Impact investing catalyzes the infrastructure needed for circular solutions

By *Monica Puccetti* and *Angeles Toledo*

Global material extraction exceeds 106 billion tonnes annually, while recycling rates remain only 6.9%[1]. Combined with fast consumption, this creates a massive supply gap that a linear economy cannot fill. Circular infrastructure still lags behind second-life technologies, and fragmented US and EU regulations discourage investment, creating risks of asset stranding and bottlenecks. By deploying capital into circular infrastructure, investors can mitigate these risks while achieving attractive risk-adjusted returns and driving tangible solutions to real-world sustainability challenges.

The materials garbage crisis is more pressing than ever. With rising CO_2 emissions, affected biodiversity, and microplastics infiltrating our bodies, the impact is undeniable. While governments struggle with ineffective recycling policies, complex regulations, and the shortcomings of the UN Plastics treaty, investors have the power to drive change. By financing innovative solutions, they can achieve attractive risk-adjusted returns while making a significant difference.

In this article, we explain why circularity is compelling and why specialist investors can make this a success.

What are the key challenges in today's global waste and materials landscape, and why does this matter now more than ever?

The world extracts over 106 billion tonnes of materials annually, yet recycles just 6.9%[2], creating a massive gap. Even as second-life technologies proliferate, hurdles are preventing progress towards circularity:

- Low recycling rates across materials streams;
- Chronical lack of capital for scaling recycling technologies;
- Fragmented, complex regulations – varying EPR schemes[3] and recycled content mandates – undermine investor confidence;
- Lack of global consensus, as seen in the stalled UN Plastic Treaty negotiations.

Resource strain, infrastructure gaps, and policy fragmentation are accelerating the urgency for change. Within five years, the EU's 2030 Circular Economy Plan and tightening US mandates, despite the temporary anti-ESG wave, will drive up compliance costs and boost demand for recycled inputs. The resulting stranded fossil assets may facilitate a more sustainable materials economy, while mitigating supply chain risks. Investors ignoring climate risk will face a growing climate-risk premium, which penalizes carbon-intensive strategies through higher capital costs, reduced valuations, and lower future returns overall.[4]

Why is circularity a compelling investment proposition to these challenges?

Circularity replaces the linear 'take-make-dispose' model with systems that preserve material value, cut environmental impact and strengthen resilience. Additionally, plastics pollution represents a 'grave, growing, and under-recognized danger to human and planetary health'[5] due to the contamination in our bodies. Material production drives roughly 30% of global GHG emissions[6]. Closing the loops on plastics, composites, and metals could save up to 3.7 Gt CO_2 emissions annually[7] by 2050, surpassing the EU's 2022 emissions[8].

For investors, this translates into powerful vectors of value:

- **Tangible impact** by solving sustainability challenges while avoiding negative effects to health, CO_2 and biodiversity loss;
- **Decarbonization upside** via lower lifecycle emissions;
- **Investment opportunities** in the materials transition innovation, technologies and infrastructure plus revenue diversification;
- **Resilience and optionality** from raw-material price spikes, trade disputes and resource shortages.

As disasters intensify, stalled circularity demands urgent action to build an economy serving people and planet: resilient, nature-positive, and prosperous.

How can impact-driven investment catalyze systemic change in materials and manufacturing?

Investment in climate solutions is an institutional imperative to accelerate decarbonization and mitigate risks to communities, businesses, and livelihoods. Yet, inconsistent methodologies across asset classes hinder financing. Specialist impact fund managers bridge this gap with patient growth-equity capital, absorbing early-stage risk for first-of-a-kind second-life technologies for the circular economy. With deep sector expertise, they identify disruptive innovations, channel capital to those with greatest potential, and de-risk projects by aggregating demand and aligning stakeholders. Strategic partners such as consumer brands and petrochemical firms secure forward-purchase agreements, underwrite revenues, and validate circular feedstocks as viable long-term inputs. This collaborative model fosters

systemic change, market creation, and attractive risk-adjusted returns. By deploying capital with patience, precision, and demand focus, specialist impact investors can transform isolated demonstrations into scalable, circular manufacturing systems, laying the groundwork for large-scale institutional investment.

What concrete steps can be taken to build and de-risk the infrastructure needed to scale circular solutions?

To build and de-risk the infrastructure needed to scale circular solutions, we must create projects that are bankable and resilient. This requires locking in demand, mobilizing blended finance, fostering deep collaboration, and embedding the right governance and talent from day one. Concretely:

- **Guarantee demand:** Secure multi-year offtake agreements with major brands for recycled inputs;
- **Mobilize catalytic capital through public-private consortia:** Use public-private consortia to co-fund demonstration sites. Blended finance reduces early risk, unlocks debt, scales technology, and builds local skills;
- **Advocacy:** As market power shifts, connecting players across the value chain strengthens supply chains and accelerates commercialization;
- **Embed hands-on governance:** Deploy operational-excellence frameworks and real-time performance monitoring to optimize performance and ensure environmental standards;
- **Sustain long-term engagement:** Deploy hands-on teams – supported by tech experts – to guide execution, manage risk, and scale best practices.

Which markets are adopting circular materials, and how do they compare to virgin alternatives in quality, cost, and sustainability?

Massive resource extraction and rapid consumption have created a gap the linear economy can't bridge. All materials must and can adopt some degree of circularity to overcome constraints. In this context, large loops (such as monomer recycling) are complex, time-consuming and regulation-dependent, while small loops (retaining product value by keeping items whole), are simpler and easier to implement. Both are essential for shifting towards a sustainable, de-risked economy. Ultimately, the success of new materials is based on cost-effective structures, competitive pricing, and technical specifications aligned with market needs.

As an investor, you're looking for solutions that either:

- are inherently cost-efficient, or
- present an opportunity to build scalable and investable businesses around them.

The industries affected are vast, presenting both significant challenges and transformative opportunities. Plastics are just the beginning, catalyzing a broader shift across the world's base industries, where replicable solutions can drive widespread impact.

Why is now the pivotal moment for institutional investors to partner with impact investors and accelerate the global transition to circular materials?

We are at a rare inflection point: technology is ready, regulation is tightening, and demand for circularity is accelerating. Within five years, recycled-content mandates will come into force, compliance costs will rise, and pressure on virgin materials will intensify. Impact investors with specialist expertise, patient capital, and proven deal-structuring capabilities can pave the way for institutional investors to scale the required circular infrastructure. Circularity of material has moved beyond proof of concept – the time to move from pilot to industrial scale is now. Only institutional investors have the resources to deliver lasting results. Early movers can secure strong returns, future-proof supply chains and lead the shift to sustainable production. In an era defined by decarbonization and resource scarcity, combining institutional scale with impact agility is the fastest path to industrial circularity - and lasting competitive advantage. ■

1 https://www.circularity-gap.world/updates-collection/global-circularity-rate-fell-to-6-9---despite-growing-recycling?utm_source
2 https://www.circularity-gap.world/updates-collection/global-circularity-rate-fell-to-6-9---despite-growing-recycling?utm_source
3 Policy tool that extends the producer's financial and/or operational responsibility for a product.
4 Proactive investment in resilience protects asset value, creditworthiness, and insurability while unlocking economic benefits (e.g. every $1B spent on coastal flood adaptation avoids $14B in damages). Source: https://www.iigcc.org/insights/physical-climate-risk-front-centre-investors
5 https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01447-3/abstract
6 https://www.breakthroughenergy.org/our-approach/grand-challenges/?utm_source
7 https://www.ellenmacarthurfoundation.org/completing-the-picture
8 https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/global-greenhouse-gas-emissions.html

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SUMMARY

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Circularity of material has moved beyond proof of concept – the time to move from pilot to industrial scale is now.

Institutional investors have the resources to deliver lasting results.

Early movers can secure good risk-adjusted returns, future-proof supply chains and lead the shift to sustainable production.

PHOTOS: ARCHIVE INFINITY RECYCLING, COR SALVERIUS FOTOGRAFIE