by a committee of experts, which is then submitted for consultation by the stakeholders and/or for public consultations. The final decision on the criteria (or other decisions) is up to the entity overseeing the methodology.

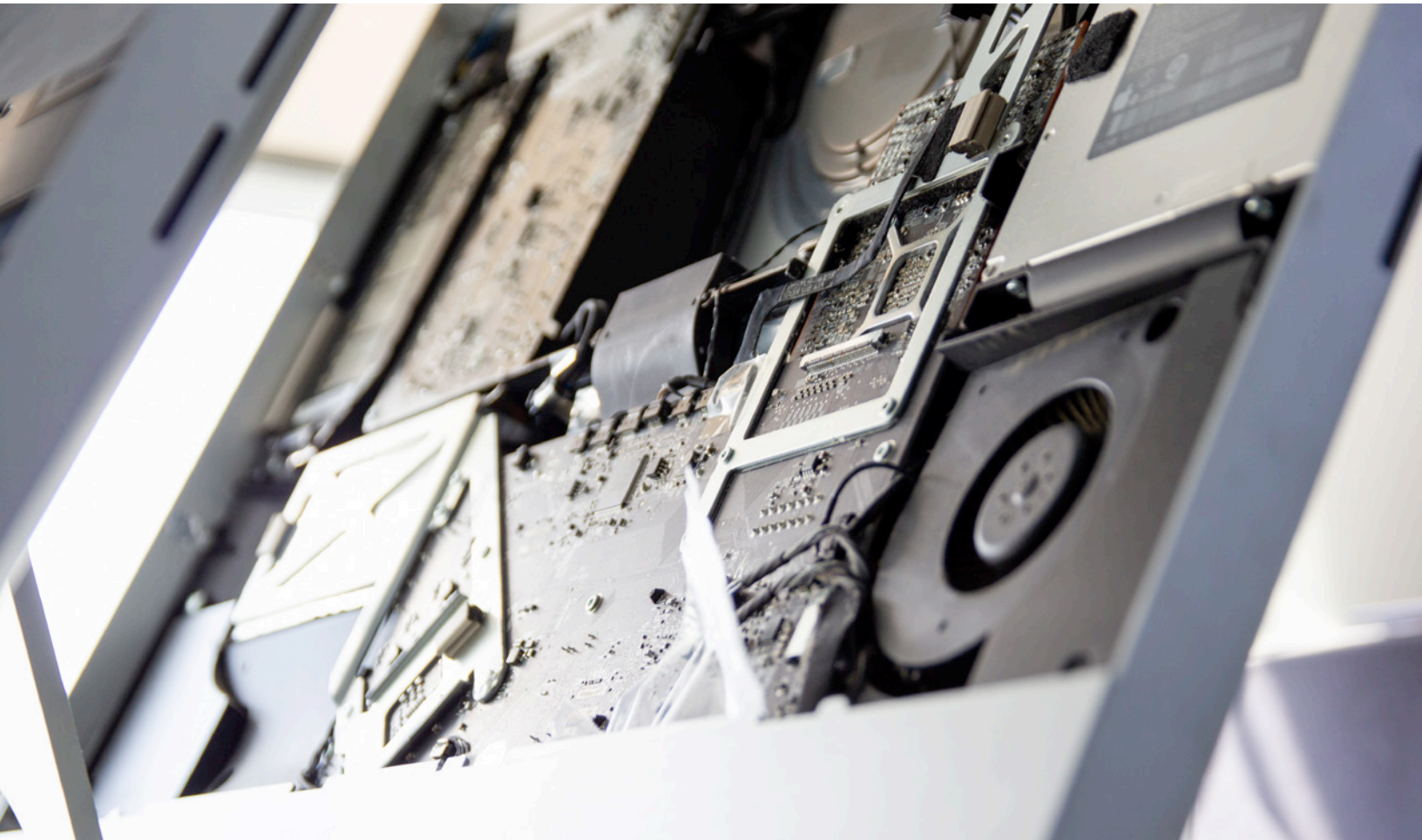
Participatory methods involve working groups made up of stakeholders and others. They help build the method and usually help develop the criteria.

The transparency of the AITPD development process is of crucial importance and impacts on the credibility with consumers and their trust in the tool[42].

According to several of the experts interviewed representing NGOs, the government and businesses, participatory methods are the way to go, because they are more democratic. They also enhance the AITPD legitimacy and recognition, foster buy-in by the various stakeholders and facilitate tool adoption[33 and 43].

Stakeholder representativeness is a central issue, as it strongly influences consumers' trust in the tool. Calling on a variety of stakeholders is seen as a catalyst for trust[31, 33 and 44]. The interviews showed that achieving balance when it comes to stakeholder representativeness is a delicate task. But when there is a plurality of voices, this helps balance the process for creating the AITPD and reflects the representativeness of the marketplace[45].

Several interviews with representatives of NGOs and businesses highlighted the fact that organizations representing civil society lack the human and financial resources that manufacturers have. Their participation in this type of process is costly, and they are more likely to opt out. One suggestion on how to limit this risk and maintain balanced participation by the various stakeholders is to offer financial compensation so that civil society organizations can take part in the entire process.



Selecting the stakeholders to develop an AITPD: the French example.

As part of the process to develop its repairability index, France did two things to try and ensure a degree of equity: having stakeholders with different interests co-manage the working groups (e.g. having an environmental association partner with a manufacturer), and having ministry officials adjudicate any disputes. According to several of the interviewees representing the government, NGOs and businesses, this made it possible to maintain a certain independence and to avoid favouring the ideas of one group over those of another in the final decision.

While the French repairability index is generally viewed as a success, some of the experts would have liked to see a more diverse group of stakeholders.

→ Three of the experts interviewed with representing the government, an NGO and a business pointed out that there was little representation on the part of the repair and replacement parts sector, and on the part of civil society consumer associations and environmental associations.

→ Overrepresentation of certain stakeholders, in particular manufacturers, was also criticized by three of the individuals interviewed, namely representatives of businesses and of a consumer protection NGO. Representatives of manufacturers are often more numerous than the other stakeholders and get more time to speak.

3.2.3 Development of criteria

The AITPD analysis criteria are central to ensuring the relevance and credibility of the tool. This section offers an overview of the methods for determining, articulating and weighting the criteria.

3.2.3.1 Criteria determination

The criteria on which the AITPDs are based fall into two categories:

1 Criteria directly linked to product durability: reliability, repairability, lifespan and quality.

2 Service delivery criteria, which do not directly involve product design but help extend product lifespan: inclusion of information on maintenance and/or repair, advantageous warranty conditions (e.g. free commercial warranties that extend past the **legal warranty**), manufacturer assistance/support conditions.

LEGAL WARRANTY

Minimum protection under the law that applies automatically upon purchase of a product. It provides for reimbursement or replacement of the item if it is not of satisfactory quality, durable, safe or consistent with the expectations created by the seller's representations. It also protects against hidden defects.

For purposes of illustration, Table 1 compares the criteria for the French repairability and durability indexes.

Table 1. Comparison of criteria for the French repairability and durability indexes

REPAIRABILITY INDEX	DURABILITY INDEX
→ Availability of documentation	→ Reliability (resistance to stress and/or wear and tear, maintenance, durability warranty and quality process)
→ Availability of parts	→ Repairability (including the repairability index criteria)
→ Parts price	→ Upgrades (software upgrades, operating upgrades)
→ Ease of product disassembly	
→ Final criteria specific to each product category(i)	

The analysis of the 28 AITPDs highlights the fact that the most prioritized criteria for assessing durability are as follows:

1 Reliability, associated with product sturdiness (21 AITPDs)
2 Repairability (19 AITPDs)
3 Product lifespan (15 AITPDs)
4 Upgradeability (13 AITPDs)

(i) For example, in the case of dishwashers, the specific criteria includes three sub-criteria, including usage meter accessibility and no-charge remote support for consumers and repair professionals[76].

To consider a product's **reliability**, AITPDs are usually based on trials and tests (e.g. wear and tear trials, drop tests, traction/flexion tests) generally conducted according to uniform standards.

As for **repairability**, many AITPDs use the sub-criteria from the French repairability index, or from the iFixit scores, which are considered to be straightforward and applicable to a large number of products.

Lifespan is generally understood across a **period of use** in terms of years or usage performance (e.g. number of cycles or hours of use).

Upgradeability is often based on the existence of software updates, or the availability of standardized connectors (e.g. USB-C). More rarely, it can involve allowing the product to acquire new functions, usually from a software standpoint (e.g. data erasure for *Blue Angel*)[46].

PERIOD OF USE

Length of time during which the product is used in working condition and ready for use.

UPGRADEABILITY

A device's capability to be updated from a software or mechanical standpoint while its performance is maintained or enhanced[7].

Repair cost: an essential sub-criterion

While constituting a sub-criterion, **repair cost** is an undeniable issue when it comes to assessing a product's repairability. In fact, repair cost is a major hurdle for consumers in Europe[34 and 47] as well as in Canada[1].

Of the 21 AITPDs with a repairability criterion, only 11 include repair cost, and yet most of the experts interviewed saw the need to include repair cost in any assessment of product repairability.

Definition of repair cost: some thoughts

The way to measure repair cost is subject to debate. In some cases, it is directly factored into the repairability calculation, while in others it is absent from this calculation. Rather, it is inherent in the requirement that repair be accessible at a reasonable price. This is the case with Quebec's *Act*

to protect consumers from planned obsolescence and to promote the durability, repairability and maintenance of goods[(ii)].

According to a number of studies[48, 49 and 50], a **reasonable price** for repair ranges from 18 to 40% of the price of the item when new.

Something else to take into account is the **proportionality of the repair price**[51]. In fact, changing a minor part, such as a screw, should be less costly than changing a more important component. One study suggests that the price charged for a replacement part should not exceed 15 to 20% of the price for the new item[52]. Accordingly, the notion of reasonable/proportionate price would be an interesting avenue to explore.

3.2.3.2 Criteria characterization

AITPDs fall into three categories, where the criteria requirement level varies.

In the category **All or nothing**, the criteria for the AITPD must all be met, without exception, for the wording to be displayed. The incentive for the manufacturer lies in validating all of the criteria to obtain certification for the product in question. In this case, there can be no distinction among all the products certified by a single AITPD, regardless of whether and to what extent the criteria are exceeded. This means there is no incentive for the manufacturer to improve their practices.

For the category **Compulsory + minimum**, certain criteria must absolutely be met, while the accompanying criteria have a minimum requirement to be met for certification to take place. This approach allows manufacturers to set themselves apart if they receive a higher score than the required minimum.

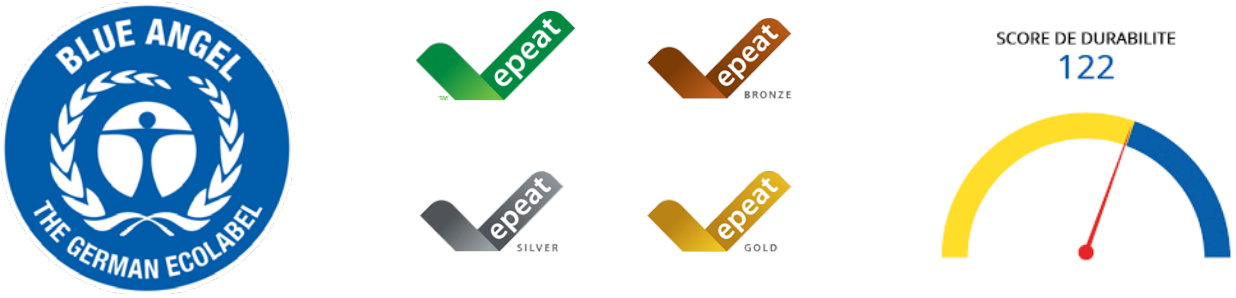
For AITPDs with an approach based on **Optional criteria**, there is a score awarded for each criterion and an overall score is awarded for all of the criteria as a whole. Failing to meet these criteria negatively influences the overall score but does not jeopardize certification. Like "Compulsory + minimum", this approach has the advantage of offering the manufacturer areas for improvement to make its product more durable, with the progress phased in over time. It also gives consumers a differentiated assessment of the durability of the products in question, via the score.

According to two of the interviewees representing businesses, this type of differentiated score is an important factor encouraging competition among manufacturers, and is likely to spur the design of more durable products.

(ii) Under the Act, the price is deemed reasonable if "it does not discourage the consumer or his mandatary from accessing it." Regulations will likely propose clarifications in this regard.

Figure 2 offers a sample image for each of these three ways of characterizing the criteria.

Figure 2. Sample images by AITPD category



All or nothing

Compulsory + minimum

Optional criteria

Avenue for improvement: adjust the scoring for legal requirements

In the case of the French repairability index, which comes under the category "Optional criteria", certain criteria are associated with legal obligations. For example, availability of technical documentation cannot generate a zero score, because it is mandatory under the law.

Two avenues for improvement were suggested by experts representing the government and a company:

→ Adjust the scoring so that the minimum is in line with the legal minimum and the maximum includes an increased commitment by the manufacturer (e.g. a complete maintenance manual and 3D printing plans).

→ Remove legal requirement criteria from the AITPD scoring system.

3.2.3.3 Criteria weighting

The weighting practices for AITPD criteria vary. As is the case with criteria selection, they depend on the durability vision adopted by the organizations devising the tool, and on the influence of the stakeholders involved in the AITPD development process. Weighting also tends to vary according to the product type being considered.

As for the repairability index **developed by iFixit**, the "repairable design" criterion (accounting for 80% of the score) is defined as the steps to carry out to replace each critical component, i.e. each part indispensable to the product working properly. It takes into account the number of actions and the time required to effectuate the repair. Access to documentation and access to replacement parts each account for only 10% of the score.

As for the weighting of the French repairability index, the approach calls for equal weighting of the five criteria, each worth 20% of the final score. Such a weighting method is due to the involvement of a large number of stakeholders in the development process for this AITPD, each with different interests and different visions of repairability. An expert who helped create the repairability index as a member of the government explained that public officials chose this approach to avoid contradictions and opposition. Nevertheless, according to an interviewee representing an NGO and one representing a business, the coefficients applied to the sub-criteria had to be negotiated during the process to build the index. Table 2 presents the repairability index criteria and sub-criteria, as well as their weighting.

Table 2. French repairability index calculation chart[5]

Criterion	Sub-criterion	Sub-criterion score	Sub-criterion coefficient	Criterion score	Criteria total score
1. Documentation	1.1 Availability period for technical documentation and use and care instructions	/10	2	/20	/100
2. Disassembly and access, tools, attachments	2.1 Ease of disassembling parts from list 2(iii)	/10	1	/20	
	2.2 Necessary tools (list 2)	/10	0.5		
	2.3 Characteristics of attachments between parts from list 1(iv) and list 2	/10	0.5		
3. Availability of replacement parts	3.1 Period of availability for parts from list 2	/10	1	/20	
	3.2 Turnaround time for delivery of parts from list 1	/10	0.5		
	3.3 Turnaround time for delivery of parts from list 2	/10	0.3		
	3.4 Turnaround time for delivery of parts from list 1	/10	0.2		
4. Replacement parts price	4.1 Price ratio for parts from list 2 to price for new equipment	/10	2	/20	
5. Specific criterion (e.g. dishwasher)	5.1 Accessibility of usage meter	/10	1	/20	
	5.2 Remote support (no charge)	/10	0.5		
	5.2 Possibility of soft reset	/10	0.5		
				Index score	/10

(iii) List 2: list of 3 to 5 replacement parts at most, where breakage or breakdown is the most frequent (by category of equipment concerned)

(iv) List 1: list of 10 other replacement parts at most where good condition is necessary for the equipment to work (by category of equipment concerned).

It is particularly complex to reconcile the weighting of the reliability and repairability criteria. If both are simultaneously included in most of the AITPDs studied, their relationship is not that simple. Designing a reliable product can involve choices that run counter to product repairability. That is the case when a more integrated and compact design is selected to improve water resistance: the product is thus more reliable, but also harder to disassemble in many cases, so, less repairable.

While some of the experts representing NGOs and businesses agreed on the need to have it both ways, since a durable product should be at once reliable and repairable, how much weight to attach to these criteria was hotly debated at times, as was the case with the French durability index.

Comparison of weighting for the French durability index and the European labelling

The case of the French durability index and of European labelling are particularly instructive when illustrating how to determine, articulate and weight the criteria when developing an AITPD.

In France's case, repairability and reliability seemed to be perceived quite naturally as the two key factors enabling them to objectify durability.

Repairability is logically evaluated via criteria growing out of the existing repairability index. Repair cost, therefore, is included with the "replacement parts price" criterion, which consists of taking into account the price of the parts which most often break down, relative to the price of the new product.

Equipment **reliability** takes account of resistance to stresses and wear and tear (e.g. drop resistance and resistance to heat and humidity), ease of maintenance and the presence of a commercial warranty and a quality process (i.e. a documented continuous improvement process to improve product durability.

The **improvement** criterion is also present. This involves software and equipment upgradeability of devices. Based on the information available at the time of this report, the improvement criterion will not be applied to televisions or washing machines[53].

Reliability and repairability were weighted evenly. In the presence of an improvement criterion (which counts for 10% of the score), these each account for 45% of the score, and in its absence, they each account for 50% of the score. Table 3 details the durability index criteria and sub-criteria, as well as their weighting, for products which include the improvement criterion.

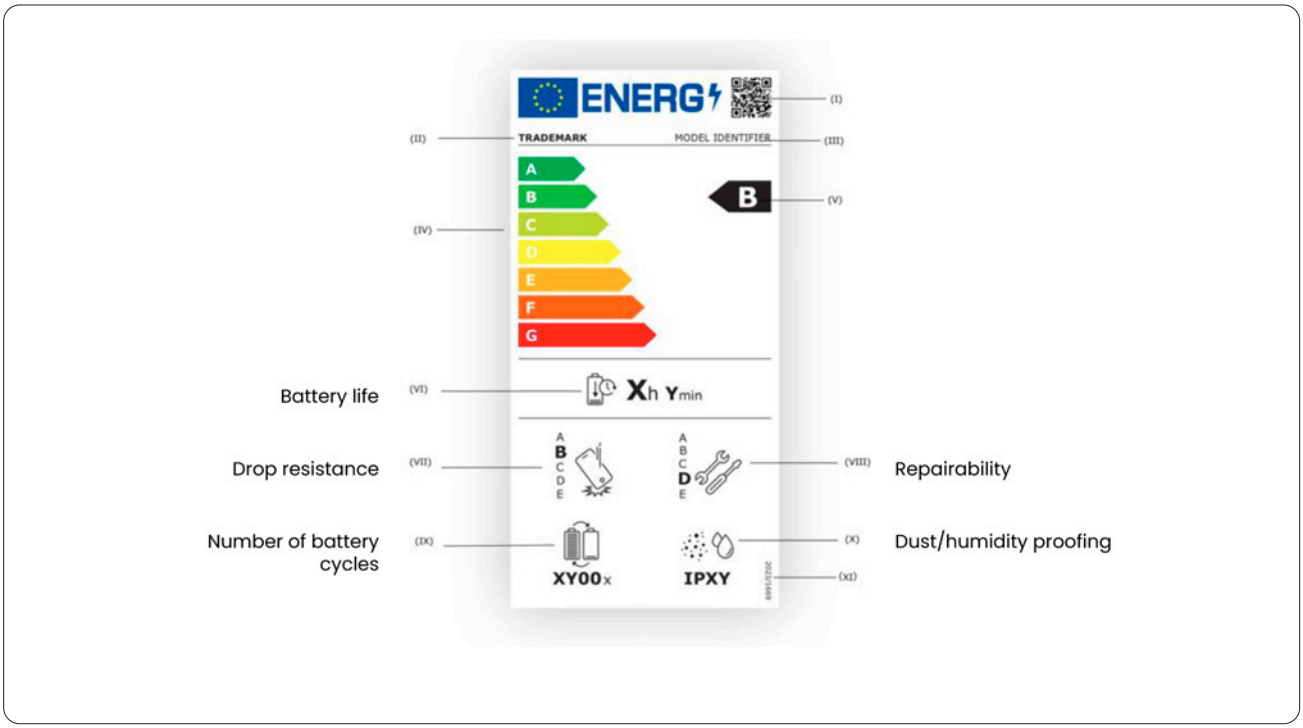
Table 3. Durability index calculation chart for products that include improvement criterion[54]

Criterion	Sub-criterion	Sub-criterion note	Sub-criterion coefficient	Criterion score	Criterion coefficient	Criteria score total
A Repairability	A.1 Documentation	/10	2.5	/10	4.5	/100
	A.2 Disassembly	/10	2.5			
	A.3 Availability of replacement parts	/10	2.5			
	A.4 Replacement parts price	/10	2.5			
B Reliability	B.1 Resistance to stresses and/ or wear and tear	/10	5	/10	4.5	
	B.2 Maintenance	/10	4			
	B.3 Durability warranty and quality process	/10	1			
C Improvement	C.1 Software improvement	/10	7,5	/10	1	
	C.2 Operating improvements	/10	2,5			
					Index score	/10

Weighting of the durability index criteria, particularly repairability and reliability, was the subject of heated debate and strong positions. One expert representing an NGO brought up the case of a consumers association that initially wanted reliability weighted much higher than repairability to take into account product durability, but eventually came around to the position that a very reliable but non-repairable product could not be characterized as durable.

As for the European labelling (see Figure 3), the repairability index was added to existing energy label. It contains an aggregate and standardized score linked to six criteria: depth of disassembly, attachment elements, tools, replacement parts, software updates and information on repair. Alongside, there is information on product reliability: battery cycles, drop-resistance and dust/humidity proofing.

Figure 3. Durability information from the European labelling on energy efficiency and eco-design for smartphones and tablets[55]



Assessing durability as part of the French index and the European labelling relies on the same key components: product reliability and repairability. But these are not understood in the same manner. While both contain elements linked to resistance to stresses and wear and tear, **the scope of the French durability index is more expansive** since it encompasses such things as maintenance, commercial warranty and quality process.

And neither are these criteria articulated in the same manner. **The French AITPD takes the form of an index combining reliability, repairability and upgradeability, whereas Europe chose to juxtapose the information selected** as part of a label that already presents information on energy efficiency.

The other major difference between these AITPDs lies in the **consideration given to repair cost**. This is calculated and integrated into the French durability index, via the "replacement parts price" criterion, while a reasonable price for replacement parts is imposed on European manufacturers as part of broader regulations on eco-design. Three of the interviewees representing NGOs and a business bemoaned the European choice, pointing out that replacement parts price "reasonability" is subjective and that the information set out on a webpage might not be accessible to consumers.

3.2.4 AITPD dissemination

Dissemination methods for AITPDs are extremely varied. They can take the form of a grade, a score, a label with or without a scale (e.g. bronze, silver, gold) or a lifespan forecast. Researchers[42] maintain that the more recent method of **displaying grades is a more easily understood method that disseminates more information to consumers**. This represents an important tool to promote product differentiation.

AITPDs are often displayed with a **color code**, allowing consumers to determine at a glance whether the grade is low, average or excellent. Generally, the colors used are red, orange or yellow, and green. This takes on special importance in terms of the display. Figure 4 presents two examples of the color code.

Figure 4. Visuals and color codes for the iFixit repairability score[56] and the French durability index[57]

3.2.4.1 Relevance and simplicity of information displayed

According to the literature[58 and 39] and an expert representing businesses, the information provided to consumers must be easily understood and comparable – in other words, simple and synthetic – but must also make clear to them what the AITPD measures and reflects.

When durability results from the aggregation of several components, like reliability and repairability, and appears in the form of a score, several choices are possible: displaying a single overall score (durability score), or displaying separate scores for the various components (e.g. one score for reliability and another for repairability).

France chose to display a single durability score for its durability index. According to the *Association de protection des consommateurs UFC-Que choisir*[59] and a former government official interviewed, the risk of going with a single score is that the information will be diluted. For example, if many products receive a similar score, it will be difficult to differentiate among them. On the other hand, this choice has the benefit of providing consumers with a single piece of simple information.

The risk of displaying several scores is information overload for consumers. In fact, **it is important not to put too much information on the label, lest consumers have difficulty correctly interpreting it**[58 and 31].

This risk is especially pronounced in the case of the European label. The large amount of space taken up by the energy efficiency label leaves only limited space for the many pieces of information on durability[60], but makes it possible for individuals to prioritize certain environmental criteria.

3.2.4.2 Transparency of information displayed

Transparency is essential in ensuring the credibility of the AITPDs and consumer trust in these tools[43]. So it is important to make available to the public all of the information on the criteria, calculation methods and development process for AITPDs.

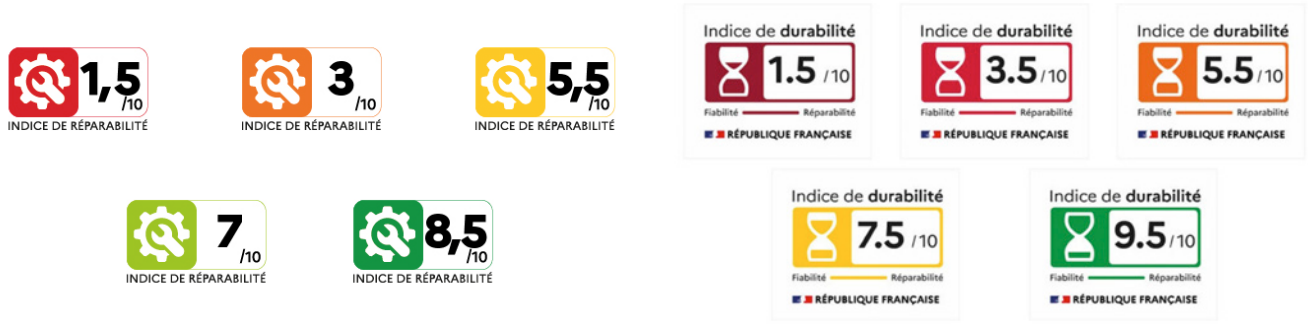
In-store, one option would be to disseminate all this information through a QR code displayed on the product. This choice, which was used for the Longtime label and the European label, has the advantage of making available all of the relevant information without overloading the AITPD display. Online, there could be a link to this information, as is done by the French repairability index to direct consumers to a detailed breakdown of the score. But such an approach could limit access to the information for certain consumers lacking the necessary digital tools and knowledge.

3.2.4.3 Color codes and scoring thresholds

In implementing the repairability index, authorities feared that manufacturers would focus on relatively accessible criteria such as availability of replacement parts (e.g. taking the form of a commitment) without making any true attempt at eco-design, in order to obtain a light or dark green color code (score of ≥ 6) or to avoid the red color code (score of < 2)[45 and 34].

With experience came a number of lessons learned about label display. In the case of the durability index, the color scale was adjusted: it is now harder to obtain a green, and there is now just a single green (score of ≥ 8), and it is easier to obtain a red (score of < 4 going from light red to a darker red). Figure 5 shows the differences in the color codes for the repairability and durability indexes.

Figure 5. Changes in the color code for the French repairability[5] and durability[57] index



Overrepresentation of one color relative to the others risks limiting consumers' ability to discern products that are more repairable or durable[45]. The French repairability index's approach to smartphones is a good illustration of this. These devices, despite being difficult to repair, were awarded scores of over 6 in the vast majority of cases. Two experts representing the government and the NGO community explained that attaching the green color code to smartphones gave the impression that all smartphones were easy to repair, which did not encourage consumers to consider this criterion when making a purchasing decision.

3.2.5 Implementation

AITPD implementation includes control and update processes and is accompanied by information, awareness and public education measures to ensure its success.

3.2.5.1 Control process: reliability and method quality

Implementation of a control process to gain consumer trust and ensure the credibility of an AITPD was identified as a linchpin in the literature[31 et 33] and by three of the interviewees representing a business and NGOs. Trust in an AITPD is all the higher when independent control organizations are involved in this process[31 and 44]. This was the consensus opinion of all the experts interviewed.

According to the type of AITPD considered, control can come into play at two levels:

1 **At the tool level:** for example, ISO-type labels are the subject of independent, systematic control by a third-party body, generally taking the form of tests and documentary audits and occasionally site visits as well[61 and 62]. This is especially important in the case of self-reporting AITPDs: the information is directly reported by the manufacturers, and it must be monitored for veracity.

2 **At the display level:** control exercised at the display level applies to mandatory AITPDs. The basic idea is to verify that the tool is indeed properly displayed on all the products it covers, and that there is access to additional information provided for under the law (e.g. criteria details, scores for criteria or sub-criteria, etc.).

Control issue: the case of the French repairability index

According to a former government member who helped develop the index, the choice to self-report was made by the French authorities to help simplify and speed up the AITPD rollout.

It was first and foremost consumer associations who addressed this issue and conducted the first analyses[6 and 59] on the integrity of the scores and the display of the repairability index. Scores were judged to be incorrect and inflated when these associations recalculated a number of indexes[6]. A lack of discrimination in the scores was also observed, since they were concentrated around certain values and were never low. Just recently, two reports revealed numerous display shortcomings. In fact, one study by *UFC-Que Choisir*[59] on the 10 most-sold products at nine different retailers revealed that the repairability index was not displayed in 58% of cases. A second report by the *Direction générale de la consommation, de la concurrence et de la répression des fraudes* (DGCCRF)[64] indicated that for 73% of the 523 controlled establishments, the parameters for calculating the index were not made available.

The report by the DGCCRF[64] also showed that score non-compliance was seen in only 4% of cases for 111 audited models at the suppliers. The DGCCRF studied score compliance by asking manufacturers to provide it with supporting evidence for how they calculated the index, but it did not request that the displayed score be modified.

Studies[6 and 59] indicate the need for strict, systematic government controls. This need was echoed by six of the experts interviewed, representing NGOs and businesses, who pointed out that the manufacturers themselves favour such controls, since the index is a vector for competition.

Beyond calling for a more systematic control process, the experts interviewed stressed the need to put in place deterrent penalties to ensure that the requirements are met.

One interviewee representing a business stated that the control process could be based on audits, and another representing an NGO proposed basing this process on laboratory tests. While such processes are expensive, the mechanisms implemented as part of voluntary AITPDs could be inspiring.

In fact, a number of voluntary AITPDs, such as *Blue Angel*[65], include in the certification price a share of the control costs, sometimes based on the businesses' sales figure or size. This type of mechanism could be adapted and transposed by governments in the case of mandatory AITPDs. The definition of control process upstream of AITPD development could include such mechanisms, which would help enhance its credibility.

3.2.5.2 AITPD upgradeability

As pointed out by an expert from an environmental organization, constantly evolving marketplaces and technologies make it necessary to update AITPDs so they can remain relevant.

Most of the AITPDs analyzed[7, 55, 66 and 67] provide for systematic review of the criteria, and even other aspects of the methodology, at varying intervals – generally from three to six years. For example, Fnac-Darty reviewed its methodology a few years after its implementation to include replacement parts price, which initially had been absent[68].

At this time France is not expected to embark upon a systematic review of the principles underlying the mandatory index, the repairability index or the durability index[5 and 57].

Two other aspects of AITPD upgradeability were identified in the literature: **display methodology** and **score calculation**.

With regard to display, the EU plans to review the information displayed on the label, the methods selected for reliability tests and the repairability index calculations every four years, with a re-examination scheduled for Septermber 2027 at the latest[55].

The two examples below illustrate the updates that can be carried out for the scoring:

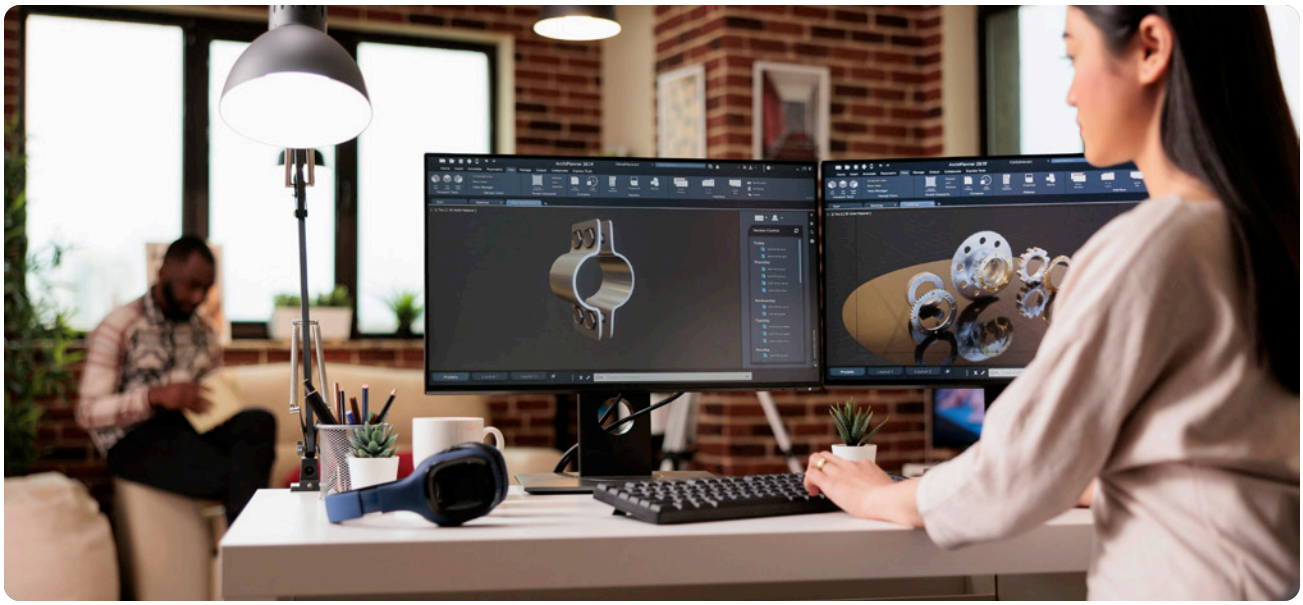
- → Belong[35] allows products covered by its index review their score every year.
- → For the repairability index and the durability index, a score update is possible if the manufacturers improve one or more of their responses to a criterion[69 (v)] (e.g. addition of a usage meter for washing machines lets the manufacturer obtain a better score).

Allowing changes to product scores, be it on a systematic or regular basis, as opposed to just one score at the time the product enters the market, seems to be the consensus position of the experts consulted.

Providing for the review of an AITPD prior to implementation allows businesses to anticipate upcoming changes and to more easily adapt their practices, particularly when it comes to design and eco-design.

(v) As for the durability index, if the score is updated, it must be communicated to the authorities for publication on the platform containing the indexes within a month at most.

Lastly, AITPD upgradeability can contribute to their harmonization, and open the door to potential adjustments in line with regulatory changes in neighbouring countries or in countries that are major trading partners.



3.2.5.3 Information, awareness and stakeholder education

An AITPD communication strategy is needed to inform stakeholders about the tool's existence and operation and to encourage buy-in. Consumers must not only know about the AITPD, they must also be able to read about it and understand it[33]. That is what France did when it carried out communication campaigns about the repairability index. These were initially targeted at distributers and manufacturers, and then the general public[7].

A study carried out by HOP[6] that included interviews with 27 consumers as well as a survey of 1,206 people showed that a few months after its introduction, the repairability index was well understood by only 15% of the respondents, with 51% having a decent understanding. This shows the need to invest in communication around the AITPD over time.

In implementing its durability index, France provided for the rollout of a publicly accessible online platform aimed at cataloguing the indexes for all the various products. On this platform, manufacturers will be required to post the scores assigned to their products as well as a detailed breakdown of how the scores were calculated[69]. This measure was in place for the repairability index, but was not mandatory at the time[70]. Gathering together the indexes for all the products in a given category, without exception, will allow consumers to compare all the information in one place.

Upcoming eco-modulation in connection with repairability performance

A product price eco-modulation based on the reparability index has also been announced, according to interviewees representing the government, a business and an NGO. In the government decree initially studied, it was planned that this eco-modulation would grant a bonus to products with a high reparability index, (above 8.2), in the form of a reduction on the sale price of the new product(vi). On the other hand, less repairable products (with a repairability index of less than 6.9) would be penalized by a price increase (vii) [71].

However, an expert recently mentioned that this measure is now under discussion between the eco-organizations managing the extended producer responsibility systems (EPR) in question and the French Ministry of Ecological Transition. The draft decree initially submitted is therefore no longer current, and the modalities of eco-modulation were not known at the time this report was written.

3.3 EXPECTED AND OBSERVED EFFECTS OF AITPDS

Studies on the effects of AITPDs are few and far between. Most are basically prospective. The correlation between AITPDs and their positive impacts is difficult to establish, not just in terms of consumer behaviors but also from the standpoint of business practices and the environment[39]. This is even more applicable when it comes to voluntary methods or initiator methods. Furthermore, the French repairability index has relatively little experience to draw on, having been implemented in 2021.

3.3.1 Consumer behaviour

As for label-type AITPDs, the literature indicates that they seem to have a limited impact on purchasing behavior[72]. One of the reasons cited is that voluntary standards and labels require major investments, since the criteria to meet to obtain the label or certification are very demanding. Accordingly, the number of products certified tends to be limited and the market penetration of this type of AITPD is more limited[72].

Studies presenting **simulated durability displays**, be it in the form of scores or numbers of years, seem to show fairly positive effects on consumer behavior[31].

(vi) 40 Euros (€) less for mobile phones, laptops, televisions, dishwashers and washing machines, and 20 € less for vacuum cleaners, power washers and lawnmowers.

(vii) 20 € more for mobile phones, laptops, televisions, dishwashers and washing machines, and 10 € more for vacuum cleaners, power washers and lawnmowers.

An experimental study by the European Economic and Social Committee[31] involving simulated durability labels shown to 2,917 people in three countries and a region of Europe revealed that lifespan labelling has an influence on purchasing decisions in favour of products with longer lifespans. On average, dummy sales of products with a label showing a longer lifespan than competing products increased by 13.8%. In a 2022 survey[9] of 15,800 people in 17 European countries, **70% of the respondents were willing to pay more for a product with a higher repairability index or durability index**.

The French repairability index having been in place since 2021, a few studies zeroed in on the effects of this AITPD. Three different surveys[7, 73 and 74] were carried out among groups numbering between 1,011 and 1,206 people in France in 2021 and 2022. These showed that people became familiar with the repairability index in no time at all. Most of the respondents said they knew about it, and this was only a few months after it had been implemented. Two of these surveys also highlighted the following:

- 76%[73] and 90%[74] of the respondents found the repairability index useful for choosing more durable products.
- 88%[73] and 89%[74] of the respondents said the repairability index would lead them to choose the product with the best repairability index.
- 82%[73] and 83%[74] of the respondents might purchase a household appliance or electronic device with a brand name they would not have initially considered if this product displayed a better repairability index in the category in question.
- 79 to 80% of the respondents[73 and 74] would be willing to abandon their preferred brand if other brands had a better repairability index.

A 2023 study by the *Direction Interministérielle de la Transformation Publique*[34] on the sales of two major distributers of four product categories covered by the repairability index (totalling 4,200 products) found that online sales of more-repairable products had risen since the index had come into being, especially in the case of televisions. However, this study showed that the rise in repairable product sales, both online and in-store, might not be directly and/or only attributable to the repairability index, but also to the support measures surrounding this index (e.g. awareness campaigns and a repair fund). These may have helped drive up consumer interest in more-repairable products. **This study also shows that the proportion of products sold that are more repairable has risen compared to the proportion of less repairable products, and that the average repairability index for the products sold is increasing over time.**

3.3.2 Effects on business practices

Due to the private nature of the practices engaged in by the manufacturers of the products in question, it is particularly difficult to measure the effects of AITPDs on their manufacturing processes.

Certain authors[39] have raised doubts about labels' effectiveness in encouraging businesses to change their practices. In some cases, it seems that labels are being used to gain a competitive advantage, without generating genuine benefits for the environment.

The **iFixit repairability score** seems to have influenced certain manufacturers. According to an expert representing manufacturers, the iFixit score had a visible influence on business practices at Microsoft and Apple. After an initial score of 0/10 for a computer, Microsoft worked on improving their score. As for Apple, they developed an annual report on environmental sustainability. There was no such report before the advent of the iFixit score, although other factors could be responsible.

The aforementioned 2023 study by the *Direction Interministérielle de la Transformation Publique*[34] on the sales of 4,200 products covered by the repairability index shows that these products are becoming increasingly repairable. According to the study, this situation can be explained by the simple fact that the products manufactured are more repairable and/or distributers are selecting products that are more repairable, but also by a greater availability of replacement parts and the increasing amount of information made available to consumers (e.g. better access to repair manuals). According to the distributers interviewed as part of the study, there seems to be a trend toward the manufacture of more-repairable products, in particular because this could constitute a competitive edge.

This trend was confirmed by the interviews conducted with manufacturers and repair professionals. For example, one expert from the business community mentioned that the French repairability index has given brands a way to set themselves apart from their competitors. Thus, manufacturers try to score points on the indexes in order to gain a competitive advantage. She also spoke about eco-design practices used by manufacturers to score more points on the **durability index**, even before its unveiling in France in 2025:

More and more manufacturers are adding usage meters to their appliances and making them accessible to consumers.

In certain dishwashers, the heating element of the drainage pump and the pump itself have been detached.

4. Interviews with consumers

This section summarizes the results of interviews with 25 consumers across Canada, from January to April 2024. The concept of durability and its importance in the purchasing process for an appliance or electronic device in relation to other criteria were taken up first. Next, the potential influence of a durability index on the purchasing decision was explored, as well as any questions and doubts.

4.1 UNDERSTANDING DURABILITY AND ITS IMPORTANCE

The consumers interviewed understood product durability to be mainly about lifespan and quality of manufacture. Other factors were mentioned as well, such as repairability, energy/water savings and ease of maintenance, but were seen as less important.

To analyze which criteria are taken into account when buying an appliance or device and where durability fits into this, the interviewees were asked to recall a previous such purchase or to consider a future one. The main purchase criteria they cited were price, energy efficiency and response to specific needs.

Durability as a purchasing criterion

All of the interviewees showed an interest in durability except for one, who lost interest in this criterion when it came to purchasing a computer. Durability was seen in a positive light for its practical, financial and environmental benefits, and was seen as more important for household appliances than for electronic devices.

Consideration of durability is modulated by certain factors, including product price, presence of a warranty, personal repair know-how or product type. For example, **the higher the purchase price of an appliance, the more its durability matters.**

In remote regions durability seems more important still, because if the product breaks consumers have little or no access to repair services. The question of repair service accessibility had already come up in a previous study by Équiterre[75] regarding certain isolated Canadian territories, such as Indigenous communities and northern villages.

4.2 POTENTIAL INFLUENCE OF A DURABILITY INDEX

To explore the potential influence of a durability index on the decision to purchase an appliance or electronic device, the participants took part in a simulation exercise. They were presented with four models of laptops and four washing machine models to see if there was any difference in the purchasing process between an electronic device and a household appliance. They were shown a realistic looking dummy label for each of the models, containing information on the brand, price, specific product features and durability index.

Figure 6 shows one of the four labels presented to the participants for each of the two appliances/devices.

Figure 6. Dummy labels for a laptop and a washing machine displayed to the participants

For most of the participants (21 out of 25), the durability index was noticed during the simulation. It was widely understood at first glance, even by those who did not notice it at first.

In the case of the laptop, brand was the main criterion for most of the participants (18 out of 25), but the durability index came in second (4 people). This index was also cited as a secondary criterion by five participants, right after price.

In the case of the washing machine, brand, price and response to specific needs were the three leading criteria. The durability index was cited as a leading or secondary criterion by nine of the participants.

In general, the durability index was often linked to price in order to analyze the price-quality ratio. The value of the index was that it served as a "quality" yardstick. This echoes consumers' understanding of durability cited earlier.

For some of the participants, the index was one source of information among others. It was a starting point for their decision making or a way of ruling out the worst appliances or devices, after which other factors came into play (brand, price, past experience, warranty, specific needs, other consumers' opinions).

Brand was instinctively cited during simulations in support of purchasing decisions, especially in the case of a computer. But it was not that important for a past purchase or a hypothetical purchase, which is also consistent with the results of a 2024 Canadian survey[10] which placed this criterion in third place for household appliances and fourth place for a computer.

The brand importance observed for computers during the simulation can be attributed to consumers' attachment to the operating system, because one model from Apple, the only manufacturer offering the MacOS system, was among the choices. **A real divide was observed between fans of MacOS and Windows. Thus, the influence of a durability index among Apple users and its operating system could be less pronounced**, because these people do not have access to a large variety of computers offering this operating system, contrary to participants preferring the Windows operating system.

Nevertheless, two simulation participants initially tempted by the Apple computer ended up opting for a computer produced by a different brand after taking into account the durability index. The index changed some participants' brand perception, while brand reputation led others to question the value of the index. And so, while attachment to brand and operating system is a real thing, a degree of openness exists. **All of those who cited brand to justify their choice during the simulation nevertheless indicated that they would consider the index when making a purchase.**

Thus, the durability index was rapidly integrated into the decision making process, but only as one input among others – and not trumping all of the other criteria. Also, when the choice of a model did not seem a sure thing right from the start, or when the index confirmed someone's intuition, it was more readily taken into account.

4.2.1 Doubts and misunderstandings about durability index

Despite the participants' generally positive overall impression of the index, some were mistrustful of the entity responsible for the index and its independence. **Others had concerns about the veracity of the information and the rigor of the calculations behind the index.** The source of this information was questioned as participants sought to identify who had produced the numbers. One of the ideas cited for ensuring trust in the index was to have a governmental (or at least an independent) source responsible for the calculations.

"[...] It's nice to know there's another index to consider, but I need to know what it's based on for me to interpret the information. Because first of all, is it the company that's putting this out? Is it the stores? Or is it an outside organization? That changes everything."

→ Man aged between 30 and 39 from the Yukon

"I'd like it to be supervised by the government or for the information to be available on a government website."

→ Woman aged between 30 and 39 from Newfoundland and Labrador

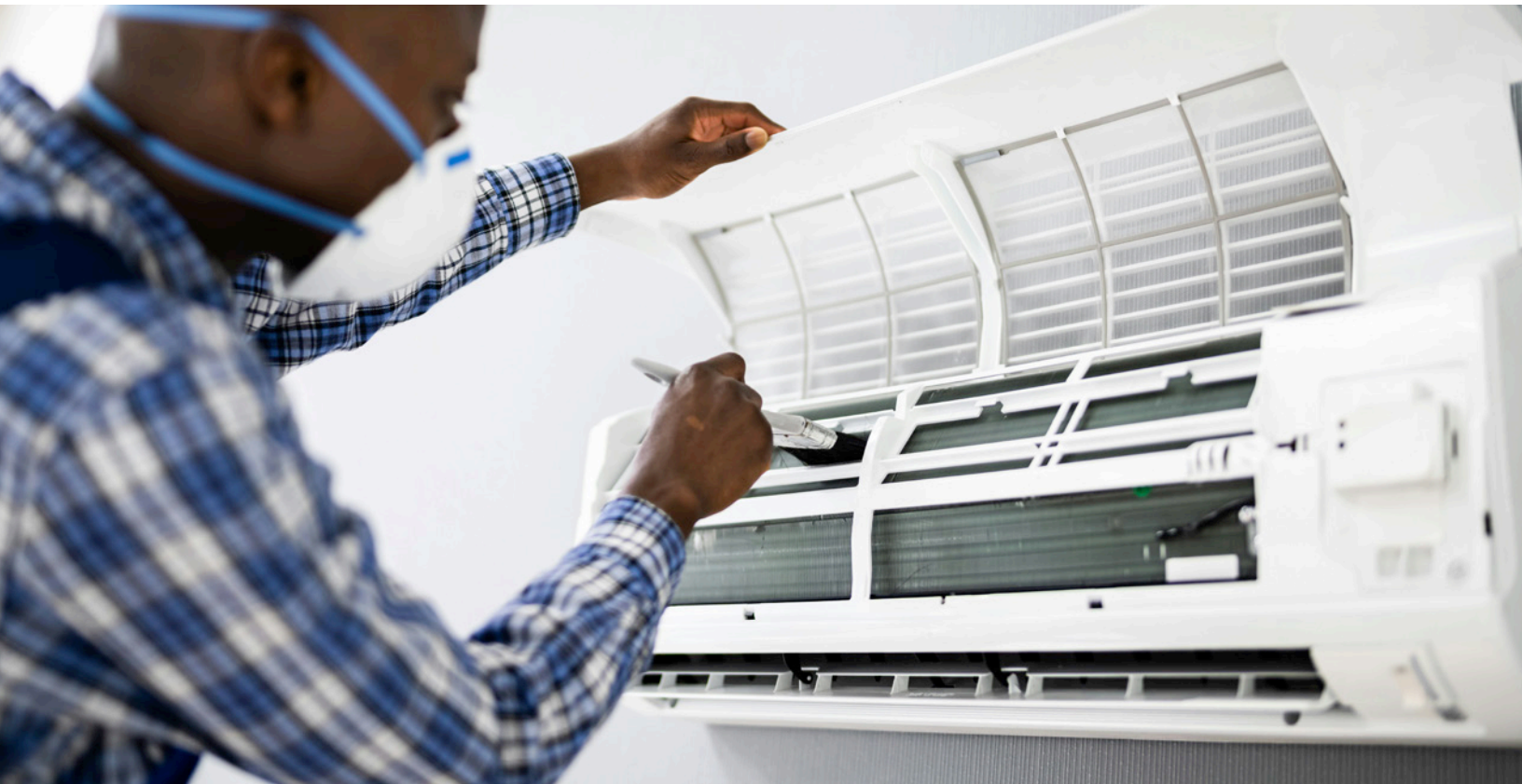
Certain people misunderstood the index. Nine participants wondered what the number meant. Some thought it was the number of years the appliance/device was expected to last, while others thought it meant the possibility of it wearing down over 10 years. One person assumed it was an energy efficiency rating, while a few others thought it was the results of a survey conducted on the item.

As for the look of the index, five people said that the colors were fine. In terms of the logo, which is in the shape of an hourglass, two participants brought it up: one thought it made sense while the other did not find it particularly appropriate.

These views were not shared by all of the participants, but it shows that **the way such an index is displayed is very important and greatly influences consumers' understanding of such a tool**.

4.2.2 Need for additional information on durability index

All of the participants indicated that more information on the durability index would be appreciated. Providing online information on the index's components, calculations and source could meet this need. The idea of a QR code accompanying the index that would link up to this information was very well received by the group as a whole, but some of the participants preferred having the information displayed directly on the product in-store or online. Despite some differing opinions on how to make such information available, one observation stands out: consumers need more details on the index if they are to place their trust in it. During the interviews, this mistrust among some of the participants generally dissipated once explanations on the index had been provided. It should also be pointed out that this scepticism and the misunderstandings were not shared by all of the participants.



5. Recommendations

The premise of this report lies in the recommendation to introduce a durability index in Canada. The research that went into the report shone a light on the international and North American context, the issues involved in developing and implementing an AITPD and the elements that can be leveraged to ensure its success.

Several of the studies and surveys mentioned earlier reveal considerable public interest in product durability, which has a greater influence on purchasing behaviors than does repairability. The data also tend to show that businesses change their practices following implementation of certain AITPDs because good performance gives a business a competitive edge over their counterparts in the sector.

In light of the information analyzed, **it is recommended that a durability index be implemented in accordance with the following.**

Nature and scope of durability index

- **A Canadian application scale,** to ensure business practice consistency between markets in the various provinces and uniform application throughout the country.
- **A mandatory, legislatively regulated index,** applied by product category. Such an approach will boost credibility and trust in the index and allow Canadians to make informed purchasing decisions by comparing the performance of the various products within the same category.
  → Scoring could be done by an independent organization to confer greater credibility on the durability index.
- **Phased in by product category,** with the selection based on the following criteria: environmental footprint associated with the manufacture, frequency of use, replacement rate, frequency of product breakdown, influence of renewal associated with psychological obsolescence and acquisition cost.

Development and rollout

- **A participatory development process** that includes civil society stakeholders (e.g. environmental organizations and consumer rights groups) and repair sector stakeholders.
  - → Considering the resources mobilized by the participating non-profit organizations, whose mission is to defend the interests of the public, they should receive financial compensation.
- **A scoring system based on the optional criteria approach,** which allows better product differentiation thanks to greater variability among the scores.
  - → When a criterion is associated with legal requirements (e.g. number of years replacement parts must remain available), the minimum number of points awarded should correspond to this. Another option would be to leave them out of the calculation chart. Such a practice would allow for improved differentiation among the products and avoid the automatic awarding of points.
- **Criteria determination inspired by existing examples** and adapted to the Canadian context.
  - → Special attention should be paid to the repair cost criterion, which raises certain issues in existing AITPDs.
- **The criteria weighting** could be modelled after that of the French durability index, with consideration given to potential changes made to the calculation chart.
  - → The cost of repair, including parts and labor, should be included to foster improved access to repair.

Displaying the AITPD

- **Awarding an aggregate score with a standard color code** (from red to green) to make the information clearer.
  - → The scoring modalities (e.g. from A to Z or 1 to 10) would be determined based on a survey of the Canadian public aimed at identifying the most effective and easily understood display methods.
  - → In determining the color change thresholds, consideration should be given to lessons learned from the repairability index so that awarding a favourable color (green) would be conditional on the product setting itself significantly apart for its durability and repairability.
- **Access to additional information, to help consumers better understand the scoring system, the criteria and product performance.**
  - → Availability of this information could be made mandatory in a variety of ways (e.g. QR code, score details available in-store at certain locations, etc.).

Implementation and planning

- **Funding and regulation of independent control measures,** from the dual standpoint of product scoring and index display.
- **Periodic review of methodology, from the dual standpoint of criteria and calculation of scores,** to ensure predictability for the various stakeholders and bring the index in line with the North American and international context and legislation. This could be done every four to six years.
- **Development and rollout of a public awareness strategy** dealing with the issues involving a short product lifespan and highlighting the benefits and credibility of the durability index. Such an approach would include such tools as:
  - → A platform identifying all the scores awarded to the products covered by the index, modelled after the French platform for the repairability index.
  - → Public awareness campaigns.

While introducing a durability index would be a worthwhile solution to foster the development of more durable and repairable products, **a labelling system must be combined with other measures in order to be effective.**

In fact, to bring about real change in the behaviors of Canadian businesses and citizens, an AITPD must be accompanied by a series of broader, complementary measures to address various obstacles to product repairability and durability. In this regard, **ecofiscality measures** are essential to incentivize repair, which remains marginal in Canada, and to bring about changes in behavior relating to purchasing practices.

References

1. Côté, Amélie, and Julie-Christine Denoncourt. “Working Towards Repairable Appliances and Electronics in Canada.” Équiterre, October 18, 2022. https://cms.equiterre.org/uploads/EQT_rapport_reparation_ENnov20233-compressed_2023-11-09-163335_nouc.pdf
2. Cajolet-Laganière, Hélène, Pierre Martel, Chantal-Édith Masson, Louis Mercier, Jean-Claude Boulanger, and Michel Théoret. “Label.” In Usito, 2024. https://usito.usherbrooke.ca/d%C3%A9finitions/label
3. Office québécois de la langue française [OQLF]. “réparabilité,” 2023. https://vitrinelinguistique.oqlf.gouv.qc.ca/fiche-gdt/fiche/26571353/reparabilite
4. Ministère de l’Économie, des Finances et de la Souveraineté industrielle numérique. “Tout savoir sur l’indice de réparabilité.” Accessed July 16, 2024. https://www.economie.gouv.fr/particuliers/tout-savoir-indice-reparabilite
5. Ministère de la Transition écologique et de la Cohésion des territoires. “Indice de réparabilité,” December 7, 2023. https://www.ecologie.gouv.fr/indice-reparabilite
6. Halte à l’obsolescence programmée [HOP]. “The French Repairability Index: First Assessment – One Year after Its Implementation,” 2022. https://www.halteobsolescence.org/wp-content/uploads/2022/02/Rapport-indice-de-reparabilite.pdf
7. ADEME, B.; JOVER In Extenso Innovation Croissance (TINETTI M.; DEVAUZE, C.; IGHILAHRIZ, M.), and A.) Fraunhofer IZM (BERWALD). “Preparatory study for the introduction of a durability index” 2021. https://librairie.ademe.fr/consommer-autrement/4853-preparatory-study-for-the-introduction-of-a-durability-index.html
8. Afnor EDITIONS. « NF EN 45552 », mars 2020. https://www.boutique.afnor.org/en-gb/standard/nf-en-45552/general-method-for-the-assessment-of-the-durability-of-energyrelated-produc/fa192449/85151
9. Observatoire Cetelem, Luc Charbonnier, and C-ways. “Économie circulaire : place au consommateur entrepreneur,” 2022. https://observatoirecetelem.com/lobservatoire-cetelem-de-la-consommation/economie-circulaire-place-au-consommateur-entrepreneur
10. Équiterre and RECYC-QUÉBEC. “La réparabilité et la durabilité comme critères influençant les décisions d’achat au Canada et au Québec,” 2024. https://cms.equiterre.org/uploads/Fichiers/synthese_sondage_durabilite_lettre_final.pdf
11. National Assembly of Quebec. An Act to protect consumers from planned obsolescence and to promote the durability, repairability and maintenance of goods, § 2023, chap. 21 (2023). https://www.publicationsduquebec.gouv.qc.ca/fileadmin/Fichiers_client/lois_et_reglements/LoisAnnuelles/en/2023/2023C21A.PDF
12. Legislative Assembly of Ontario. “Bill 187, Right to Repair Consumer Electronic Products, Household Appliances, Wheelchairs, Motor Vehicles and Farming Heavy Equipment Act, 2024,” 2024. https://www.ola.org/en/legislative-business/bills/parliament-43/session-1/bill-187
13. Legislative Assembly of Prince Edward Island. “Bill 110, An Act to Amend the Farm Machinery Dealers and Vendors Act.” Codify Laws, November 29, 2023. https://codifylaws.com/canadian-bill-and-regulation-details/bill-110-an-act-to-amend-the-farm-machinery-dealers-and-vendors-act-pei-bill

14. Legislative Assembly of Manitoba. “The Consumer Protection Amendment and Farm Machinery and Equipment Amendment Act (Right to Repair — Vehicles and Other Equipment),” 2021. https://web2.gov.mb.ca/bills/42-3/b241e.php
15. Legislative Assembly of Manitoba. “The Consumer Protection Amendment Act (Right to Repair),” 2021. https://web2.gov.mb.ca/bills/42-3/b234e.php
16. Union of BC Municipalities. “Right to Repair Legislation,” 2021. https://www.ubcm.ca/convention-resolutions/resolutions/resolutions-database/right-repair-legislation
17. Government of Quebec. “Adopter une feuille de route gouvernementale pour accélérer la transition vers un modèle économique circulaire au Québec.” Government of Quebec, 2024. https://www.quebec.ca/gouvernement/politiques-orientations/developpement-durable/strategie-gouvernementale/feuille-route-gouvernementale-economie-circulaire
18. PIRG. “Right To Repair.” PIRG, 2024. https://pirg.org/campaigns/right-to-repair/
19. The New York State Senate. “General Business Law, Chapter 20, Article 26 Miscellaneous, Section 399-NN Sale of Digital Electronic Equipment; Diagnostic and Repair Information,” December 29, 2023. https://www.nysenate.gov/legislation/laws/GBS/399-NN
20. Chamberlain, Elizabeth. “Breaking: Minnesota’s New Right to Repair Law Will Give the Whole World Repair Manuals.” iFixit, July 16, 2024. https://fr.ifixit.com/News/75965/minnesotas-new-right-to-repair-law-will-give-the-whole-world-repair-manuals
21. California Legislative Information. “SB-244 Right to Repair Act. (2023-2024),” December 10, 2023. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202320240SB244
22. Oregon Legislative Information. “SB1596 Relating to a Right to Repair Consumer Electronic Equipment,” 2024. https://olis.oregonlegislature.gov/liz/2024R1/Measures/Overview/SB1596
23. The New York State Senate. “NY State Assembly Bill 2023-A8434,” 2023. https://www.nysenate.gov/legislation/bills/2023/A8434
24. Parliament of Canada. “C-244 An Act to Amend the Copyright Act (Diagnosis, Maintenance and Repair,” 2024. https://www.parl.ca/legisinfo/en/bill/44-1/c-244
25. Parliament of Canada. “C-294 An Act to Amend the Copyright Act (Interoperability),” 2024. https://www.parl.ca/legisinfo/en/bill/44-1/c-294
26. Competition Bureau Canada. “Significant changes to strengthen the Competition Act become law.” Communiqués de presse, June 25, 2024. https://www.canada.ca/en/competition-bureau/news/2024/06/significant-changes-to-strengthen-the-competition-act-become-law.html
27. Department of Finance Canada. “Budget 2024,” April 16, 2024. https://budget.canada.ca/2024/report-rapport/budget-2024.pdf
28. Government of Canada. “Right to Repair Consultation Document.” Innovation, Sciences et Développement économique Canada, June 28, 2024. https://ised-isde.canada.ca/site/ised/en/right-repair-consultation-document
29. Québec circulaire. “Stratégies de circularité.” quebeccirculaire.org, 2023. https://www.quebeccirculaire.org/static/strategies-de-circularite.html
30. European Union, Health Consumers Agriculture and Food Executive Agency Consumers, A Cerulli-Harms, L Porsch, J Suter, A Rodriguez Diaz, T Peroz, et al. “Behavioural Study on Consumers’ Engagement in the Circular Economy,” 2018. https://op.europa.eu/en/publication-detail/-/publication/0779f275-f9d6-11e8-a96d-01aa75ed71a1

31. Dupré, Mickaël, Mathieu Jahnich, Valeria Ramirez, Gaëlle Boulbry, and Émilie Ferreira. "The potential effects on consumers of the real lifetime of products display." Agence SIRCOME, Université de Bretagne sud, Université de Bohème sud, Comité économique et social européen (Union européenne), 2016. https://www.eesc.europa.eu/en/our-work/publications-other-work/publications/potential-effects-consumers-real-lifetime-products-display
32. Calgaro, Jean-Armand. "Concepts de robustesse et de risque dans les constructions." In Techniques de l'ingénieur, August 10, 2021. https://www.techniques-ingenieur.fr/base-documentaire/construction-et-travaux-publics-th3/methodes-de-calcul-et-conception-42825210/concepts-de-robustesse-et-de-risque-dans-les-constructions-c6007/generalites-c6007niv10001.html
33. Milios, Leonidas, and Carl Dalhammar. "Consumer Perceptions of Product Lifetimes and Labelling: Implications for Introducing a Durability Label." Journal of Circular Economy, March 23, 2023, 1–15. https://doi.org/10.55845/AHFR5526
34. Direction interministérielle de la transformation publique. "Évaluation d'impact de l'indice de Réparabilité" October 2023. https://www.ecologie.gouv.fr/sites/default/files/Rapport%20sur%20l%27indice%20de%20re%CC%81parabilite%CC%81.pdf
35. Belong. "Notre indice de durabilité," 2023. https://www.belong.fr/content/24-indice-de-durabilite
36. Fnac-Darty. "6ème édition du baromètre du SAV Fnac-Darty." Baromètre SAV Fnac-Darty, 2023. https://leclaireur.fnac.com/barometre-sav/infographie2
37. SPF Chancellerie du premier ministre. "La Belgique devient le deuxième pays européen à instaurer un indice de réparabilité [Communiqué de Presse]," June 2, 2023. https://khattabi.belgium.be/fr/cp-repairindex
38. Écoconso. "Un indice de durabilité Belge en 2025," October 22, 2023. https://www.ecoconso.be/fr/content/un-indice-de-reparabilite-belge-en-2025
39. Meis-Harris, Julia, Celine Klemm, Stefan Kaufman, Jim Curtis, Kim Borg, and Peter Bragge. "What Is the Role of Eco-Labels for a Circular Economy? A Rapid Review of the Literature." Journal of Cleaner Production 306 (July 15, 2021): 127134. https://doi.org/10.1016/j.jclepro.2021.127134
40. Douriez, Benjamin. "Sous pression européenne, la France renonce à son indice de durabilité des smartphones." Reporterre, February 17, 2024. https://reporterre.net/Sous-pression-europeenne-la-France-renonce-a-son-indice-de-durabilite-des-smartphones
41. Halte à l'obsolescence programmée [HOP]. "L'indice de durabilité smartphone ne verra pas le jour," February 16, 2024. https://www.halteobsolescence.org/lindice-durabilite-smartphone/
42. Minkov, Nikolay, Annekatrin Lehmann, Lisa Winter, and Matthias Finkbeiner. "Characterization of Environmental Labels beyond the Criteria of ISO 14020 Series." The International Journal of Life Cycle Assessment 25, no. 5 (May 1, 2020): 840–55. https://doi.org/10.1007/s11367-019-01596-9
43. International Organization for Standardization. "ISO 14020:2022 - Environmental Statements and Programmes for Products — Principles and General Requirements," 2022. https://www.iso.org/standard/79479.html
44. Horne, Ralph E. "Limits to Labels: The Role of Eco-Labels in the Assessment of Product Sustainability and Routes to Sustainable Consumption." International Journal of Consumer Studies 33, no. 2 (March 1, 2009): 175–82. https://doi.org/10.1111/j.1470-6431.2009.00752.x
45. ADEME, Anne-Charlotte Bonjean, and Odoxa. "Retour d'expérience de la mise en œuvre de l'indice de réparabilité," June 2022. https://librairie.ademe.fr/consommer-autrement/5654-retour-d-experience-de-la-mise-en-oeuvre-de-l-indice-de-reparabilite.html

46. Spengler, Laura, Dirk Jepsen, Till Zimmermann, and Paula Wichmann. “Product Sustainability Criteria in Ecolabels: A Complete Analysis of the Blue Angel with Focus on Longevity and Social Criteria.” The International Journal of Life Cycle Assessment 25, no. 5 (May 1, 2020): 936–46. https://doi.org/10.1007/s11367-019-01642-6

47. Jensen, Peter Byrial, Linda Nhu Laursen, and Louise Møller Haase. “Barriers to Product Longevity: A Review of Business, Product Development and User Perspectives.” Journal of Cleaner Production 313 (September 1, 2021): 127951. https://doi.org/10.1016/j.jclepro.2021.127951

48. Fachbach, Ines, Gernot Lechner, and Marc Reimann. “Drivers of the Consumers’ Intention to Use Repair Services, Repair Networks and to Self-Repair.” Journal of Cleaner Production 346 (April 20, 2022). https://doi.org/10.1016/j.jclepro.2022.130969

49. Joint Research Centre, J Sanfelix, M Cordella, and F Alfieri. “Analysis and Development of a Scoring System for Repair and Upgrade of Products – Final Report.” Publications Office, 2019. https://op.europa.eu/en/publication-detail/-/publication/8acbc9b6-5f59-11e9-9c52-01aa75ed71a1/language-en

50. ADEME, Benoît Tinetti, Beatriz Berthoux, Arthur Robin, Nathan Setayesh, and Mathieu Hestin. “Fonds réparation de la filière équipements électriques et électroniques,” 2021. https://librairie.ademe.fr/dechets-economie-circulaire/4744-fonds-reparation-de-la-filiere-equipements-electriques-et-electroniques.html

51. Côté, Amélie, and Julie-Christine Denoncourt. “Pour un droit à la réparation robuste et accessible partout au Québec.” Équiterre, September 12, 2023. https://www.equiterre.org/fr/ressources/pour-un-droit-a-la-reparation-robuste-et-accessible-partout-au-quebec

52. Le Club de la durabilité. “Rendre la réparation accessible.” Le Club de la durablité, 2023. https://www.clubdeladurabilite.fr/wp-content/uploads/2023/09/Rendre-la-reparation-accessible.pdf

53. Ministère de l'Économie, des Finances et de la Souveraineté industrielle et numérique et le ministère de la Transition écologique et de la Cohésion des territoires. Arrêté du 5 avril 2024 relatif aux modalités d’affichage, à la signalétique et aux paramètres généraux de calcul de l’indice de durabilité des équipements électriques et électroniques (2024). https://www.legifrance.gouv.fr/loda/id/JORFTEXT000049376179/

54. Ministère de la Transition écologique et de la Cohésion des territoires. Arrêté du 5 avril 2024 relatif aux critères, aux sous critères et au système de notation pour le calcul et l’affichage de l’indice de durabilité des téléviseurs (2024). https://www.legifrance.gouv.fr/loda/id/JORFTEXT000049376202/

55. European Union. Règlement délégué (UE) 2023/1669 de la Commission complétant le règlement (UE) 2017/1369 du Parlement européen et du Conseil en ce qui concerne l’étiquetage énergétique des smartphones et des tablettes (2023). https://eur-lex.europa.eu/legal-content/FR/TXT/?uri=CELEX%3A32023R1669

56. Suovanen, Jeff, and Claire Miesch. “Comment iFixit calcule ses Indices de réparabilité.” iFixit, October 25, 2023. https://fr.ifixit.com/News/84947/comment-ifixit-calcule-ses-indices-de-reparabilite

57. Ministère de la Transition écologique et de la Cohésion des territoires. “Indice de durabilité,” April 10, 2024. https://www.ecologie.gouv.fr/indice-durabilite

58. Bernard, Yohan. “Les conditions de l’efficacité des dispositifs d’étiquetage environnemental des produits de consommation : une synthèse de la littérature.” Annecy, 2014. https://www.researchgate.net/publication/312475324_Les_conditions_de_l'efficacite_des_dispositifs_d'etiquetage_environnemental_des_produits_de_consommation_une_synthese_de_la_litterature

59. UFC-Que Choisir. “Indice de réparabilité : une indispensable réforme pour le crédibiliser.” UFC-Que Choisir, December 2021. https://www.quechoisir.org/action-ufc-que-choisir-indice-de-reparabilite-le-consommateur-bien-mal-eclaire-n96968/?dl=97780%C3%A0

60. Neves, Catarina, and Tiago Oliveira. “Drivers of Consumers’ Change to an Energy-Efficient Heating Appliance (EEHA) in Households: Evidence from Five European Countries.” Applied Energy 298 (September 15, 2021): 117165. https://doi.org/10.1016/j.apenergy.2021.117165
61. Ethikis ad civis. “Comment obtenir le label LONGTIME,” 2024. https://longtimelabel.com/comment-obtenir-le-label/
62. Nordic Ecolabelling. “Fees,” 2024. https://www.nordic-swan-ecolabel.org/how-to-apply/costs/
63. Halte à l’obsolescence programmée [HOP]. “The French Repairability Index: First Assessment – One Year after Its Implementation,” 2022. https://www.halteobsolescence.org/wp-content/uploads/2022/02/Rapport-indice-de-reparabilite.pdf
64. Direction générale de la consommation, de la concurrence et de la répression des fraudes [DGCCRF]. “Bilan de TN - Indice de réparabilité des équipements électriques et électroniques,” 2024.
65. Blue Angel. “Costs for Applying for the Label,” 2024. https://www.blauer-engel.de/en/certification/costs-applying-label
66. Nordic Ecolabelling. “Criteria Development Process,” 2024. https://www.nordic-swan-ecolabel.org/nordic-ecolabelling/criteria-development/
67. Organisation internationale de normalisation [ISO]. “Guidance on the Systematic Review Process in ISO,” 2019. https://www.iso.org/fr/publication/PUB100413.html
68. Fnac-Darty. “Baromètre du SAV Fnac-Darty.” Baromètre SAV Fnac-Darty, 2023. https://leclaireur.fnac.com/barometre-sav
69. Ministère de l'Économie, des Finances et de la Souveraineté industrielle et numérique et le ministère de la Transition écologique et de la Cohésion des territoires. Décret n°2024-316 du 5 avril 2024 relatif à l’indice de durabilité des équipements électriques et électroniques (2024). https://www.legifrance.gouv.fr/loda/id/JORFTEXT000049375942/
70. Spareka. “Plateforme d’information sur l’indice de réparabilité,” 2024. https://www.indicereparabilite.fr/
71. Ministère de la Transition écologique et de la Cohésion des territoires, Ministère de la Transition énergétique, and Secrétariat d’État chargé de la Mer. Projet d’arrêté fixant les modulations applicables aux contributions financières versées par les producteurs d’équipements électriques et électroniques (2023). https://www.consultations-publiques.developpement-durable.gouv.fr/projet-d-arrete-fixant-les-modulations-applicables-a2928.html
72. Iraldo, Fabio, Rainer Griesshammer, and Walter Kahlenborn. “The Future of Ecolabels.” The International Journal of Life Cycle Assessment 25, no. 5 (May 1, 2020): 833–39. https://doi.org/10.1007/s11367-020-01741-9
73. Samsung. “Les Français et l’indice de Réparabilité : Un sondage OpinionWay pour Samsung,” May 18, 2021. https://news.samsung.com/fr/sondage-indice-reparabilite
74. Samsung and ADEME. “Samsung Electronics France et l’ADEME dévoilent les résultats du 2e baromètre sur « Les Français et l’indice de réparabilité » étude menée par OpinionWay,” August 24, 2021. https://presse.ademe.fr/2021/08/samsung-electronics-france-et-lADEME-devoilent-les-resultats-du-2e-barometre-sur-les-francais-et-lindice-de-reparabilite-etude-menee-par-opinionway.html
75. Équiterre. “Annex 3. Summary of meetings with Indigenous peoples in Quebec,” 2022. https://cms.equiterre.org/uploads/Initiatives/150_Pour-des-objets-durables-et-r%C3%A9parables/EQT_rapport_reparation_annexes_EN3.pdf
76. Ministère de la Transition écologique et le ministère de l’Économie, des Finances et de la Relance. Arrêté du 22 avril 2022 relatif aux critères, aux sous-critères et au système de notation pour le calcul et l’affichage de l’indice de réparabilité des lave-vaisselle ménagers (2022). https://www.legifrance.gouv.fr/loda/id/JORFTEXT000045742695/

Annex 1 - Glossary

Assessment and information tools on product durability (AITPD): tools aimed at measuring product durability to encourage manufacturers to turn toward eco-design, and at better informing consumers so they can make informed purchasing decisions.

Durability: capacity of a good to last a long time, to maintain its performance and quality as time goes on. This requires the product to be well made, reliable and repairable.

Eco-design: product design strategy that takes into account potential environmental impacts throughout the product's life cycle and seeks to minimize them.

Home appliances and electronics (HAE): wide range of products equipped with a circuit or electric components, powered by electricity or battery. Examples: washing machine, computer, coffee maker, camera, microwave, etc.

Label: distinctive label appearing on a product to guarantee quality or compliance with manufacturing standards.

Legal warranty: minimum protection under the law that applies automatically upon purchase of a product. It provides for reimbursement or replacement of the item if it is not of satisfactory quality, durable, safe or consistent with the expectations created by the seller's representations. It also protects against hidden defects.

Period of use: length of time during which the product is used in working condition and ready for use.

Reliability: likelihood that a product will function as required in a given set of conditions, for a given length of time, with no breakdowns caused by a technical defect or by natural wear and tear. This is a statistical notion growing out of tests conducted on thousands of products.

Repairability: for a product, the quality of being easily repairable.

Right to repair: right to have one's objects repaired or to repair them oneself, in a timely and affordable fashion. This generally requires regulations stipulating that manufacturers design their products in such a way that they are repairable and ensure access for a time to the manuals, diagrams, parts, software and tools necessary for their repair at a reasonable cost.

Sturdiness: product's resilience to unpredictable or undesirable events without sustaining excessive damage relative to its original state.

Upgradeability: a device's capability to be updated from a software or mechanical standpoint while its performance is maintained or enhanced.

Annex 2 - Methodology

1. Review of the literature and interviews with those involved in AITPD development or implementation

1.1 DETAILS OF METHODOLOGY

A scoping review of the literature was carried out to "examine the scope, variety and nature of the evidence" on product durability and, more specifically, AITPDs, and to "summarize the results of a heterogeneous knowledge set in terms of methods or disciplines" on this subject[1].

- → Inclusion criteria: articles dating as far back as 15 years, focusing on: 1) product durability display tools, 2) regulatory tools designed to foster product durability, 3) consumer behaviors regarding durability, and 4) the effects of AITPDs on corporate practices.
- → Selection of 22 scientific studies and 117 sources from the grey literature (books, reports, standards, media articles, webpages, etc.).

Ten semi-directed interviews were held from February 15 to April 15, 2024:

- → Use of an interview guide reviewed by various research stakeholders.
- → Verbatim transcript and content analysis.

Table 4. Profile of experts interviewed

Category	Number	Details on organization	Interviewee	Experience
Public administration (government)	E1	Independent (former government official), France	Independent expert	39 years
	E7	European Union institution	Policy manager in the field of eco-design and energy labelling	22 years

1 Tricco, Andrea C., Erin Lillie, Wasifa Zarin, Kelly K. O'Brien, Heather Colquhoun, Danielle Levac, David Moher, et al. "PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation." Annals of Internal Medicine 169, no. 7 (October 2, 2018): 467–73. https://doi.org/10.7326/M18-0850

Category	Number	Details on organization	Interviewee	Experience
Non-government organization (environment and consumer law)	E2	Consumers association, France	Advocacy and public affairs manager	5 years
Non-government organization (consumer law)	E3	US association active in the right to repair movement	Executive director	47 years
	E5	European consumers association	Project coordinator, eco-design and responsible consumption	4 years
	E10	Quebec consumers association	Product trial team leader	18 years
Non-government organization (environment)	E4	Canadian organization helping businesses adopt circular processes	Executive director	23 years
Manufacturer and/or repair business	E6	US company in the repair field	Co-founder and CEO	23 years
	E8	*Société Coopérative d'Intérêt Collectif* (SCIC) offering product rentals, France	Co-founder	13 years
	E9	French union of household appliance manufacturers	Director, circular economy and energy	12 years

1.2 LIMITATIONS

→ Given the subject`s topicality in Europe, the review of the literature includes more European than Canadian or North American studies. Economic, cultural, social and regulatory differences could have an impact on some of the analyses.

→ Mandatory AITPDs, particularly the French durability index and the European label, are still relatively new in the international regulatory landscape and remain in a constant state of flux.

→ This analysis contains the latest publicly available information as of May 2024. Some is subject to change, particularly in the case of the French durability index and the European label.

→ A limited number of stakeholders were able to be included in the interviews with experts. It is possible, therefore, that some elements may be less detailed than others, based on the interests and knowledge of the interviewees, who were recruited from among the research team's contacts based on their experience in the subject area and on the desire to represent a diversity of organizations and profiles.

2. Interviews with consumers

1.1 DETAILS ON METHODOLOGY

25 individual semi-directed videoconference interviews were held from January to April 2024.

→ Participants selected in such a way as to encourage as diverse a range of accounts and perspectives as possible. The sample was composed by recruiting, firstly, individuals in Facebook groups of various interests in each of the provinces and territories. Only a few of them were involved in the sale or repair of HAEs or had environmental interests. Next, use was made of the "snowball" technique, which consists of asking the participants recruited to suggest other potential participants to contact. This was combined with a more systematic sampling involving the identification and selection of people with complex trajectories, members of interest groups and essential resource persons. Lastly, the data were diversified by integrating people who are not interested or who may have very diverging ideas and opinions on the subject, until data saturation was achieved.

→ Use of an interview guide revised by various research stakeholders.

- The interview guide takes into account the obstacles and incentives identified in the review of the literature, as well as the themes and subjects for which information was found to be lacking.
- The interviews took place in three stages: identification of purchasing criteria for the hypothetical purchase of a washing machine or computer, simulated to test the purchasing criteria and questions on interest in durability and the durability index.

→ Audio-digital recording of interviews to facilitate note taking, transcription and data analysis.

Table 5. Profile of consumers interviewed

Sociodemographic characteristics	Categories	Distribution (%)
Gender	Women	52
	Men	44
	Non-binary	4
Language of interview	French	52
	English	48
Education	High School	20
	Vocational	4
	College	8
	University (undergraduate)	44
	University (graduate)	24
Identification as minority	Persons not identifying as a minority	80
	Persons identifying as a minority	20
Income	0 $ to $24,999	28
	$25,000 to $49,999	36
	$50,000 to $74,999	24
	$75,000 to $99,999	8
	$100,000 to $124,999	4

Sociodemographic characteristics	Categories	Distribution (%)
Province or territory of residence	Maritimes (Nova Scotia, New Brunswick, Prince Edward Island)	40
	West (Manitoba, Alberta, British Columbia)	12
	Quebec	24
	Newfoundland and Labrador	8
	Territories (Yukon, NWT, Nunavut)	16
Age	20-29	12
	30-39	40
	40-49	24
	50-59	8
	60-69	0
	70-79	8
	80-89	4
	No response	1

2.2 LIMITATIONS

- → Non-probability sample unrepresentative of the population.
- → Potential social desirability bias toward durability on the part of the interviewees from having been informed of the purpose of the study during recruitment.
- → Confusion observed between past or hypothetical purchases and the simulation with the durability index.

Annex 3 - Analyzed AITPDs

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Voluntary	Germany	Blue Angel	Federal ministry of the environment	Public authorities	1978	105 products and 9 services (e.g. home appliances, building and heating products, packaging services, paper, HAE)
Voluntary	Denmark, Finland, Iceland, Norway and Sweden	Nordic Swan Ecolabel	Northern ministers council	Public authorities	1989	Wide variety of products and services (e.g. dry cleaning, renovation)
Voluntary	Global	TCO Certified	TCO Development	Non-government organization	1992	Computer products: screens, computers, tablets, smartphones, projectors, headsets, network equipment, servers and data storage equipment

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Voluntary	EU	European eco-label	EU	Public authorities	1992	Following products: cleaning, surfacing, apparel, gardening, hygiene, cosmetics, animal care, lubricants, paper, HAE, paint, resort (e.g. hotels, campsites)
Voluntary	Global	ISO 14024:2018 Environmental labels and declarations - type I environmental labelling — Principles and procedures	International Standards Organization (ISO)	Standardization organization	1999	Wide variety of product categories
Voluntary	Global	ISO 14021:2016 Environmental labels and declarations — Self-declared environmental claims (Type II environmental labelling)	International Standards Organization (ISO)	Standardization organization	1999	Wide variety of product categories

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Voluntary	Global	EPEAT	Green Electronics Council	Non-government organization	2006	Computer products, imaging equipment, mobile phones, servers, televisions
Voluntary	Austria	ONR 192102:2014-10-01 Label of excellence for durable, repair-friendly designed electrical and electronic appliances	Austrian Standards International	Standardization organization	2006	HAE
Voluntary	EU	Scoring system for durable/repairable products	European Environmental Bureau	Non-government organization	2015	HAE, furniture and textiles
Voluntary	France	Benchmark for product lifespan labelling	*Ministère de l'environnement, de l'énergie et de la mer and Laboratoire national de métrologie et d'essais*	Public authorities	2016	Wide variety of product categories Draft sectoral benchmark on suitcases

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Voluntary	Global	Label Longtime	Ethikis	*Société coopérative de production*	2018	Any product composed of parts and performing a function, except for automobiles (e.g. HAE, recreational and games, home/garden equipment, care and well-being products)
Voluntary	Several European countries	NF EN 45552 standard General method for the assessment of the durability of energy-related products	European Committee for Standardisation (CEN) and European Committee for Electrotechnical Standardization (CENELEC)	Standardization organization	2020	Energy-related products; any good having an impact on energy consumption during its use
Voluntary	Global	ITU-T L.1023 Assessment method for circularity performance scoring	International Telecommunication Union	Public authorities	2020	IT and communication products

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Voluntary	Germany	Quality brand on obsolescence HTV-Life	HTV	Research and testing organization	Unknown	HAE
Internal	Global	Repairability score	iFixit	Repair business	2003	HAE
Internal	France	Durability index	Belong	Private company	2012	Several household appliances
Internal	EU	Durability index for REAPro and Pro-EnDurAncE methods	EU Joint Research Centre	Research and testing organization	2012	Energy-related products; any good having an impact on energy consumption during its use
Internal	Unknown	Repairability indicator	Technische Universiteit (TU Delft)	Research and testing organization	2016	Electronics products
Internal	EU	Durability test for washing machine, EU Joint Research Centre	EU Joint Research Centre	Research and testing organization	2017	Washing machine

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Internal	France	Durable products scoring	*Halte à l'obsolescence programmée* and Comment Réparer.com	Non-government organization	2018	HAE, transport and textile products
Internal	France	Durability score	Fnac-Darty	Private company	2020	HAE
Internal	France	*Le Choix durable*	Fnac-Darty	Private company	2018	HAE, including home appliances (e.g. radiator, electric blanket, sewing machine) and care appliances (e.g. hairdryer and electric toothbrush/shaver)
Internal	France	Durability index	Décathlon	Private company	2019	Textile products and footwear, several HAE
Internal	Quebec	Repairability rating	Protégez-Vous	Non-government organization	2020	Small and large household appliances

Nature	Scope	Name of AITPD	Source	Type of actor	Year created	Products
Mandatory	France	Durability index	Ministère de la Transition écologique et ADEME	Public authorities	2024	Televisions and washing machines
Mandatory	EU	European label, in connection with work on eco-design	European Commission	Public authorities	2023	Smartphones and tablets
Mandatory	Belgium	Repairability index	Ministry of the environment	Public authorities	2023	Washing machines, dishwashers, vacuum cleaners, televisions, laptops

Équiterre

INFORMATION AS KEY FACTOR FOR MARKETING AND CONSUMPTION OF DURABLE AND REPAIRABLE GOODS

OCTOBER 22, 2024

Équiterre's offices are located on Indigenous lands that have not been ceded by treaty, which we now call Montreal and Quebec City, where different Indigenous peoples have interacted with each other. We recognize that Indigenous peoples have been protecting their territories since immemorial times and have been using their traditional knowledge to guard the lands and waters. We are grateful to live on these lands and are committed to continuing our efforts to protect them. As an organization concerned with environmental and social justice, Équiterre respects the important links between the past, the present and the future. We recognize the road ahead in implementing our mission, while building relationships with Indigenous peoples in humility, respect and dialogue.