CCES 2025 Session Summary

Global Perspectives: Insights from Circular Economy Efforts Around the World

Global efforts to advance a circular economy have gone mainstream. In fact, the 2024 Circularity Gap Report highlights circular economy has attained ‘megatrend status’, with a nearly tripling of activity over the past five years. What trends and best practices are emerging? What learnings have come from efforts around the world, how do these efforts compare, and where has real progress been made? This session heard from a diverse group of global leaders from industry, government, and civil society on leading and emerging circular economy efforts around the world.

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

Speakers

- **Jonquil Hackenberg**, CEO, Ellen MacArthur Foundation (keynote and moderator)
- **Peter Chauvel**, Strategy & Operations Lead, Moonshot for Circularity, Google X
- **Kari Herlevi**, Programme Director, International Programmes, Sitra
- **Philippe Masset**, Director, Europe & International, Agence de la transition écologique (ADEME)

SESSION SUMMARY

Keynote Presentation

Jonquil Hackenberg, the new CEO of the Ellen MacArthur Foundation (EMF), delivered a keynote speech emphasizing the global imperative and economic rationale behind the circular economy. She highlighted that the circular economy is gaining significant traction worldwide, with Canada having a substantial opportunity to accelerate its transition.

Jonquil began by presenting key insights from an EMF survey of over 100 companies. The primary motivation for organizations engaging with the circular economy is environmental impact, closely followed by cost savings and efficiency. However, significant barriers include limited infrastructure for a circular economy, concerns about upfront investment without guaranteed returns, and a perceived lack of consumer demand. Jonquil stressed the need to overcome these barriers by creating a robust market for circular solutions.

Jonquil outlined five key enabling conditions for success:

1. **Narrative with Economic Rationale:** Share success stories and economic data to demonstrate the value of circularity.
2. **Best-in-Class Policy:** Learn from policies and roadmaps implemented in other countries and industries rather than reinventing the wheel.
3. **Common Commitments for Common Rules:** Establish standardized rules for infrastructure and product design (e.g., global commitment for plastics) to avoid fragmentation.
4. **Make Products / Solutions Desirable:** Circular solutions must be appealing and attractive to consumers to compete with linear alternatives.
5. **Incentives and Offtakes:** Provide guarantees to organizations that alternative circular solutions will be purchased to drive adoption.

Jonquil then showcased global examples of the "art of the possible" in the circular economy. The "Big Food Redesign Challenge," launched by EMF, resulted in 141 regenerative food products from 12 countries being launched in supermarkets within 18 months, demonstrating the potential for desirable, land-friendly food innovations. Another initiative, "The Fashion ReMODEL," focuses on mainstreaming rent, resale, repair, and reuse in the textile industry. This accelerator program involves eight leading fashion brands committed to reducing reliance on linear models and integrating circular business models into their revenues. The goal is to make these practices as common and exciting as buying new. The example of the UAE's challenge with discarded vacation clothes and single-use abayas underscored the immense opportunity for reuse and redesign in textiles.

Jonquil also highlighted the importance of common commitments for global rules, citing the UN Plastics Treaty as a crucial example. This treaty aims to establish product design requirements, phase out problematic single-use plastics, and promote circularity in collection and reuse models. Jonquil noted that companies are increasingly setting specific, time-bound, and large-scale goals to address single-use plastics and improve infrastructure. EMF's role is to connect these initiatives to scale innovation.

Turning to Canada, Jonquil sees significant opportunities for circularity across key industries. She emphasized Canada's strong position in critical minerals (potash, uranium, palladium, lithium, cobalt), which are vital for the energy transition and electronics. This presents a huge opportunity for remanufacturing and systemic change. In textiles, Canada can leverage the global focus on rent, resale, repair, and reuse. Furthermore, agriculture, which constitutes 6.1% of Canada's GDP, offers a substantial opportunity for redesign and regeneration. Jonquil stated that making Canada's economy more circular could unlock $23 billion.

In conclusion, Jonquil outlined EMF's focus on unlocking insights, identifying barriers, and scaling up opportunities to facilitate investment in circular initiatives. She stressed the importance of leading with an economic rationale and material security, arguing these are non-partisan issues that resonate widely. EMF will continue to focus on policy, fiscal incentives, and circular business model design. Their three core missions for scale are plastics and packaging, consumer products and consumption, and critical raw materials and minerals.

Jonquil encouraged the audience to:

- **Change the dialogue:** Lead with economic rationale, material security, and market opportunity.
- **Make it cool:** Ensure circular solutions are desirable and appealing.
- **Make it affordable:** Achieve affordability through scale-up, shared stories, and collaboration.
- **Burst your bubble:** Think beyond individual ideas to foster larger, collaborative solutions.

Panel Discussion

The panel discussion, moderated by Jonquil, brought together global perspectives from diverse actors – Peter Chauval from Google X's Moonshot Factory, Kari Herlevi from Sitra (the Finnish Innovation Fund), and Philippe Masset from the French environmental agency ADEME – to discuss the critical trends, enabling conditions, and priorities for accelerating the circular economy. The conversation underscored the necessity of shifting mindsets, fostering collaboration, leveraging data and technology, and aligning policy and investment to realize the full potential of circularity.

Peter introduced X, Alphabet's (Google's parent company) innovation and R&D arm, responsible for "moonshots" like Waymo (self-driving cars) and Verily (health tech). He represents the "Circularity Moonshot" within X, focusing on material and innovation.

Kari leads the circular economy area for Sitra. Sitra established the World Circular Economy Forum in 2017 and is deeply involved in national circular economy strategies and funding innovation in Finland. They also conduct studies on circularity's connection to climate and biodiversity, with a recent focus on the Global South. Sitra recently launched the European Union Circular Economy Resource Center to bridge collaboration gaps between the Global South and the EU.

Philippe explained their role as a state operator in France, implementing public policies, especially concerning the circular economy. The agency also serves as an inspirer for the French government, conducting studies that inform policy decisions.

Key Trends and Observations

The panelists identified several overarching trends shaping the circular economy landscape:

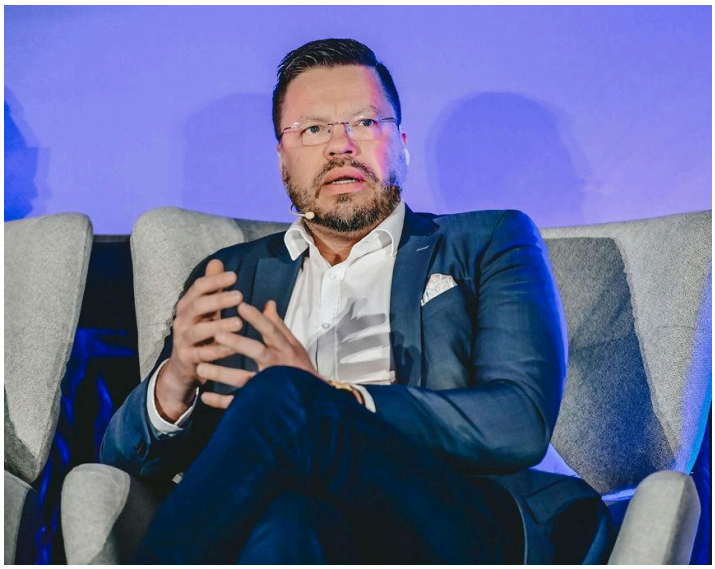
- **Shifting Mindsets: From Waste to Resource:** Peter highlighted a significant evolution in thinking. Decades ago, the focus was simply on waste collection, then diversion. Now, the paradigm is shifting towards viewing what is currently considered "waste" as the valuable "resources of the future." He emphasized that materials in used products are the same ones extracted from the ground, representing immense lost value. He cited a U.S. study where society effectively paid to throw away billions of dollars in plastic value.
- **The Economic Imperative:** Peter and Kari stressed the strong economic argument for circularity. Peter's point about lost value in plastics was echoed by Kari, who cited a Boston Consulting Group study indicating $200 billion worth of materials wasted annually, with $70 billion already in copper alone. This highlights the vast economic potential of circular models.
- **Implementation Gap:** Kari pointed out that despite ambitious targets in climate and biodiversity, the practical implementation of circular economy initiatives has lagged, particularly in Europe. He stated that the European Commission now emphasizes this implementation focus.
- **Resource Productivity Stagnation:** Kari noted that while labour and energy productivity have significantly increased since the 1970s, material and resource productivity has not. This indicates a ripe area for innovation to create more value from fewer materials.
- **Resilience and Security:** Kari highlighted that the circular economy offers a solution to current global shocks and fragile supply chains. By reducing dependency on specific countries and minerals, circularity can enhance material security and supply chain resilience, mitigating issues like those seen with the Suez Canal or volatile commodity prices (e.g., cotton).

- **Generational Shift:** Philippe observed that in France, younger generations are inherently integrating circularity, recycling, reuse, and repair into their daily practices. He linked this to the idea of circularity being perceived as "cool" by the new generation, contrasting it with older generations who may not have adopted such practices.
- **National Resource Constraints:** Given France's limited mineral resources, circularity, particularly the recycling of valuable materials, is a critical component of their public policies for ecological transition.
- **Need for Data and Simplification:** Peter emphasized the critical lack of robust, consistent data on material flows and recycling rates. He argued that "if you can't measure something, you can't change something." Better data is essential for informed decision-making and for training AI/ML models that can massively accelerate value creation and waste reduction in the sector. He also called for simplification and common rules / nomenclature across different jurisdictions for Extended Producer Responsibility (EPR) to be truly effective.

Enabling Conditions and Priorities for Action

The discussion then moved to the necessary conditions for accelerating circularity:

- **Systems Change and Value Chain Collaboration:** Peter asserted that true "systems change" is required in this industry, more so than in almost any other. He argued that collecting data, which is crucial for informing business and policy, often falls on cost-constrained entities (like recyclers). This creates a "chicken and egg problem" regarding who pays. The solution, he posited, lies in collective value chain thinking and meaningful collaborations. He stressed that all players will face risks if they don't collaborate and gain benefits if they do. Google's role, he clarified, isn't to build recycling facilities (MRFs) but to provide the data, tools, and information that enable the entire ecosystem to benefit from collaborative infrastructure. He likened this to a "rising tide raises all ships" philosophy, urging businesses to think of themselves as part of a collective value chain.
- **Ensuring Value Retention for Original Manufacturers:** Jonquil brought up the challenge of ensuring that the value of original ingredients and products is retained for manufacturers through reuse and repair models. Peter agreed, noting that in fashion resale platforms (like Vinted or Poshmark), original manufacturers often don't benefit, creating a disincentive for their investment in circularity. This is a significant challenge across textiles, plastics, and critical minerals.
- **Addressing Vertical Integration Risks:** Peter noted that some large companies are vertically integrating to capture the benefits of circularity (e.g., Ravago's polymer centers). While positive, he warned that this could lead to massive consolidation in the industry. For smaller players to compete, collaboration is paramount.
- **Innovation in Technology and Investment:** Peter highlighted the growing investor interest in waste technology, citing companies like AMP Robotics and Everest Robotics raising significant capital. He also pointed out the untapped potential of advanced AI (e.g., "agentic AI") for complex sorting across industries like plastics and textiles, which could be a major "step change."
- **Incentives and Taxes:** Kari emphasized that current environmental taxes and taxes on natural resources in many European countries are too low. Stronger incentives are needed to push markets towards circularity.
- **Public Material Sourcing:** Kari highlighted that while the phrase "public material sourcing process" is often used, little action has followed. Governments need to direct policies towards circular economy purchases and encourage new business models through their procurement power.



- **Bioeconomy and Circular Economy Alignment:** Kari praised Finland and Sweden for aligning their bioeconomy and circular economy policies, which enables regenerative agriculture and circular material flows. This could serve as a global model, particularly for the Global South.
- **Governmental Support and Market Creation:** Philippe stressed the role of public agencies in promoting and supporting innovation through subsidies. He also underlined the importance of gaining the trust of large industrial groups to combine private investment with public subsidies, creating viable circular solutions that are integrated with the current economic landscape and societal needs.
- **Legal Frameworks and Milestones:** France's "AGEC" law (Loi anti-gaspillage pour une économie circulaire - Anti-waste law for a circular economy), developed over 30 years, provides clear milestones for economic actors, institutions, and citizens. This law, combined with potential financial support, aims to provide the necessary "boost" for practical implementation.
- **Learning from Past Failures:** Philippe acknowledged that many past circular economy initiatives failed due to a lack of market or insufficient upstream planning. He stressed the importance of analyzing past data to inform effective solutions and robust business plans, which in turn reassures investors and public policy.
- **Consumer Engagement and Responsible Consumption:** A critical priority is to convince citizens to prioritize circular products (e.g., a repaired phone over a new one). The French agency invests in communication, awareness, and public information campaigns through distribution networks to instill the notion of circularity in daily life and encourage responsible purchasing.
- **Aligning Funding and Long-Term Returns:** Jonquil noted the complexity of various funding streams (energy transition, sustainability, circularity) and the need to carve out specific portions of existing public and private funds for circularity. A major challenge is the mismatch between expected short-term returns (5-8 years) and the long-term (20-year) returns often required for true systems change in circularity.

Illustrative Examples from France

Philippe concluded with concrete examples of circular economy initiatives supported by ADEME:

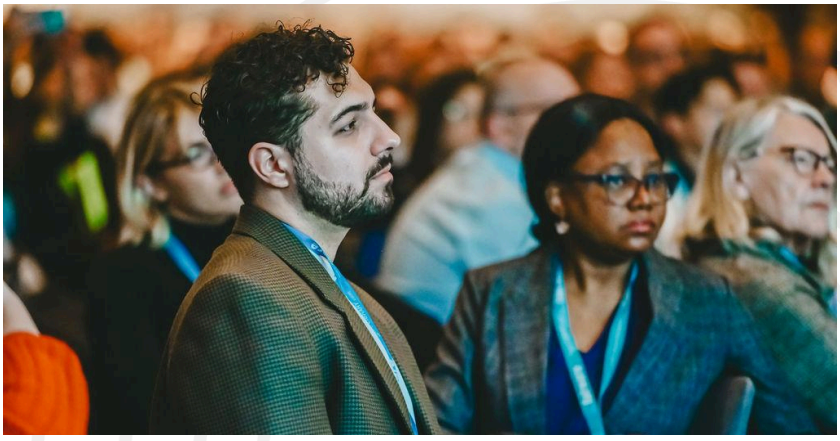
- **Footwear Recyclability (Besson):** The French agency partnered with Besson, a shoe brand, to redesign their manufacturing process for increased recyclability. The result: 50% of new products developed meet these enhanced recyclability standards, demonstrating effective public-private collaboration.
- **Smartphone Repairability:** France emphasizes the repairability of products, particularly smartphones, for younger generations. The goal is to create economically viable repair systems where all relevant economic actors are integrated into the value chain, leading to proven and lasting results.

- **Critical Material Recycling (Recylex / Renault):** A highly significant example for France, which has very few mineral resources, is the establishment of a critical material recycling value chain with a major industrial group (implicitly Renault, as seen in the slide, through its partnership with Recylex / Euro Dieuze Industrie for battery recycling). This innovative approach focuses on "black mass" recycling from batteries, integrating this crucial circularity dimension into a product vital for France's future economic development. This initiative underscores the focus on material security and retaining value within the national territory.

The panel concluded by reiterating the critical need for collaboration, data-driven decisions, aligned policy and investment, and shifting consumer behavior to normalize and accelerate the transition to a circular economy.

Audience Q&A: Data, Transparency, and Equitable Circularity

The audience Q&A session delved into critical aspects of the circular economy, focusing on the role of data, the need for transparency in industrial processes, and ensuring equitable outcomes, particularly for the Global South.



<u>QUESTION 1:</u> The Role and Scope of Data in Circularity - The first question addressed the balance between knowing too much about product composition for reuse and recycling versus the energy, effort, and cost of acquiring such extensive data. The question also pondered whether data efforts should be limited to high-value components.

- ➔ **Peter** responded by acknowledging the common concern about the energy consumption of data processing (e.g., CO2 per search query). However, he clarified that their approach at X focuses on minimizing the environmental impact of their models. Instead of tracking every minute detail, they target key components: shape, color, additives, barrier layers, dyes, and base polymer. He emphasized that the number of these critical elements is not as vast as one might imagine, and the computational power required is surprisingly low. He humorously noted that they use a "little

desktop computer" for their models, contrasting it with the perception of "generative AI and LLM models of the world that produce gigatons of CO2." He even shared that the CO2 produced from training all their models over the past five years was "less than one flight from San Francisco to Los Angeles."

- ➔ **Philippe** built on this, introducing the critical issue of transparency in plastic production. He highlighted a significant problem identified during discussions on the international plastic pollution treaty: virgin plastic producers use unknown additives in their formulas. These additives are proprietary and part of industrial confidentiality, but they severely hinder recycling efforts because the chemical composition of the plastic remains a secret. Philippe argued strongly for transparency from producers to enable effective circularity. Without it, a portion of products will remain in a "black box," unrecyclable due to unknown composition.

QUESTION 2: Reconciling Profitability with Equitable Circular Practices - The second major question from the audience addressed a profound ethical dilemma: given that zero-waste and circular practices have historically been standard in impoverished or developing societies, how can the pursuit of profitability in the circular economy avoid further concentrating wealth in the hands of a few?

- ➔ The panel acknowledged the critical importance of this question, with the moderator noting the "insufficient understanding and play of the Global South in our discussions and solutions around circularity." The discussion proposed two main avenues for addressing this:
  - ◆ **Re-evaluating Material Flows with a Global South Perspective:** The Ellen MacArthur Foundation (EMF) is focusing on how to integrate alternative materials – those closest to nature – into the technical cycle. This approach aims to benefit the Global South by enabling material security and a level playing field in the new circular future. This includes considering fiscal incentives that support such transitions.
  - ◆ **Formalizing Informal Economy Models:** The panel suggested learning from the informal economy, where payment is often per kilo of waste collected. Brazil was cited as an example of innovation in this area, shifting from paying for waste collection to paying for "environmental services rendered." This change encourages the informal economy to evolve beyond mere collection into more value-added activities like repair. If scaled, this "products as a service" model could unlock significant benefits for the Global South by creating new economic opportunities within circularity.
- ➔ **Kari** added to this, highlighting that many African nations, despite being rich in resources and renewable energy potential, are currently not processing materials or gaining added value from them. He stressed that this imbalance needs to be rectified, although building systemic approaches will be a long journey.
- ➔ **Peter** concluded this point by reflecting on past practices where the Global South was often treated as a "dump" for unwanted materials from wealthier nations. He noted that new legislations, like China's "National Sword" policy and various Basel Conventions, prevent this practice. He expressed hope that by developing circular economies in wealthier nations, they can also enable technologies for waste management to become ubiquitous in developing economies, thereby fostering new local industries and addressing their own material challenges. He reiterated that Extended Producer Responsibility (EPR), if well-implemented, could be a brilliant mechanism to support this equitable development.

The Q&A session underscored the intricate challenges and immense opportunities within the circular economy, emphasizing that successful implementation requires not only technological innovation and policy frameworks but also transparency, ethical considerations, and collaborative efforts across all societal and economic strata.