

Annex 4.

Detailed Analysis of Structural Measures

1. REPAIR SUBSIDIES

Sweden: A tax deduction of 50% of the labour costs is available for HAE repairs, up to a maximum of approximately \$3,200 per person per year (or just over \$6,400 for those over 65).

Austria: The cities of Vienna and Graz reimburse 50% of the cost of HAE repairs, up to a maximum of 100 euros per household per year. Only repairs performed by businesses registered in municipal directories are covered. Four other regions in Austria offer the same subsidy, and since 2022 the subsidy has been available nationwide.

Thuringia State (Germany): The state offers the same subsidy as Austria, but there is no repairer listing linked to it.

France: A national repair fund was created in the fall of 2022. Consumers must use a company registered in the national

"Répar'acteurs" network. For households earning less than 35,000 euros per year, the Metropolitan Area of Toulouse offers a subsidy that covers 30% of the cost of repairing certain HAE and other items, to a maximum of 100 euros per repair. The service must be provided by a company that is registered with the "Répar'acteurs" network.

City of Graz (Austria) and two Belgian states: The city of Graz and two Belgian states, Wallonia and Flanders, offer a subsidy for the establishment of Repair Cafés or DIY repair workshops.

→ Sweden

- The number of businesses operating in areas covered by the subsidy has increased, as has the demand for electronics repair services.
- The number of subsidy applications has risen significantly over the years.
- This has resulted in jobs being created for individuals finding it difficult to enter the labour market.

→ Austria

- The nationwide subsidy covers all HAEs, and the reimbursement process is simple.



- There are a number of regional or municipal subsidies that cover the cost of the estimate if a device is beyond repair.

→ **Graz**

- Increased revenues were recorded by two-thirds of the firms eligible for the subsidy.
- 24% of repairs were attributable to the subsidy. One business operating in and outside the city saw a 33% increase in demand within the municipality and a 7% decrease outside the city.
- The number of subsidy claims has risen significantly over the years.
- Most citizens are aware of the subsidy.

→ **Vienna**

- Over 8,000 items were repaired in less than three months.

→ **Thuringe**


- 19,000 euros were invested in the first two weeks.
- Repairs made in DIY repair workshops are covered.

→ **France**

- The fund covers almost all the repair costs and is funded indirectly by manufacturers through the "polluter pays" principle, making manufacturers who make and sell goods that are difficult to repair pay more.
- In Toulouse, in just two months, the subsidy generated 250,000 euros for the "Répar'acteurs" network, and 75% of the recipients would have thrown their items away without the subsidy.

→ **Graz and some Belgian States**


- The subsidies to DIY repair workshops address the financial needs of organizations that often have problems in securing funding for these activities.


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- More publicity is needed to promote these subsidies.
 - Renewal of most of these subsidies is not assured and depends on political support.
 - Sweden:
 - Few people are taking advantage: in 2017, just under 9% of the population received a subsidy.
 - The costs to the public outweigh the benefits in terms of job creation.
 - Small household appliances are excluded and only labour costs are covered.
 - There has been no increase in the demand for appliance repairs.
 - Wealthier households are using it more and frauds and scams have been observed.
 - In Graz, the subsidy does not apply to every business listed in the municipal directory or to the items under warranty.
 - France:
 - The budget for the fund was cut in half by the government, which could reduce its effectiveness as well as the number of eligible items and the number of companies that are certified. Implementation has also been delayed by several months.
 - Items under warranty are excluded, forcing consumers to have them repaired by the manufacturer, whose work may be more expensive and less satisfactory.
 - Few products are initially covered and not all breakdowns are covered.
 - Financial input from manufacturers could result in an increase in the cost of new products.

2. DIY REPAIR SPACES AND WORKSHOPS

DIY repair spaces and workshops allow people to bring in their non-functioning items and get help from volunteers in repairing them. These include, among others, Repair Cafés found all over the world, including

approximately 50 in Canada, the Insertech, Angus' Réparothons in Quebec, Fixit Clinics in the United States and Restart Parties in the United Kingdom.

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- These workshops are cost-effective for consumers, since the labour is free and the need for replacement parts is infrequent (18% in the case of Restart Parties).
 - Their popularity and their success are growing:
 - The number of Repair Cafés worldwide quadrupled between 2014 and 2022.
 - The number of Repair Cafés more than tripled between 2017 and 2019.
 - The repair rate for these various workshops around the world varies between 50% and 63%.
 - 60% of the users are more likely to repair future items after a single visit and the satisfaction rate is 94%.
 - Some DIY repair facilities have 3D printers, which makes it possible to reproduce replacement parts.
 - These initiatives foster a sense of community and knowledge sharing.
 - Customers also learn about how to properly clean and maintain their appliances.

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- Volunteers have limited access to manuals and parts, sometimes limiting the success of repairs and posing safety risks.
 - Marketing to attract new clients and volunteers and obtaining funding are sometimes difficult.
 - The repair rate for electronics is lower than for other items: 53% versus 85%.
 - Large household appliances are not repaired in these locations because it is difficult to bring them to the site.

3. EUROPEAN UNION

In 2021, the European Commission introduced new ecodesign measures for refrigerators, washing machines, washer-dryers, dishwashers and monitors. Spare parts must be available for 7 or 10 years after coming onto the market (depending on the product and parts), must be delivered within 15

days and must be replaceable with commonly available tools. In some cases, repair manuals and instructions, software updates, parts lists and ordering procedures must be provided. Some of this information may be provided to independent repair shops and consumers.

- These rules ensure better access to parts and repair information.
- They encourage manufacturers to design products that are more easily repairable and to provide documentation.
- The cost of manuals should be reasonable and proportionate, i.e., not discourage their use.
- For some products, DIY repair is possible because consumers have access to parts.



- Computers, smartphones and products released prior to March 1, 2021 are excluded.
- These rules do not address the cost of replacement parts.
- The bundling²¹ of parts is allowed, which may lead to the replacement of more parts than is necessary or parts that are functional being replaced, thereby increasing the cost of repairs.
- Restricted access to manuals and parts is allowed for the first two years.
- Parts and information for some products are only available to certain repair providers.
- The definition of a repair provider is left up to the country or the manufacturer, but since some countries are slow to act, there is a risk that the manufacturers will decide on who has access to this information.





4. ECODESIGN INITIATIVE: GROUPE SEB

The company has a "15-year repairable product" logo which means that spare parts will be available for 10 to 15 years, at cost, and delivered within 24 to 48 hours. The company also offers fixed-price repair packages for each product - regardless of the failure - that are less than one-third the price of the product. A six-month extended war-

ranty is offered on the repaired product. The company also shares information on local repair shops and on product disassembly and reassembly. It has a network of 6,200 repairers worldwide and a repair training facility, *RépareSEB*, jointly managed with a social insertion organization.

21. Bundling is the sale of different items, usually hardware or software, as a package and not separately.


- The proportion of products repaired rose from 70% to 82% between 2012 and 2017 for products under warranty, and products off warranty saw an increase of 21% in the rate of repair between 2014 and 2016. 
- The assurance of product repairability increases purchase intent by 8%, which builds customer loyalty.
- The company offers solutions to a number of repair disincentives (cost, time, lack of information, etc.).
- Repair technicians receive training and regular inspections.
- *RépareSEB* helps to make up for the shortage of repair technicians by training a new generation of repairers.

- Services are not available wherever *Groupe SEB* products are sold. 

5. ECODESIGN INITIATIVE: FAIRPHONE

This Netherlands-based company designs smartphones that are easily repaired. Spare parts are available for at least five years after the product is released to the market, are delivered within three to five days, and the screwdriver needed to disassemble the unit is

provided at the time of purchase. The phone is of a modular design: its performance can be improved by replacing selected parts. Also, their website includes a troubleshooting platform for locating the source of any fault or breakdown.

- The number of phones in use compared with the number sold is increasing, indicating that they have a long lifespan. 
- The company targets a 4.5 year service life for its phones, compared with an average of 2.7 years for other phones on the market.
- DIY repairs are possible, and even encouraged, as a result of the availability of certain resources.
- The phones received very high repairability ratings from iFixit and France's Repairability Index.
- Repairs and parts are more affordable than for other brands.

- It is possible to install alternative software and extend the life of the device.
- The company takes care to ensure that certain minerals used in its products are sourced ethically.

- The phone's performance is weaker than other brands.
- The target audience for purchasing it is very limited, i.e. those who are already committed to repair and to the environment.
- The high purchase price is the major deterrent; the newest model costs about \$800.
- The various models developed over the years may have contributed to a certain form of obsolescence.
- The product is not available outside of Europe.



6. ECODESIGN INITIATIVE: FRAMEWORK

Founded in the United States in 2019, Framework markets various models of modular laptops, which are easily disassembled and repaired. Parts are available on its website. Users can even build their own custom

computer using the parts, components and software of their choosing, and buy only the parts they need if they already have some of them.

- The iFixit website gives it a repairability rating of 10/10.
- Tutorials are available on their website showing how to replace various parts.
- All parts can be replaced using the screwdriver supplied with the purchase.
- Framework computers are made using recycled aluminum and plastic.




- The cost of a computer is relatively high, even though it is comparable to certain models from other brands (such as Apple).




7. ONLINE RESOURCES

There are plenty of online resources available to help with DIY repairs or to learn about product repairability and durability. The [iFixit](#) website offers repair tutorials, schematics, parts, tools and repair kits, and [repairability scores](#) for tablets, smartphones and computers. Youtube is another useful resource, as many manufacturers have uploaded manuals or tutorials there. In Quebec, the magazine

Protégez-Vous, in partnership with RECYC-QUÉBEC, has developed a [repairability rating](#) for numerous small electrics and publishes a guide: “*100 trucs pour faire durer vos appareils domestiques*” (only available in French). Insertech Angus has also published a [guide](#) on how to properly maintain your laptop and thereby extend its useful life.

- Some of these resources help consumers choose products that are more repairable and more sustainable and help people who want to perform DIY repairs. 
- About 50% of Repair Cafés use some of these DIY help resources.
- iFixit has over 75,000 free tutorials covering nearly 35,000 devices.
- Information about maintenance is important, as most breakdowns are the result of little or no maintenance.
- These resources help provide access to information not supplied by manufacturers and promote the sharing of knowledge and expertise.

- These resources do not cover all products on the market and tutorials or manuals are not always up-to-date. 
- Some DIY repair advice may be inaccurate, unsafe, or may not represent the advice of repair professionals.
- The manufacturer has not necessarily agreed to the posting of certain information on the Internet.

8. DIRECTORIES OF VERIFIED REPAIRERS

In Austria, the *GRAZ Repariert* directory catalogs some 40 businesses in the city of Graz and, in Vienna, *Reparaturnetzwerk Wien* has some 80 members. To belong to these directories, five criteria must be met. Citizens must deal with one of these businesses to receive the municipal subsidy covering half

of the repair costs (see measure 1). In France, the national network “*Répar’acteurs*” groups together over 28,000 businesses that must also meet certain criteria. Since 2022, individuals must deal with one of these businesses to benefit from the national repair fund, which covers a portion of the repair costs.

- Businesses listed in these directories enjoy higher visibility.
- These directories make it easier for consumers to search for services.
- Businesses listed in these directories collaborate and exchange their know-how, knowledge and clientele.
- In Austria, service quality is ensured thanks to a client service feedback system.
- Graz: Customer confidence in the businesses listed in the directory is high.
- Vienna: the businesses perform over 50,000 repairs per year, thus diverting some 750 tonnes of waste.
- France: the repairers help verify the repairability index and can signal misinformation.



- The reliability of these directories depends on public funding and political support.
- A membership fee is sometimes required, which can be an obstacle for businesses.
- These directories are not well known: in Graz, less than a third (28%) of the population knows about the network.
- More promotion is needed to raise public awareness of these directories.



9. LISTS OF REPAIRERS

In Quebec, the *Corporation des Techniciens en Électroménager du Québec* (CTEQ) lists its members on its website, and *Élexpertise* also lists certified repairers of home appliances by Quebec region. *Protégez-Vous*, in partnership with *RECYC-QUÉBEC*, created an interactive map listing appliance, air conditioning and electronic repair businesses as well as locations where people can do the repairs themselves or rent tools. A few repairer directories have also been created for certain regions

of Quebec (Mauricie, and Sherbrooke for example).

In British Columbia, there is an interactive map of the Vancouver Metropolitan Area that allows users to locate repair centres for HAEs and also for other items, such as bicycles, textiles, etc.

- Businesses on these lists enjoy higher visibility.
- These lists make it easier for consumers to search for services.
- The CTEQ encourages its members to support one another, their access to documentation is facilitated and they can access training.
- Most of these repairer lists charge no membership fees.



- These lists are not always kept up to date and should be disseminated more widely.
- Public confidence in these businesses could be higher if selection criteria were applied.



10. FRENCH LEGISLATION

Passed in 2020, France's AGEC law seeks to accelerate the transition of production and consumption modes to a circular model. Its targets include plastic, waste, planned obsolescence, information available to the public and production processes. It is also supported by an [awareness campaign](#) and at least one [advertisement](#) to encourage people to consider repair and reuse. It contains three

particularly noteworthy measures that deal with repair and product durability.

1. The legal warranty must appear on the sale receipt. In France, the minimum warranty is two years. If the product is repaired under this warranty, the warranty is then extended by another six months.

- Consumers have more information on their rights as part of the warranty.
- Post-repair extension of the warranty might encourage people to opt for repair.





- Displaying the information does not necessarily increase access to repair or the number of repairs.
- The warranty extension requires customers to have their product repaired by the manufacturer, whose repairs are often more expensive and sometimes less satisfactory.



2. For a number of the appliances covered, the law requires that replacement parts remain available for at least five years and that information on their (un)availability be displayed. The deadline for parts delivery is 15 days. Repairers must offer used or refurbished parts, but if these are unavailable they can produce parts using a 3D printer. Any technique denying repair professionals access to parts, operating instructions,

technical information, instruments, equipment and software useful in the repair process, and any practice that precludes an independent repairer from repairing the product are prohibited. Information and safety instructions for DIY repair can be made available by the manufacturer.

- These rules could stimulate the repair sector by implementing crucial changes. 
- The requirement to display information on parts (un)availability could lead consumers to choose a more repairable product and encourage manufacturers to engage in ecodesign.
- The option to print 3D parts does not undermine manufacturers' intellectual property.
- The manufacturer is not responsible for damages or injuries caused by DIY repair if it has provided safety instruction.


- The requirement to make replacement parts available for five years applies only to certain appliances. 
- Manufacturers have a two-year reprieve before being required to sell replacement parts.
- The requirement to display information on parts (un)availability does not apply to online purchases, despite the fact that in France, 35% of French online shoppers have purchased an HAE.
- There is no requirement to make parts and information available to consumers.


3. Since January 2021, a repairability index has had to be displayed on computers, mobile phones, washing machines, televisions and electric lawnmowers such that they are visible at the time of purchase. This takes the form of a score between 1 and 10 grading the

product's repairability according to five criteria: availability of documentation; availability of replacement parts; costs of parts; product disassembly; and a final criterion specific to each product category. The number of products covered will be increased over

the years. In fact, as of November 4, 2022, four more appliances will be subject to this requirement: top-loading washing machines,

dishwashers, vacuum cleaners and high-pressure washers. In 2024 a durability index will be added.

- These indexes are useful in combating obsolescence, informing consumers and reducing the difficulty perceived by consumers in having products repaired. 
- Both indexes represent a collaborative effort on the part of various community actors.
- They were implemented by the government, which increases public confidence.
- Over half of the population knows about the repairability index and 76% of those who noticed it at the time of purchase found it useful. It will lead 87% of the French public to favour repair.
- The durability index responds to consumers' desire for more information on durability and stakeholders have a long time to prepare for its introduction.

- The first phase of the repairability index covers only five products. 
- The repairability index is calculated by the manufacturer, weighting of the criteria is inadequate, the grades are too high and vary little, interpretations differ according to the manufacturer and calculation details are difficult to obtain.
- There is no single resource people can consult to have all the indexes of all the products covered.
- Stakeholders affected by the repairability index had little time to prepare.
- The durability index will likely be calculated by the manufacturer as well, which could lead to greenwashing.
- Too many manufacturers are involved in creating the durability index proportionate to the other actors.
- There is uncertainty surrounding the link between these two indexes, and the existence of the two tools could confuse consumers and overload them with information.
- Further awareness and education efforts are needed to publicize these indexes.

11. LAWS OF CERTAIN U.S. STATES

Rhode Island requires parts to be made available to all repairers for at least four years after the product's last sale, even for products without a warranty. Parts must be delivered within 30 days. Indiana requires that parts for certain products be available for all repairers for at least seven years after the date of manufacture, even for products

without a warranty. The delivery deadline is 45 days. In California, documentation and parts for products under warranty must be available for three to seven years (depending on the product price) for repair centres.

- These legislative measures ensure improved access to the parts and information required for repair.
- They encourage manufacturers to design products to be more repairable and to provide documentation.
- Two states require availability for independent repairers and for products not covered by warranty, and set a deadline for replacement part delivery.




- None of these three laws addresses the prices for parts and documentation.
- None of these three laws requires that consumers have access to parts and information.
- The 30 and 45-day deadlines for parts delivery can be lengthy for certain essential HAEs.
- Some states limit these requirements to certain goods and/or to manufacturer-certified repairers.



12. NEW YORK STATE LEGISLATION

New York State has passed a Right-to-Repair law to take effect in 2024. Manufacturers of electronic devices must provide repairers - including independent

repair specialists - and consumers with the necessary documentation, parts and tools for diagnosis, maintenance and repair.


- The law covers a broad range of electronics, since the only requirement is that the functioning of the device depends on digital electronics. 
- Information made available publicly by manufacturers could be available outside of New York State, since it is difficult for these stakeholders to restrict access to this online information to a single jurisdiction.
- Documentation must be available at no charge (unless requested in physical printed form).

- The law only applies to products put on the market after July 1, 2023. 
- Appliances are excluded as well as electronic devices used exclusively by businesses and government.
- Bundling of parts is allowed, which can lead to the replacement of more parts than necessary, or still functional, and thus increase the price of the repair.
- Electronic circuit boards (e.g. motherboards, USB keys) are excluded from the parts that must be available, thus limiting many repairs.
- This law does not regulate the delivery time of parts, tools and documentation.
- This law does not truly address the price of spare parts and tools.

13. TOOL LIBRARIES

These institutions, such as [*La Remise*](#) in Montreal or the [*Toronto Tool Library*](#), offer members the opportunity to borrow various tools at a reasonable price, access

to a workshop and training. An annual membership fee is charged. In Canada, there are approximately 20 such libraries.

- These tools, workshops and training facilitate DIY repair. 
- They allow consumers to save money and not have to buy tools.
- According to an American study in North Portland, without the neighborhood tool library, two thirds of members would have bought a new tool.
- Small home appliances are occasionally available as loaners to replace an appliance while it is being repaired.

- Funding and recruitment of volunteers can be challenging.
- The logistics can be a problem (e.g. having to travel to obtain the tool, or the unavailability of the tool).



14. SALE OF REFURBISHED ITEMS

In Quebec, Insertech Angus sells refurbished computers and tablets to the general public. It also refurbishes business equipment and offers to repair these devices for the public. It runs a repair training program for people struggling to find employment and/or for youth. Insertech Angus also holds *Réparothons* on a regular basis.

Électroménagers Ste-Foy: This store, located in Quebec City, sells various types of household appliances that have been refurbished by expert technicians.

In France, Murfy has also set up its own home appliance repair training program, and teams up with *Pôle Emploi* to help the jobless join the labour market. It also refurbishes home appliances and sells them to the public. They also use used replacement parts when refurbishing and repairing their products.

- The number of repairs performed by Insertech Angus for the general public and the number of refurbished appliances are increasing every year.
- The reuse rate for business equipment at Insertech Angus is 80%.
- Insertech Angus' revenues are high, demonstrating the viability of their business model.
- For the year 2018-2019, Insertech Angus held 17 *Réparothons*, bringing together 461 people and repairing (or diagnosing as repairable) 323 items.
- Électroménagers Ste-Foy provides a three-month guarantee on refurbished items.
- Murfy offers a set repair price regardless of the appliance or defect, which goes toward the purchase of its refurbished appliances if the product cannot be repaired. Their refurbished products come with a two-year warranty.
- A diagnostic platform is available on the Murfy site, and replacement parts can be ordered, making DIY repair easier.
- The used parts used by Murfy cost on average 40% of the price of a new part, can be available more quickly and carry the same warranty as new parts (six months).
- The products refurbished by these companies must undergo a strict quality control process before they can be sold.
- For both Murfy and Insertech Angus, training is fast and helps address the lack of repair staff.



- Only computers and tablets are refurbished by Insertech Angus, and only three products are accepted at their *Réparothons* (computers, tablets and smartphones).
- The territories served by Murfy are limited to a few large cities in France.



15. FUNCTIONAL ECONOMY

Commown, a French cooperative, offers consumers the opportunity to rent electronic devices instead of buying them (computers, headphones, smartphones and some acces-

sories). The rented products are durable and repairable, with ethical sourcing of materials. As an example, the company offers to rent different models of Fairphone.

- Consumers see the price of their package decrease every year of subscription, which encourages them to keep their device longer.
- Reduces the number of devices purchased and therefore produced, thus limiting the environmental impact.
- Repair packages are also included in the subscription.
- Refurbished products are offered.
- It is possible to rent accessories (e.g. charging cable and/or charger block, keyboard) or not to rent them if you already own them.



- The service is only available in some European countries.
- Although the price of the packages decreases over the years, the subscription cost remains high.

