

COLLECTED ESSAYS

# ESG: MYTHS and REALITIES



The Circular Economy:  
(Re)discovering the Free Market

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## The Circular Economy: (Re)discovering the Free Market

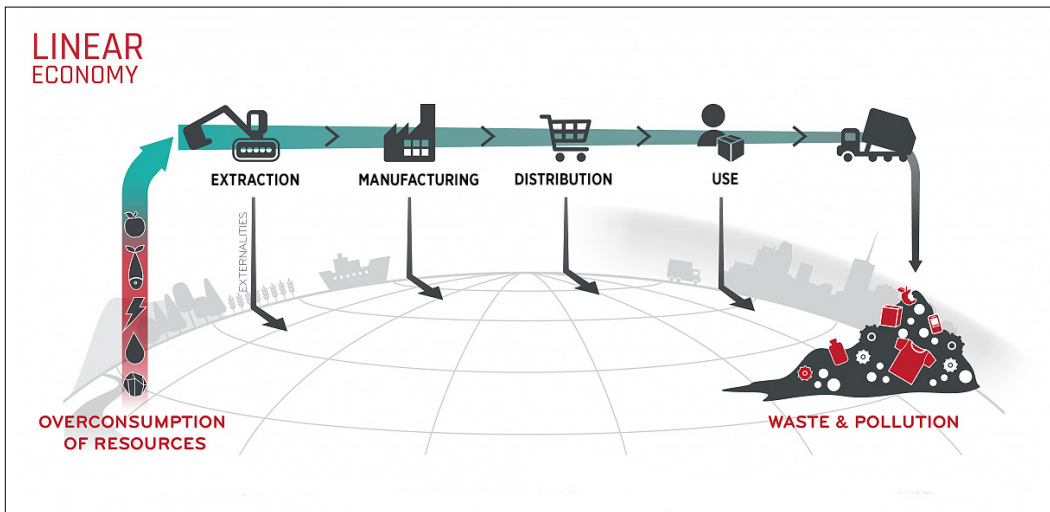
Pierre Desrochers

### Introduction: The circular economy

The concept of a “circular economy” (CE) has been promoted lately by a wide range of prominent public and private organizations, all of whom speak of it as if it were a new idea. The list of proponents includes the World Economic Forum (WEF), the Organization for Economic Co-Operation and Development (OECD), the World Trade Organization (WTO), the United Nations Environment Programme (UNEP), the US Chamber of Commerce Foundation, and BlackRock Global Funds. Numerous international, national, and sub-national levels of governance, from the European Commission to the Chinese Communist Party, along with a wide range of academics and activists, have also supported various CE initiatives. In Canada, these include the federal government, the provinces of Quebec and Ontario, the cities of Toronto and Vancouver, the David Suzuki Foundation, and the University of Ottawa-based Smart Prosperity Institute. Larger coordination efforts to further advance the CE include the Global Alliance for Resource Efficiency and Circular Economy (GARECE), the Platform for Accelerating the Circular Economy (PACE), and the African Circular Economy Alliance (see Appendix 1; Brandão et al., 2020; and Tudor and Dutra, 2020).

The CE is typically presented as an innovative new idea, in contrast to the existing economy which is caricatured as a “take, make, waste” extractive “linear model” of traditional market economies. The current economic system is described as one in which resources are extracted, processed, and disposed of carelessly, resulting in uncontrolled release of waste materials and pollution emissions in all production stages (see Figure 1).



**Figure 1:** The Linear Economy

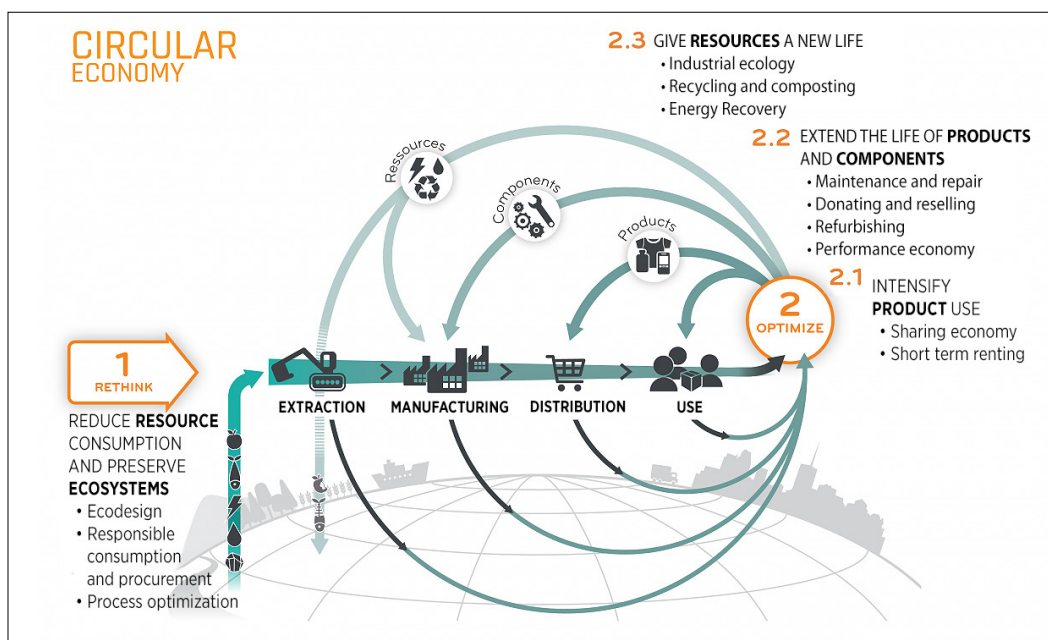
Source: Institut EDDEC and RECYC-Quebec (2018): [https://www.recyq-quebec.gouv.qc.ca/sites/default/files/default\\_images/schema-economie-lineaire-mars2020-english.png](https://www.recyq-quebec.gouv.qc.ca/sites/default/files/default_images/schema-economie-lineaire-mars2020-english.png).

Like many other organizations and governments, the World Resources Institute argues that “linearity in the global economy” has resulted in “significant societal challenges including resource depletion, climate change, waste, pollution and health hazards.” These problems, in turn, “threaten long-term economic growth, jobs, security, health and environmental wellbeing” (World Resources Institute, undated).

In contrast to this description, a circular economy is said to be an alternative mode of production and consumption that maximizes the utility of scarce resources by constantly re-using and regenerating them in a cyclical pattern, manufacturing more durable products and benefitting from the potential offered by the sharing and services economy (Figure 2).

Environment and Climate Change Canada (2021) describes the CE as “a new way of doing business that extracts as much value as possible from resources by recycling, repairing, reusing, repurposing, or refurbishing products and materials—eliminating waste and greenhouse gas emissions at the design stage.” A case in point is turning pulp-and-paper mill waste into renewable bioproducts. As a report published by the World Economic Forum (WEF) states, the CE is really about “[e]liminating waste from the industrial chain by reusing materials to the maximum extent possible [which] promises production cost savings and less resource dependence,” in the process delivering “substantial net material savings, mitigation of volatility and supply risks, drivers for innovation and job creation, improved land productivity and soil health, and long-term resilience of the economy” (WEF et al., 2014: 18). The CE can thus play a crucial part in addressing problems ranging from global climate change and biodiversity loss to air, land, and water pollution. Its rapid adoption is deemed critical in light of the magnitude of current challenges, such as rising global population and affluence and the potential doubling in the production and consumption of resources in coming decades (Lacy and Rutqvist, 2015).

Figure 2: The Circular Economy



Source: Institut EDDEC and RECYC-Quebec (2018): [https://www.recyq-quebec.gouv.qc.ca/sites/default/files/default\\_images/schema-economie-circulaire-mars2020-english.png](https://www.recyq-quebec.gouv.qc.ca/sites/default/files/default_images/schema-economie-circulaire-mars2020-english.png).

At this point the instinct of people appreciative of the free market will be to point out that competitive markets already provide an incentive to eliminate waste and make efficient use of costly inputs. In contrast, CE proponents claim an estimated \$4.5 trillion of value is “up for grabs in the circular economy” (Lacy et al., 2020; see also Lacy and Rutqvist, 2015: xv), as if to suggest profitable opportunities to eliminate or reuse waste by-products are systematically ignored by private sector agents. Yet at the same time other proponents lament that the CE remains a “radical challenge to existing systems and business models” (Lacy and Rutqvist, 2015: x) as individual businesses are deemed unable to bring about systemic change on their own (Korhonen et al., 2018). To CE proponents, notwithstanding the alleged commercial benefits, achieving “competitive advantage from circularity” requires policy interventions such as:

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- taxes to discourage the use of virgin materials and subsidies;
- mandatory requirements (including green public procurement policies) and other forms of support to increase recycling and secondary material content use;

- the creation of organizations that gather relevant knowledge and information and promote the CE;
- extended producer responsibility and product stewardship schemes;
- and eco-labelling and eco-design policies (Brandão et al., 2020; Lacy et al., 2020; Yamaguchi, 2021).

In short, a circular economy is apparently a vast opportunity for entrepreneurs, yet at the same time requires central planning since it is “an industrial system that is restorative or regenerative *by intention and design*” (WEF et al., 2014: 15, my emphasis).

**“(CE) describes practices that have been an integral part of market economies from their very beginning. What is truly new is the misrepresentation of the market economy as linear, wasteful, and mismanaged...”**

The contradiction can be resolved by recognizing that while the concept of a CE is somewhat new, it describes practices that have been an integral part of market economies from their very beginning. What is truly new is the misrepresentation of the market economy as linear, wasteful, and mismanaged, thus providing a pretext for new forms of central government control. The private sector has been “circular” for as long as humans have used waste from one

process, such as manure and bones from livestock, as an input to others, such as fertilizer for crops or a material to manufacture countless tools, jewelry, and toys. And the private sector has sought ways to minimize the waste of inputs for as long as humans have conducted commerce in any form, for the simple reason that inputs are scarce and costly. Past market actors did not need prodding by academics, activists, consultants, politicians, and bureaucrats to make the CE a reality.

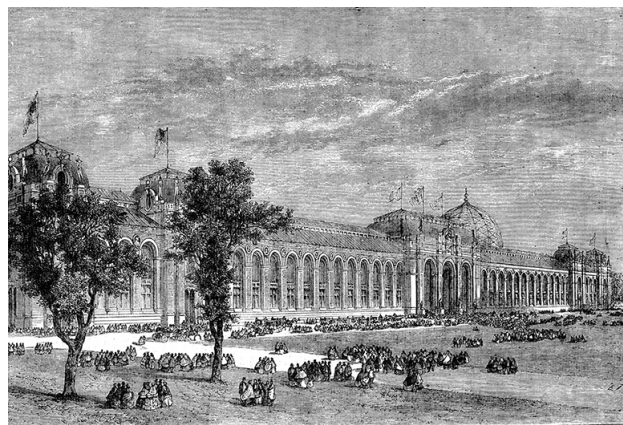
While the point is somewhat obvious, the best way to demonstrate it is simply to quote what long-ago writers had to say about the concept of the CE, long before the current buzzword became popular.

### **The circular economy: Second nature in a competitive market**

As researchers affiliated with the Smart Prosperity Institute (2020: non-paginated) acknowledge, “globally, businesses are already implementing a wide range of practices that incorporate circular economy principles, whether or not these practices are explicitly identified as circular, or part of a larger, company-wide greening strategy.” One therefore wonders why previous generations of managers, engineers, technicians, and other business practitioners would have systematically neglected the creation of wealth out of freely available production residuals.

As it turns out, they didn’t. A significant literature on by-product use goes back to the early days of industrial development (Desrochers 2007, 2011, 2012; Desrochers and Leppälä, 2010;

Desrochers and Szurmak, 2017). To give but a few illustrations, the chemist William Crookes observed in 1873 that “the progress of our great chemical manufactures during the last ten years, as exemplified in the International Exhibition of 1862, appears chiefly to have been directed towards the utilization of waste substances.” An anonymous entry on the “utilization of waste materials” published in the 1886 *Hazell’s Annual Cyclopaedia* describes how “in the earlier days” of many manufacturing branches “certain portions of the materials used have been cast aside as ‘waste,’” meaning that they had “no useful purpose.”



THE INTERNATIONAL EXHIBITION BUILDING, FROM THE SOUTH.

It was then experimented with a “view to finding some profitable use for it.” Over time, “in most instances the experiments have had more or less satisfactory results” and, “speaking generally, it may be said that such a thing as ‘waste’ is now hardly known in the arts” (Price, 1886: 464). At the turn of the twentieth century the American industrial chemist Leebert Lloyd Lamborn (1904: 16) observed that “If there is one aspect more than any other that characterizes modern commercial and industrial development... it is the utilization of substances which in a primitive stage of development of any industry were looked upon as worthless.”

Arguably the most important writer was the journalist and publisher Peter Lund Simmonds who systematically documented and created a number of exhibits on the topic in the second half of the nineteenth century (Desrochers, 2009). In a catalogue published in the 1870s, he commented that the “manufacturer, of course, only considers as Waste the residues of the used raw and subsidiary substances which remain on his hands after he has obtained the principal and secondary products, and these have often in his eyes little or no comparative value. Many useful bye-products and valuable industries, however, sprung out of the profitable utilization of these” (Bethnal Green Branch Museum, 1875: 2). As a reviewer of Simmonds’ 1862 book *Waste Products and Undeveloped Substances* put it: “It would be difficult to define what is ‘waste’ in the present day, so admirably and completely are the many substances, formerly neglected and thrown away, now utilized and converted into new and valuable products” (Anonymous, 1863: 254). Another reviewer wrote that the “great process of reconversion is the basis of art, as well as of nature. The latter has not any refuse material to throw away; she uses and reuses all that is left from her previous manipulations... And it is the perfection of art to run through the same circuit” (Anonymous, 1862: 332).

Past writers typically credited two types of incentives for these developments. Most important was the profit motive that enticed industrialists to find new ways of channelling as much of their inputs as possible through the economy rather than their backyards, rivers, or the atmosphere. In doing so, they reduced disposal costs and earned new revenues. The Scottish chemist and politician Lyon Playfair (1889: 269) thus argued that “as competition becomes keen, these waste products may become the largest source of profit.” Simmonds’ most explicit passage on the topic was probably the following:

As competition becomes sharper, manufacturers have to look more closely to those items which may make the slight difference between profit and loss, and convert useless products into those possessed of commercial value, which is the most apt illustration of Franklin's motto that "a penny saved is twopence earned." (Bethnal Green Branch Museum, 1875: 4)

Two generations later, the Canadian-born economist Rudolf Alexander Clemen (1927: vii) viewed "the development of by-products in industry [as] one of the most outstanding phenomena in our economic life" and credited this outcome to the fear of being overwhelmed by competitors in the same or other industrial sectors. Modern conditions, he argued, made it "almost impossible materially to cut production and distribution of expense for the majority of commodities." In this context, "one of the most important opportunities for gaining competitive advantage, or even for enabling an industry or individual business to maintain its position in this new competition," was to reduce manufacturing expenses "by creating new credits for products previously unmarketable."

Another consideration occasionally discussed by past writers was the necessity of removing nuisances to other parties that could result in legal actions. To give but one illustration, Simmonds (1876: 39-40) observed that the stench resulting from the blood and offal at a large pork-packing establishment "had become such an offense to the neighbourhood, that the proprietors were threatened with a perpetual injunction." In time, they found a way to dry the refuse. The clean fat was converted into lard and the refuse into grease and grease oil. The remaining scrap, consisting of the bones of the head and feet and considerable meat, was then thoroughly mixed with the blood, dried, and converted into a valuable output. The whole process resulted in a smell comparable with that of a pot of boiled cabbage.

### The circular economy and central planning

In addition to their ignorance of the historical drive toward circularity in market economies, proponents of expanding the CE through greater public planning appear to be unaware of the fact that this approach was tried and failed miserably in the communist world.

**"...proponents of expanding the CE through greater public planning appear to be unaware of the fact that this approach was tried and failed miserably in the communist world."**

Centrally planned attempts to maximize resource use revolved around an elaborate hierarchical input and output quota system of waste registration, collection, distribution, and reuse and a number of mobilization campaigns. As with everything else in such an economic system, however, these experiments did not live up to expectations as they suffered from a number of shortcomings. To summarize: 1) individuals lacked incentives to invest

time and effort in the creation of goods other people were willing to pay for; 2) allocating resources rationally in the absence of a price mechanism, or when prices were systematically distorted by government policies, proved impossible; 3) a centrally planned system proved



unable to tap into the unique tacit knowledge and information that individuals possess about their immediate surroundings and particular line of work (Desrochers, 2004).

Perhaps the main differences between present-day CE literature and its historical antecedents, however, is their respective emphasis on intermediaries and the importance of product design. For instance, although he mostly discussed progress from the manufacturer's perspective, Simmonds (1876: 29) noted that the London Post Office Directory of 1873 listed upwards of 2,100 "Manufacturers, or Dealers, in Waste," but that this number was certainly far below the real total because it only enumerated householders and excluded many manufacturers located in the suburbs. He emphasized their beneficial role in gathering, sorting, and finding new markets for waste substances. Modern CE theorists, however, typically pay no attention to intermediaries and emphasize instead the need to (re)design products so they can be "upgraded, reused, or disassembled at end of life to access the valuable materials contained within" (Babbitt et al., 2021). Although the subject deserves more investigation, a case can be made that the world described by Simmonds and his contemporaries was one in which constant change and future beneficial developments for most people was the norm, whereas the perspective of CE proponents is much more static and less concerned about significantly improving standards of living.

## Conclusion

The predominant view among CE proponents that traditional market incentives provide little encouragement to turn polluting waste into valuable by-products is untenable and at odds with historical and present-day reality. Furthermore, CE proponents try to argue both that it represents significant opportunities for profitable efficiency gains, and that it will only happen if forced in place by government policies, which is a contradiction.

In reality the spontaneous CE nature of past market economies played an underappreciated role in delivering both economic and environmental benefits and explains in some part the long-standing failures of past predictions of environmental doom. We would be well advised to steer clear of attempts to replace the market-driven process of economic circularity with a centrally planned version.



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## Appendix 1: Organizations and Governments that Promote the Circular Economy (Selected)

**Note:** A long list of public and private organizations supportive of the circular economy concept can be found the Ellen MacArthur Foundation Network website: <https://ellenmacarthurfoundation.org/network/who-is-in-the-network>

### International alliances

GARECE (Global Alliance for Resource Efficiency and Circular Economy)

[https://ec.europa.eu/environment/international\\_issues/gacere.html](https://ec.europa.eu/environment/international_issues/gacere.html)

Note: GACERE was initiated by the European Commission and by the United Nations Environment Programme (UNEP), in coordination with the United Nations Industrial Development Organization (UNIDO).

PACE (Platform for Accelerating the Circular Economy)

<https://pacecircular.org/>

Note: PACE was created in 2018 by the World Economic Forum and is now hosted by the World Resources Institute.

African Circular Economy Alliance

<https://pacecircular.org/african-circular-economy-alliance>

### International organizations

CGRI (Circularity Gap Reporting initiative)

<https://www.circularity-gap.world/>

- Published reports (including various countries, partners and supporters)  
<https://www.circularity-gap.world/about>
- CGRI Circularity methodology  
<https://www.circularity-gap.worldmethodology>

OECD (Organisation for Economic Co-Operation and Development).

RE-CIRCLE: resource efficiency and circular economy

<https://www.oecd.org/env/waste/recircle.htm>

United Nations Environment Programme—Circularity

<https://www.unep.org/circularity>

World Economic Forum Circular Economy and Material Value Chains

<https://www.weforum.org/projects/circular-economy>

- Circular Economy for Net Zero Industry Transition  
<https://www.weforum.org/circular-economy-for-net-zero>
- PACE (Platform for Accelerating the Circular Economy)  
<https://pacecircular.org/>
- The Circularity Accelerator  
<https://thecirculars.org/>

WTO (World Trade Organization)—Trade policies for a circular economy

[https://www.wto.org/english/res\\_e/reser\\_e/ersd202010\\_e.htm](https://www.wto.org/english/res_e/reser_e/ersd202010_e.htm)

WBSCD (World Business Council for Sustainable Development)—Circular Economy

<https://www.wbcsd.org/Programs/Circular-Economy>

World Resources Institute (WRI)—PACE (Platform for Accelerating the Circular Economy)  
<https://www.wri.org/initiatives/platform-accelerating-circular-economy-pace>

### **UK-based organizations**

Chatham House—Circular economy  
<https://www.chathamhouse.org/topics/circular-economy>

Ellen MacArthur Foundation Circular Economy – Introduction  
<https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>

- Ellen MacArthur Foundation Network  
<https://ellenmacarthurfoundation.org/network/who-is-in-the-network>

RSA (Royal Society of Arts)—The Great Recovery  
<https://www.thersa.org/projects/archive/economy/the-great-recovery>

### **USA-based organizations**

BlackRock Global Funds (BGF)—Circular Economy fund  
<https://www.blackrock.com/ch/individual/en/products/310165/blackrock-circular-economy-fund>

U.S. Chamber of Commerce Foundation Sustainability and Circular Economy  
<https://www.uschamberfoundation.org/sustainability-and-circular-economy>  
 (See also Ellen MacArthur Foundation Network <https://ellenmacarthurfoundation.org/network/who-is-in-the-network>)

### **China-based organizations**

Standing Committee of the National People’s Congress (2008)—Circular Economy Promotion Law of the People’s Republic of China  
<http://www.lawinfochina.com/display.aspx?id=7025&lib=law>

Wikipedia—China’s Circular Economy  
[https://en.wikipedia.org/wiki/China%27s\\_circular\\_economy](https://en.wikipedia.org/wiki/China%27s_circular_economy)

### **European Union-based organizations**

European Commission—Circular Economy Action Plan  
[https://ec.europa.eu/environment/strategy/circular-economy-action-plan\\_en](https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en)

### **Canada-based organizations**

Government of Canada—Circular Economy  
<https://www.canada.ca/en/services/environment/conservation/sustainability/circular-economy.html>

Government of Canada—Exploring Circular Economy Initiatives  
<https://www.canada.ca/en/services/environment/conservation/sustainability/circular-economy/circular-economy-initiatives.html>

Government of British Columbia—Zero Waste and the Circular Economy  
<https://www2.gov.bc.ca/gov/content/environment/waste-management/zero-waste>

Government of Ontario—Strategy for a Waste-Free Ontario: Building the Circular Economy  
<https://www.ontario.ca/page/strategy-waste-free-ontario-building-circular-economy>

Recyc-Québec—L'économie circulaire, une priorité  
<https://www.recyc-quebec.gouv.qc.ca/entreprises-organismes/mieux-gerer/economie-circulaire/>

City of Toronto—Working Towards a Circular Economy  
<https://www.toronto.ca/services-payments/recycling-organics-garbage/long-term-waste-strategy/working-toward-a-circular-economy/>

City of Toronto, Circle Economy, and the David Suzuki Foundation (2021), *Baselining for a Circular Toronto*, Technical Memorandum #3, July 30<sup>th</sup>, Final Report  
<https://www.circle-economy.com/resources/baselining-for-a-circular-toronto>

City of Vancouver—Zero Waste: Priorities and Background  
<https://vancouver.ca/green-vancouver/zero-waste-priorities-and-background.aspx>

Smart Prosperity Institute—Building the Circular Economy  
<https://institute.smartprosperity.ca/initiatives/building-circular-economy>

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