

Identifying the Impact Potential of Early-Stage Circular Investment Opportunities

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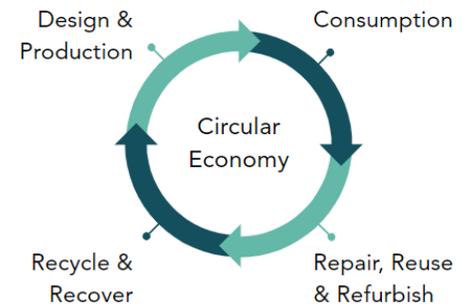


Project Background and Overview

In contrast to the linear economy, in which resources are taken from the earth, used to make products, and are later sent to landfill, the circular economy aims to minimize resource inputs and waste by closing material and energy loops. Impact investors are increasingly interested in companies that utilize circular business models due to their potential to generate both profits and environmental benefits. However, the implementation of a circular business strategy does not automatically result in an environmental benefit. Investors need to not only verify that their investment will generate financial returns, but also understand what assumptions must hold true for it to realize a net environmental benefit. Tools exist to assess environmental impact, but there are challenges when using them to assess early-stage circular companies. The Circularity Assessment Tool (CAT) designed by the CleanCapital team addresses these challenges so investors can more effectively assess potential investment opportunities during the due diligence process. The goal of The CAT is to help investors and early-stage companies better understand the potential environmental impacts of circular business models so they can make more informed decisions.

The Circular Economy

Aims to minimize resource inputs and waste by closing material and energy loops.



Challenges investors face when assessing early stage circular companies

Lack of data

Early-stage companies often do not have the resources to conduct extensive assessments such as full Life Cycle Assessments (LCAs) and may lack essential environmental data required to use existing environmental and circularity assessment tools.

Industry Heterogeneity

Circular business models can be implemented across several industries, yet many existing assessment tools are industry specific. This makes it difficult for investors to compare potential investment opportunities from different industries.

Scientific & Technical Expertise

Some existing assessment tools require specific technical knowledge which can deter investors from integrating them into the due diligence process for potential investments. Furthermore, the potential investment companies and innovations may be very specific or scientific, or simply outside the investors' realm of expertise.

How the Circularity Assessment Tool (CAT) addresses these challenges

The CAT questionnaire asks both quantitative and qualitative questions to capture both available data and supplemental descriptive information. It is vital that investors and new companies explore the environmental impacts of their operations in the early stages of growth and the CAT helps make them aware of which data is important.

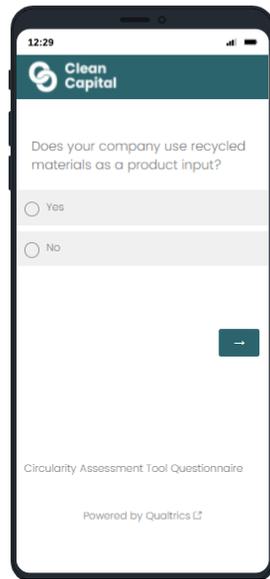
The CAT focuses on indicators common to circular business models (reduce, reuse, recycle) regardless of industry. The assumptions of each circular model are addressed by specific questions such as those focused on per-use impacts, displacement, and industry standards or averages.

The CAT is available in Qualtrics, an easy-to-use survey platform. Investors send a link and receive answers in an organized report. The research guide provides insight into how the investor can analyze, interpret, and validate the data. By addressing broader concepts common to circular business models, no industry-specific technical knowledge is required to use our tool.

The Circularity Assessment Tool

Assessment Questionnaire

- 34 Questions
- 4 Sections
 - Company Structure & Introduction
 - Displacement & Scaling
 - Circularity
 - Reuse
 - Reduce
 - Recycle
 - General Environmental Impacts



Research Guide

Provides relevant research from literature, background information, equations, and considerations investors can use to assess the data outputs from the questionnaire.

Q4a: If yes, how exactly can it be recycled and what infrastructure is required?

Answer Choice: Fill in response

Q4 determines whether or not a company is producing a recyclable product, and evaluates the infrastructure needed to successfully recycle the product. While a priority of the circular economy is designing products to minimize waste from the outset, the creation of some amount of 'end-of-pipe' waste is inevitable.

This tool specifically gathers information on the assumptions necessary for a product to be recycled. The lack of regulation surrounding use of the chasing arrows symbol (Δ) allows any product to display the icon, regardless of whether or not the product is actually recyclable in a municipal recycling program (Tabuchi & Choi-Schagrin, 2021). California SB 343, a 2021 bill estimated to come into effect in 2024, restricts use of the chasing arrows symbol to products or packaging that are considered recyclable based on the statewide criteria detailed in the bill; however, California is the first and only state to enact this type of regulation (Millar et al., 2021). Companies with verifiable claims that their products or packaging is able to be recycled in municipal programs (i.e. products that would already be in compliance with a bill such as SB 343) should be preferred over those without such verification.

The Added Value of the CAT

Understanding Displacement

In order to realize net environmental benefits, new business models must displace a product or process that has a greater negative environmental impact. Investors need to understand the minimum displacement ratio of an early-stage company to understand when in a company's growth a net environmental benefit will be achieved. The CAT questionnaire solicits information such as average industry impacts so investors can make more informed comparisons.

Testing Assumptions

The implementation of a circular business model does not automatically equate to environmental benefits. By targeting per-use impacts – impacts produced during the processes of reusing, reducing, or recycling – through the CAT questionnaire, investors are able to test assumptions of the circular business model. The CAT research guide provides information for how to analyze the collected per-use impact data to understand if a net environmental benefit is likely as an early-stage company scales.

Additional Applications

The outputs of the CAT questionnaire can be used to inform impact reporting, communicate to important stakeholders, and monitor company progress over time. The CAT is an open source tool and can be modified by investors facing similar challenges to make use of the research as well. Investors in other impact funds (water pollution, biodiversity, carbon, ESG, etc) can customize the CAT to measure what is important to them.

Acknowledgements

The team is deeply grateful to the following individuals for their insightful comments and support:

Faculty Advisor: Kelsey Jack, UCSB Bren School of Environmental Science & Management

Client: Katie Hoffman, Michael Smith, Dan Fishman, Destana Herring, Eva Wallack, Regeneration.VC

Ph.D. Advisor: Vincent Thivierge || External Advisors: Ranjit

Deshmukh, Bren School, Roland Geyer, Bren School, Reyna

Bryan, RCD Packaging Solutions, Marta Pazos, Ph.D.

