# CCES 2025 Session Summary

## Repair Centre: Exploring Right to Repair & Value-Retention Processes to Drive Circularity

Ensuring products remain in use for as long as possible reduces demand for new goods and as such is a vital circular economy strategy. For this to succeed changes to product and system designs including improving durability, repairability and facilitating reuse are essential. Many consumer goods are marketed as single use and convenient, designed for planned obsolescence or even protected by proprietary technology. Experts in this session will discuss how to shift markets and consumers towards investing in repairability. Presentations will include the latest research on consumer attitudes and behaviours, and global policy advancements as well as feature leading product designers and businesses finding new ways toward profitability and consumer loyalty through repair.

Date / Location: Wednesday, April 16, 2025 / Montreal, Canada

Speakers:

- **Clayton Miller**, VP Business Development – Recycling, Quantum Lifecycle Partners (moderator)
- **Jennifer Russell**, Assistant Professor, Virginia Tech
- **Julie-Christine Denoncourt**, Project Manager in Source Reduction, Équiterre

# SUMMARY

## Speaker Presentations

### Jennifer Russell, Assistant Professor, Virginia Tech


Jennifer discusses the global status of the right to repair movement, emphasizing its broader ecosystem beyond just intellectual property and consumer rights. She highlights that the debate fundamentally revolves around who controls a product's hardware and software, and what product ownership truly entails.

Globally, original equipment manufacturers (OEMs) largely retain control over product design, business models, and service contracts, limiting consumer power. However, there's a growing international conversation and formal introduction of repair-related bills. Countries like Australia, New Zealand, Brazil, and China are integrating repair into their sustainability initiatives. Other nations such as Taiwan, India, Uganda, and Nigeria are focusing on programmatic responses, investing in infrastructure and community building to facilitate repair rather than strictly regulating it.

The most significant regulatory actions are seen in Europe and the US. European law, through ecodesign regulations and the directive on common rules promoting the repair of goods, adopts a full lifecycle perspective, identifying repair as a specific stage. This approach, supported by initiatives like the digital product passport, mandates not only repairable designs but also ease of repair, necessitating the provision of tools and information.

In contrast, the US approach is largely legalistic, centering on intellectual property rights of OEMs versus consumer interests. While all 50 states have introduced some form of right to repair legislation, only seven have enacted it. The movement began with agricultural equipment, but only Colorado has passed such a law for this sector. The primary focus in the US is on electrical devices, addressing issues like OEM control over tools, software blackboxing, and deceptive contracts that void warranties. This contrast highlights that the framing of right to repair in different regions dictates which voices are included in the discussion.

Jennifer argues that a holistic understanding of repair is crucial, recognizing it not merely as a response to product failure but as a recurring consumer engagement decision. Past experiences with repair, whether positive or negative, significantly influence future engagement. A study showed that individuals who witnessed repair practices in their childhood were over 30% more likely to consider repair as an

option. Therefore, alongside perfect policies and designs, there's a critical need for behavioral and cultural shifts to normalize repair. The goal is to make repair a practiced, accessible, and affordable activity within the economy, moving beyond a narrow focus on technology or policy alone.

### Julie-Christine Denoncourt, Project Manager in Source Reduction, Équiterre

In late 2024, a study on the applicability of a **durability index in Canada** was published, building upon a 2022 report that revealed significant challenges in electronic and appliance repair. The earlier study by Équiterre found that **63% of Canadians experienced an appliance breakdown between 2020 and 2021**, with products failing surprisingly quickly (averaging 2.6 years old). A mere **19% of broken devices were repaired**, largely due to perceived irreparable products, high repair costs compared to new purchases, difficulty accessing tools and replacement parts, and a general lack of repair information.

These findings led to the recommendation for a **mandatory durability index in Canada**, a concept supported by both consumers and repair professionals. This idea was further inspired by France's existing repairability index, launched in 2021 for five product categories and expanded in 2022. This French index, displayed at the point of sale with a score from 1 to 10, is set to transition to a mandatory **durability index in 2025**, initially for televisions and washing machines. It will incorporate **repairability, reliability, and for some products, upgradability**.

The Canadian study had two main objectives:

- **Identify conditions for an effective durability index:** This involved a literature review of 28 existing tools and interviews with 10 stakeholders in Europe and North America.
- **Assess the potential influence on Canadian consumer purchasing behavior:** This was explored through interviews with 25 consumers across Canada.

The research highlighted key characteristics for an effective durability index:

**Key Characteristics for an Effective Durability Index**

- **Mandatory Nature:** A mandatory tool is favored to incentivize manufacturers to improve products and provide consumers with uniform, comparable information.
- **Product Scope:** The selection of products covered by the index should be justified, considering factors like environmental footprint and replacement rates.
- **Assessment Criteria:** Four common criteria for assessing durability were identified:
    - **Reliability:** The likelihood of a product functioning as required for a given period.
    - **Repairability:** This should include the cost of repair, as it's a major barrier for consumers.
    - **Product Lifespan:** The expected period of use.
    - **Upgradability:** The availability of software updates and other upgrades.

- **Independent Scoring:** To ensure credibility, the scoring should ideally be done by an independent organization, as manufacturers' self-assessments have shown discrepancies.

Consumer interviews, using simulated product labels with a durability index, revealed that **21 out of 25 participants noticed and largely understood the index**. While it was quickly integrated into their decision-making, it acted as one input among others, with price still being a significant factor. The index's influence was more pronounced when initial product choices were uncertain or when it confirmed existing intuitions. Consumers also expressed a desire for transparency regarding the index's source and calculation methodology.
Finally, the study emphasized several other crucial considerations for implementing an index:

**Additional Considerations for Implementation**

- **Participatory Development:** The index's development process should include a wide range of stakeholders to ensure diverse perspectives.
- **Representativeness:** Care must be taken to ensure that smaller groups with fewer resources are not underrepresented in the development process.
- **Periodic Review:** The tool's methodology, criteria, and display should be periodically reviewed and updated.
- **Independent Control:** Strict, independent control over the scoring and display of the index is vital, along with deterrent penalties for non-compliance, as issues with display and information availability have been observed in France.
- **Public Awareness Campaigns:** Introducing an index must be accompanied by campaigns to educate consumers about its existence, credibility, and meaning.

This comprehensive research underscores the need for a well-designed, mandatory durability index in Canada, supported by transparent processes and public awareness, to encourage product longevity and empower consumers to make more informed purchasing and repair decisions.

## Audience Q&A

The question and answer session following the panel presentations addressed the importance of developing and implementing standardized repairability and recyclability assessments for products, particularly electronics, to increase consumer confidence and promote a circular economy in Canada. Key points included the push for a uniform "Canadian index" mirroring European initiatives like the French index and Ecodesign requirements, while also acknowledging barriers such as OEM practices that hinder repair and the need for increased consumer awareness and practical skills in repair.

**QUESTION 1 -** The question and answer period began with an audience member highlighting the ongoing work by the International Standards Organization for Electrical Electronic (IEC) to develop a standard for assessing the repairability of electronics globally. The speaker, who is involved in this standards committee, stressed the importance of international harmonization for repair assessment and the concurrent development of a recyclability standard. She expressed personal enthusiasm for improved repair and longevity information for electronics in Canada, noting Europe's progress as a good example.

The panel responded positively, agreeing that formalized standards are crucial for building consumer confidence in refurbished products. They cited their own adherence to global electronics standards like R2, which prioritizes reuse, and noted that greater commonality in grading refurbished products would

encourage more consumers to buy used devices. While repair and reuse are happening informally, the panel's goal is to formalize these practices.

Regarding government engagement in Canada, the panel noted a positive reaction to their research on a durability index, particularly from provincial governments. They are advocating for a uniform Canadian index across all provinces for ease of implementation. While there hasn't been a direct response from the federal government due to upcoming elections, provincial governments, including Quebec, have shown significant interest. However, the exact implementation strategy remains unclear.

**QUESTION 2** - The question addressed the challenge of establishing credibility for a durability index in a crowded consumer information landscape, particularly how to differentiate a rigorous index from potentially less reliable or "greenwashing" claims.

The panel's response emphasized that the credibility of such an index is significantly enhanced if it originates from a **government initiative**. They argued that consumers are more likely to trust information from their government than from unfamiliar businesses, especially given the potential for greenwashing.

Furthermore, the panel highlighted the importance of a **participatory development process** for the index's criteria. By involving a diverse range of stakeholders, including consumer associations, businesses, producers, and environmental organizations, the index gains broader acceptance and legitimacy.

Regarding the presentation of the index to consumers, the panel stressed the need for **clarity and simplicity**. While acknowledging the abundance of information consumers encounter while shopping (e.g., features, price, brand logo), they advocated for a clear and easily understandable display. They specifically praised the use of a **color-coded score** as an effective method for quick comprehension. The panel also critically noted that adding too much explanatory text, as seen in a subsequent iteration of the French Durability Index, could detract from its clarity. They suggested that a concise score with a color code would be more effective in allowing consumers to quickly grasp the information. The panel also acknowledged the value of further studies to determine the most effective ways for consumers to understand and utilize such an index.

**QUESTION 3** - This discussion explored the crucial knowledge and actions needed to effectively scale repair, moving beyond mere industry capability to foster a widespread culture of repair.

One panelist, representing a repair and refurbishment company, stressed that while professional, certified repair is vital, particularly for complex electronics with safety concerns (e.g., lithium-ion batteries), the broader goal is to build credibility around the entire ecosystem of repaired devices. This includes promoting refurbished products as valid and affordable alternatives, backed by warranties.

The discussion emphasized that repair strategies must be tailored to different product categories. While electronics are often the focus, they represent a small fraction of items needing repair. A significant barrier to broader repair adoption is a lack of basic repair skills and awareness among younger generations, who have grown up in an era where taking things apart is uncommon. The pandemic, however, demonstrated a surge in willingness to explore DIY repair, driven by necessity and facilitated by online communities and resources.

To overcome barriers and encourage repair, several key points were raised:

- **Awareness and Perception:** Many consumers are unaware that items can be repaired or perceive repair as too costly. It was argued that repair is often a fraction of the cost of replacement, and the perception of high cost or difficulty is frequently a result of deliberate actions by Original Equipment Manufacturers (OEMs) to restrict access to tools, manuals, and information, or to implement deceptive practices that void warranties.

- **OEM Practices and "Right to Repair" Laws:** OEMs often employ tactics like locking down software, using proprietary fasteners, and issuing misleading warranty voiding stickers to create friction in the repair process. "Right to Repair" laws, particularly in Europe, aim to counteract these "bully tactics" by mandating accessible tools, information, and interoperability for third-party parts.

- **Multi-faceted Approach:** Scaling repair requires both "top-down" initiatives (like government regulations and professional repair services) and "bottom-up" efforts (like community repair workshops and fostering a general curiosity about how things work). Municipalities, for example, can play a significant role in promoting awareness and tool-sharing.

- **"Product as a Service" Model:** The concept of "hardware as a service" or "product as a service" was presented as a promising model. When the OEM retains ownership of a product throughout its lifecycle, they have a vested interest in its durability, repairability, and upgradability to maximize utility and profitability. This model shifts incentives, potentially leading to non-regulated scaling of repair through inherent business benefits rather than external enforcement. This approach aligns with learnings from the remanufacturing sector, where shifting ownership fosters design for longevity and easier repair.

**QUESTION 4** - The discussion explored examples of "right to repair" and reuse practices in commercial sectors, beyond typical consumer products. The panel highlighted two key areas:

- **Agricultural Equipment:** The "right to repair" movement initially gained traction in this sector because independent farmers faced significant financial losses when their essential equipment, like tractors, broke down and could not be repaired by themselves or local technicians due to proprietary designs and delayed service from manufacturers. This situation, where farmers were stuck unable to harvest crops, spurred the movement to ensure their ability to repair their own equipment.

- **Automotive (Fleet Management):** The panel pointed to the US federal "Vehicle Repair Savings Act" of 2016. This law was necessary to normalize repair practices for large fleets of vehicles owned by state and federal agencies, including police departments. These entities were previously unable to repair their vehicles or use remanufactured parts due to cost or OEM restrictions, leading to significant taxpayer expense. The law aimed to create a baseline for these commercial vehicle managers to engage in more cost-effective repair and reuse.

The discussion also touched on the broader dynamics of OEM behavior regarding repairability. While some companies actively fight "right to repair" initiatives, others, like Motorola, have embraced it from the outset by providing repairability features, manuals, and tools, and even partnering with organizations like iFixit to facilitate repair. Apple has also recently started to engage more in making repair accessible. The panel acknowledged that consumer demand for features like waterproofing can inadvertently make devices harder to repair, but emphasized that deliberate OEM design choices, like gluing in batteries, often pose unnecessary barriers.

Finally, the discussion noted that not all companies view repairability as a threat; some see a strong repairability score as a competitive advantage that can drive sales. Microsoft's transformation of its Surface tablet from an unrepairable device (scoring zero on iFixit) to a highly repairable one was cited as a positive example of an OEM responding to repairability demands. The conversation concluded by mentioning existing federal bills in the US (embedded in the Copyright Act) and a recently enacted law in Quebec (Bill 29) that aim to ensure independent repairers and consumers have access to necessary tools, information, and third-party parts, thereby addressing issues of copyright violation and interoperability. These legislative efforts signify a growing recognition of the importance of repair in the broader economy.

**QUESTION 5** - The discussion began with a question about Europe's Ecodesign requirements, which mandate product design with sustainability, repairability, upgradability, and extended service life in mind. The panel noted that such interventions into design decisions are not currently prevalent in North America but are on the radar due to their potential impact on multinational companies operating in the EU market. They emphasized the importance of upgradability as a design criterion, especially as consumer electronics like laptops become increasingly integrated, making them harder to repair or upgrade compared to older designs.

The conversation then shifted to the cost implications of repair. While the US faces significant legal battles regarding repair rights, the EU has already integrated financial resources for repair within its policy frameworks. The panel asserted that repair should be seen as a cost-reducing measure, challenging any narratives that suggest otherwise.

The discussion then broadened to approaches for promoting repair. It was highlighted that scaling repair requires both "top-down" initiatives (e.g., professional repair services, regulations) and "bottom-up" efforts (e.g., local repair workshops, tool-sharing, and fostering a general awareness and curiosity about repair among consumers). Examples like Toronto's repair cafes demonstrated the active role municipalities can play in citizen engagement. The panel stressed the need to reintroduce the idea of repair as a feasible and often cost-effective option, particularly for simpler household items, countering the prevalent perception that repair is too expensive or difficult. This perception is often influenced by OEM practices that restrict access to repair information and tools, or by legally dubious warranty-voiding tactics.

Finally, the panel explored the concept of "hardware as a service" or "products as a service," where consumers buy the *use* of a product rather than ownership. This model, rooted in remanufacturing principles, incentivizes the original equipment manufacturer (OEM) to design for durability, repairability, modularity, and upgradability. By retaining ownership, OEMs have a vested interest in maximizing the product's lifespan and utility, leading to a natural adoption of circular economy principles without heavy regulation. This approach benefits consumers by offering access to technology without the burden of owning depreciating assets, aligns with changing consumer preferences (especially among younger generations), and creates a more robust and sustainable supply chain. It leverages profitability and other value propositions to drive repair and circularity inherently.