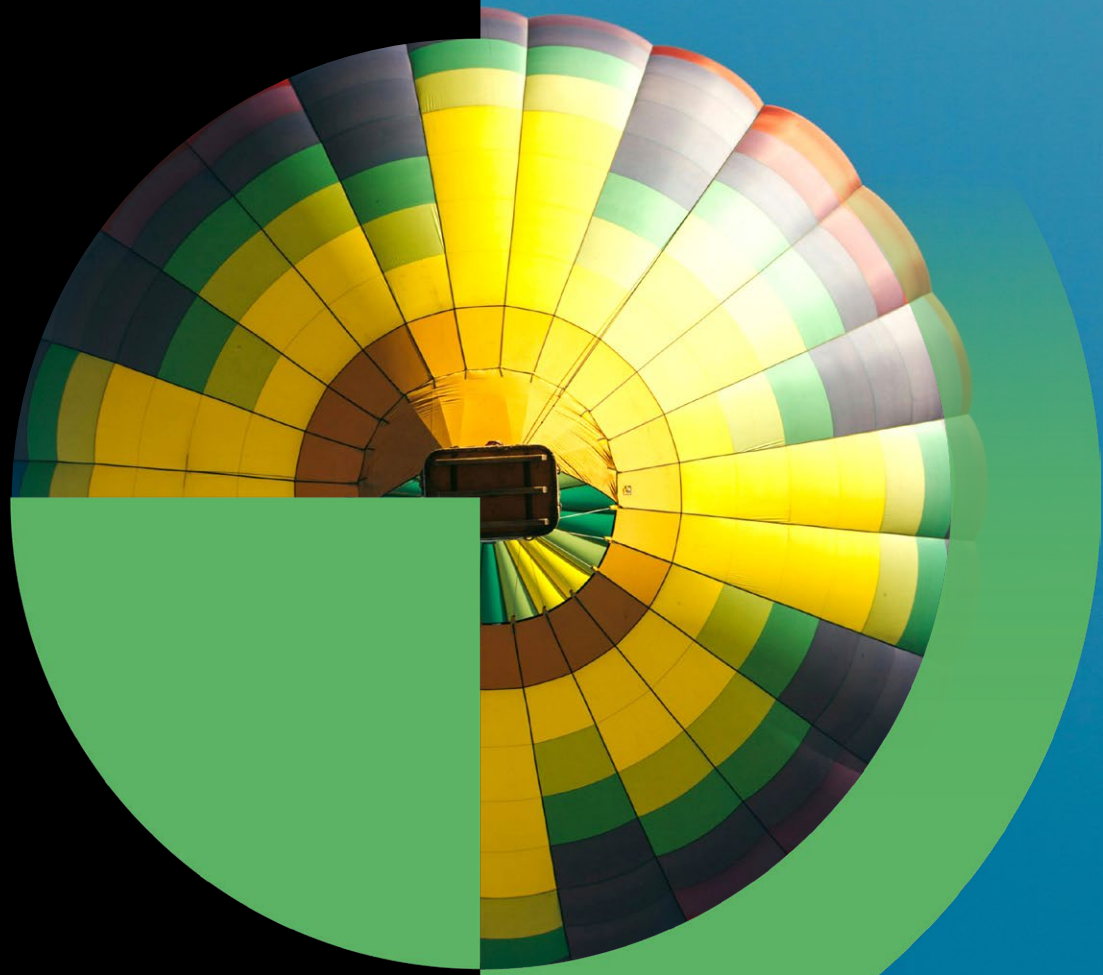
CIRCULAR REPUBLIC

BY UNTERNEHMER TUM

Circular Economy Start-up Landscape 2025



Development and Trends in the European Market

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Executive Summary

- **Circular economy has become a resilience strategy:** Crises like COVID-19, the war in Ukraine, and climate-related disruptions have exposed the vulnerabilities of global supply chains. Circular business models are now recognized as strategic tools for strengthening industrial resilience.
- **Circular funding defies the global downwards trend:** While total start-up funding in Europe dropped from $141B (2021) to $66.8B (2023), circular start-up investment reached a record $9.4B, now accounting for 14.07% of all European start-up investment.
- **Europe leads in circular funding:** Europe attracted 48.2% of global circular start-up funding in 2023.
- **More than 2,500 start-ups across Europe:** The European landscape includes over 2,500 active circular economy start-ups, with the UK, Germany, and France leading in absolute terms. Nordic and Baltic Countries Lead per capita, outperforming larger economies like Germany or France on a relative basis.
- **AI adoption is still limited, but Germany is leading:** 31% of Europe's AI start-ups in the circular economy are founded in Germany. Only 4.3% of circular start-ups have a business model that heavily relies on artificial intelligence.
- **Value chain gaps remain significant**: Start-up activity is concentrated in bio-based inputs and front-end design. Downstream functions critical for loop closure – like sorting, disassembly, and material refinement – make up less than 2% of start-up activity.
- **Critical raw material start-ups in Europe attract high funding:** Investors show confidence in circular supply chains for critical materials, backing sectors like batteries, energy, and mobility that occupy a Blue Ocean space – marked by low competition and high capital – while other industries remain crowded or largely untapped.
- **Start-up and enterprise collaboration creates impact:** Complementary strengths make for strong partnerships. Start-ups gain credibility and access to markets, while corporates tap into agility and fresh thinking.
- **Build, partner, invest, buy:** Build solutions internally or collaborate with the growing ecosystem of circular innovators. Partnerships allow faster access to expertise and speed up implementation.

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A Changing World: Europe Needs to Stand Tall

Europe's Silent Circularity Revolution: Fragile Value Chains, and the Rise of Nature Awareness Meet an Untapped Pool of Talents

Start-ups have always been at the heart of economic revolutions. Giants of today's digital economy began as garage ventures. Their rise demonstrates how transformative potential often starts at the margins. This report highlights that Europe is entering a phase of industrial change. Three intersecting trends are steadily promoting a broader shift toward circularity: The need to address fragile supply chains and resource scarcity, the rise of nature awareness and an untapped pool of top-talents.

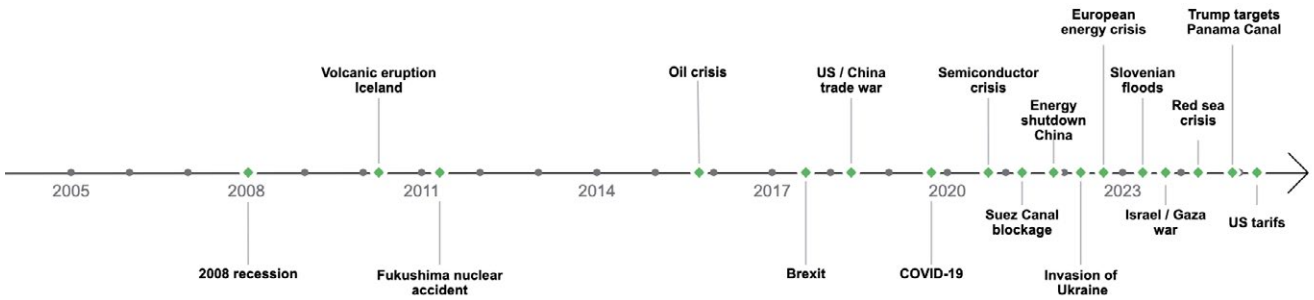

Figure 1: Frequency of global crises that disrupted European supply chains. Source: [1]

Circular Economy Is No Longer (Just) a Sustainability Game – It's a Resilience Game

Globalization has created highly efficient and deeply interconnected supply chains. However, recent crises such as COVID-19, the war in Ukraine, disruptions in the Red Sea, and climate-related disasters have exposed their vulnerability. Complex global networks are increasingly fragile and subject to cascading risks. The consequences are both financial and operational: rising costs, production delays, lost revenues, and reputational damage. Major global disruptions now occur approximately every 1.4 years, affecting entire industries and national economies. Europe, heavily reliant on imported critical raw materials, is re-evaluating the resilience of its industrial base. A growing realization is setting in: closed-loop systems and circular business models are not just environmentally responsible – they are economically strategic [1].

Awareness for the Biodiversity Crisis Is Accelerating – Circular Economy Is an Essential Part of the Solution

Second, beyond the climate crisis, public, academic and corporate awareness is rapidly expanding to include biodiversity loss and ecosystem degradation. From depleted soils to shrinking insect populations, the costs of extractive growth are becoming painfully clear. This ecological awareness is now influencing investor priorities, regulatory frameworks, and consumer expectations. Nature is becoming an economic factor. The economy is beginning to acknowledge that intact ecosystems are not only valuable in themselves, but also provide essential services such as flood protection, soil regeneration, and water retention.

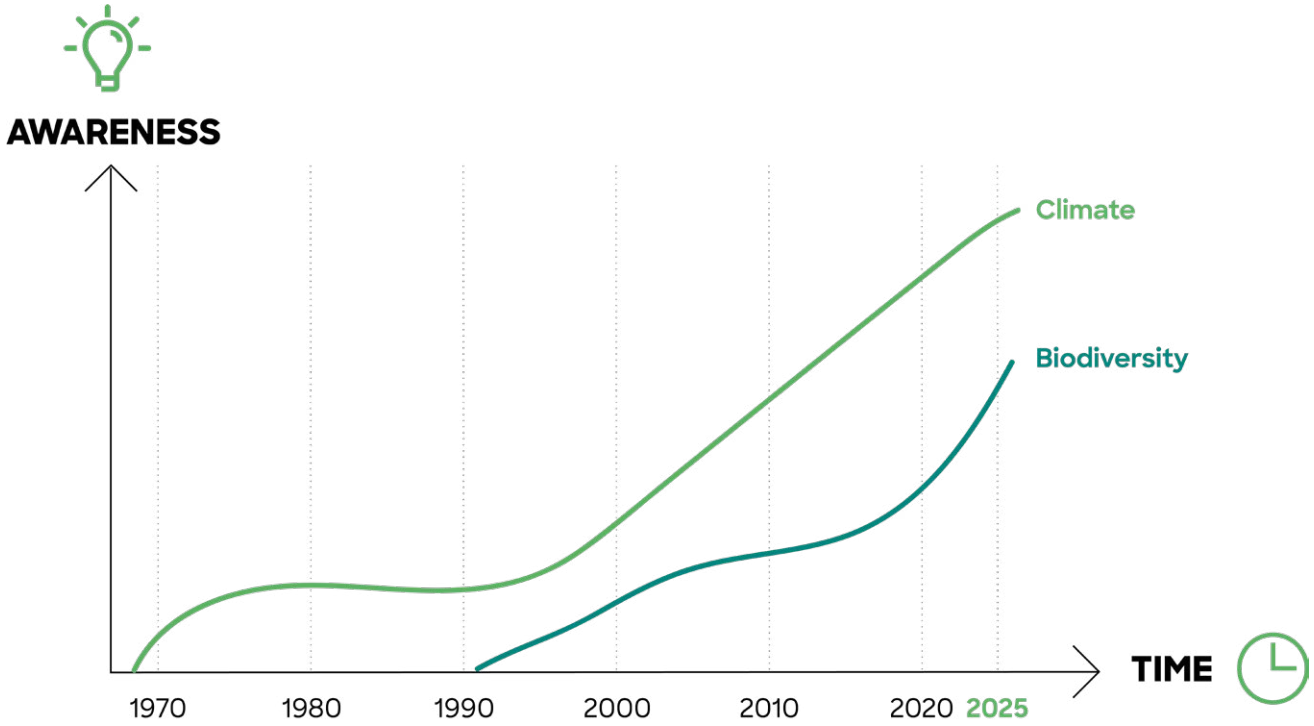

Figure 2: Approximate Development of Awareness for Nature & Biodiversity. Source: based on [2]

Untapped Talent: How the Circular Economy Attracts Overlooked Talent Pools in Europe

Third, these challenges coincide with the emergence of a historically unique asset: a generation of highly educated, purpose-driven talent. The circular economy is also a gateway for overlooked talent pools – particularly female founders and highly skilled individuals from abroad. Data from the CIRCULAR REPUBLIC start-up database indicates that 30% of circular economy start-ups in Europe are (co-)founded by women. This figure represents more than double the proportion of female founders observed in other overarching sectors such as deeptech or artificial intelligence [3]. At the same time, a reverse brain-drain effect is starting to draw top-tier talent from the United States into Europe's innovation ecosystem, enriching it with international expertise and perspective [4]. Start-ups are increasingly emerging as inclusive, purpose-driven environments that appeal to a broad spectrum of entrepreneurial talent – particularly in the space of circular economy.

The Circular Economy Start-up Landscape Report 2025 captures these dynamics: it analyzes current investment trends and developments across Europe, identifies strengths and gaps along the value chain, and highlights one of the key factors for start-up success: partnerships between start-ups and enterprises to collaboratively drive circular innovation.

State of the Landscape: The Bigger Picture

Breaking the Trend: Circular Economy Funding in Europe Keeps Growing – In Spite of Crises, or Because of Them?

While global start-up funding has sharply declined since its 2021 peak, circular economy ventures in Europe are defying the trend. In 2023, total start-up funding across the continent fell from $141 billion in 2021 to just $66.8 billion. This significant drop reflects broader economic uncertainty, inflation, and geopolitical tensions.

Yet against this backdrop, funding for circular economy solutions reached an all-time high of nearly $10 billion in 2023 in Europe. Remarkably, 14.1% of all European start-up investments in 2023 went to companies focused on circular business models, marking an unprecedented share.

This growth signals a shift in investor priorities. Rather than retreating in the face of crisis, capital is flowing into solutions that address the systemic roots of many of today's challenges: resource scarcity, supply chain fragility, and environmental degradation. In this light, the rise in circular economy funding is not occurring despite the crises; it may in fact be a response to them. As traditional growth models face increasing pressure, circular innovations are emerging as both economically attractive and strategically resilient. The surge in funding suggests that investors are placing long-term bets on a future where sustainability, profitability and resilience go hand in hand.

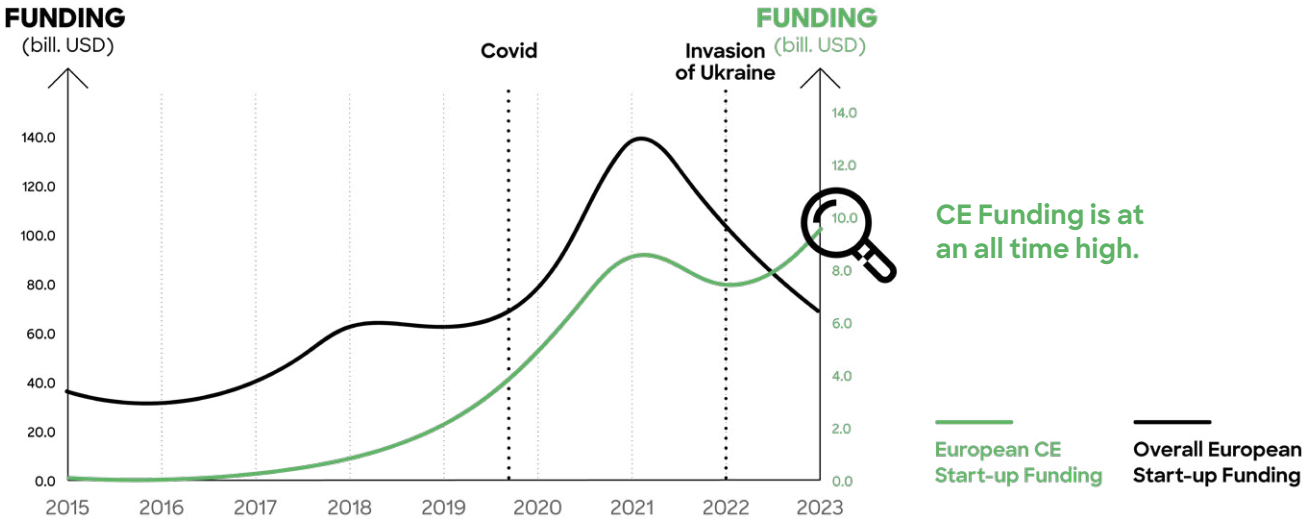

Figure 3: Comparison of European Funding for Circular Economy and Regular Start-ups. Source: CE data: Net Zero Insights (as of Feb 24, 2025); non-CE data: Tracxn (as of Apr 3, 2025); includes start-ups founded between 2015-2023.

Europe as Global Circular Economy Powerhouse: European Investments in Circularity at ~50% of Global CE Start-Up Funding

In 2023, Europe established itself as the primary hub for circular economy start-up investment, attracting 48.2% of global circular economy start-up funding. Of the $19.5 billion invested globally in circular economy ventures last year, $9.4 billion flowed into European start-ups.
Europe's strong positon in circular economy innovation is supported by a policy environment that favors sustainable business models, driven by initiatives like the Green Deal, the Circular Economy Action Plan, and the Critical Raw Materials Act. Although regions like North America and Asia remain influential, Europe's substantial share of global funding reflects a more systemic integration of circularity into venture capital and industrial policy.

The Number of Deals Closed Annually in Europe is Constantly Rising Over the Last Years

Despite global funding challenges, circular economy start-up deals in Europe are steadily increasing. While equity remains dominant, Europe's funding mix is diversifying, with grants and debt playing larger roles - especially post-COVID. Globally, equity and debt funding have declined since 2021, reflecting greater caution from investors. Europe, however, has remained resilient, thanks to strong public funding. As founders increasingly blend equity, debt, and grants, Europe may soon see the rise of the "grantpreneur."

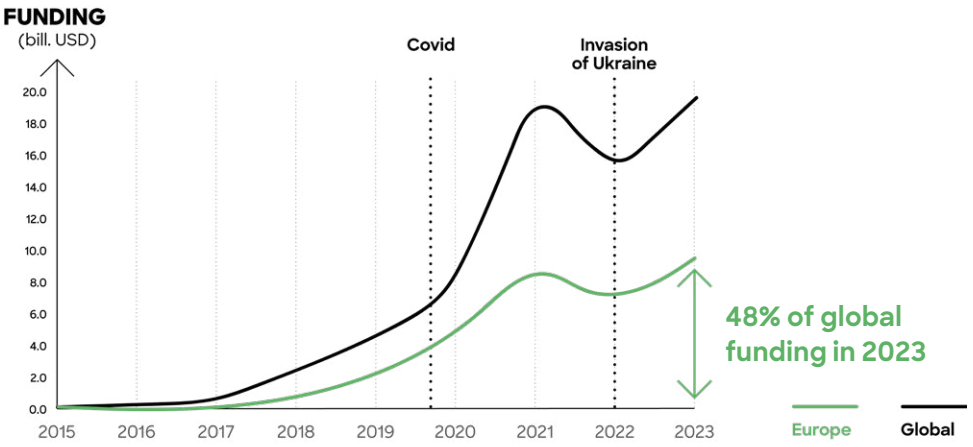

Figure 4: Comparison of European and Global Funding for Circular Economy Start-ups. Source: Net Zero Insights (as of Feb 24, 2025); includes start-ups founded between 2015-2023.

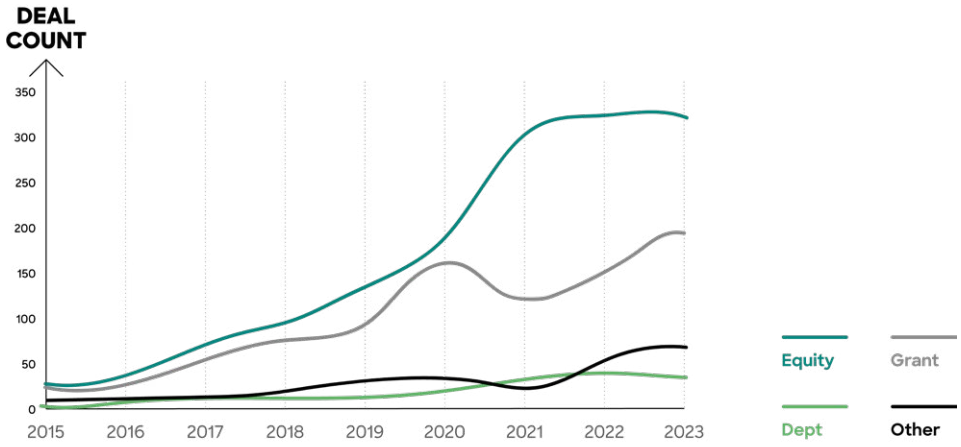

Figure 5: Number of deal counts for circular economy start-ups in Europe split according to different funding types. Source: Net Zero Insights (as of Feb 24, 2025); includes start-ups founded between 2015-2023.

Highlights From the European Circular Economy Start-Up Landscape

CIRCULAR REPUBLIC

BY UNTERNEHMERTUM

European Spotlight Overview

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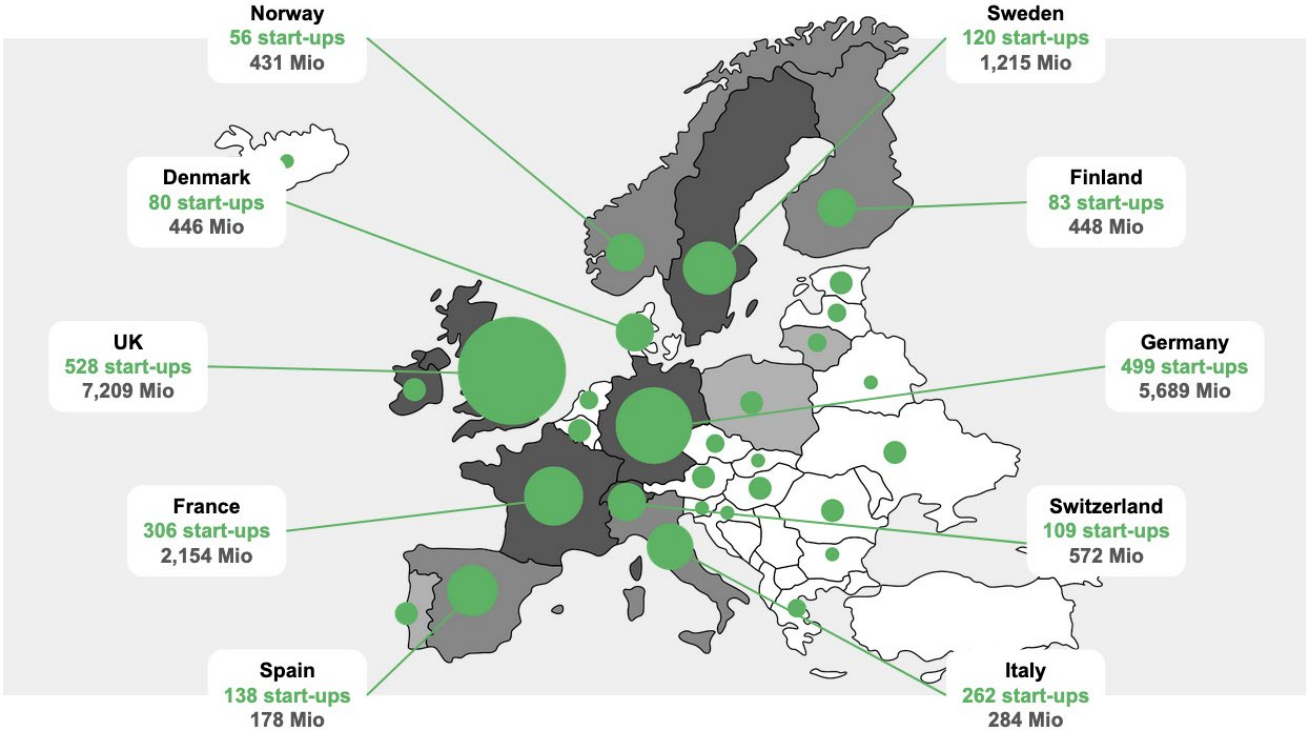
More Than 2500: Circular Economy Start-Ups are Thriving all Across Europe

Circular economy start-ups are thriving across Europe, with more than 2,500 ventures active today. The strongest players are concentrated in Central and Northern Europe as well as the United Kingdom. These regions lead in both the number of start-ups and the overall funding volumes. Southern Europe is developing rapidly, showing strong momentum and increased engagement in circular innovation. In contrast, Eastern Europe still holds a large amount of untapped potential. While fewer start-ups are currently active there, the region offers room for significant growth in the future. Overall, the European landscape is expanding.



The European landscape is expanding.

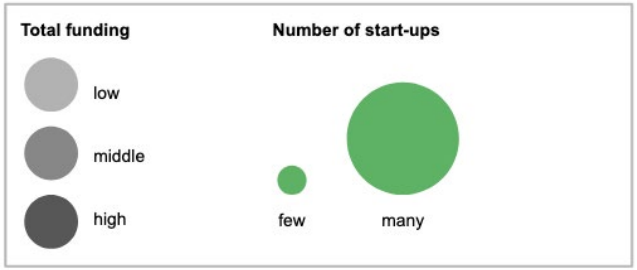


Figure 6: Overview of number of circular start-ups and total accumulated circular economy funding in Europe.
Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; includes statistical outliers.

Circular Economy Power Houses in Europe: UK, Germany and France Lead the Field

Between 2014 and 2024, the United Kingdom, Germany, and France emerged as the clear leaders in Europe's circular economy start-up landscape – both in terms of the number of ventures founded and total investment received. The United Kingdom leads with 528 start-ups and $658.3 million in funding, followed by Germany with 499 start-ups and $510.2 million, and France with 306 start-ups and $524.3 million.

Countries like Sweden, Finland, and Switzerland show strong capital intensity relative to their size. While countries like Italy (262 start-ups, $88.6 million), Spain (138 start-ups, $86 million), and Sweden (120 start-ups, $233.5 million) show a healthy balance between entrepreneurial activity and funding, some standout dynamics emerge among mid-sized ecosystems. Switzerland, for instance, with 109 start-ups, has raised $154.3 million, placing it well above average in terms of capital per start-up. Similarly, Finland, with 83 start-ups, has attracted $162.2 million, reflecting strong investor confidence despite smaller absolute numbers. In sum, the UK, Germany, and France lead the field, but unlocking circular innovation across the continent requires broader investment support and regional integration.

528 start-ups
$658.3 m

499 start-ups
$510.2 m

306 start-ups
$524.3 m

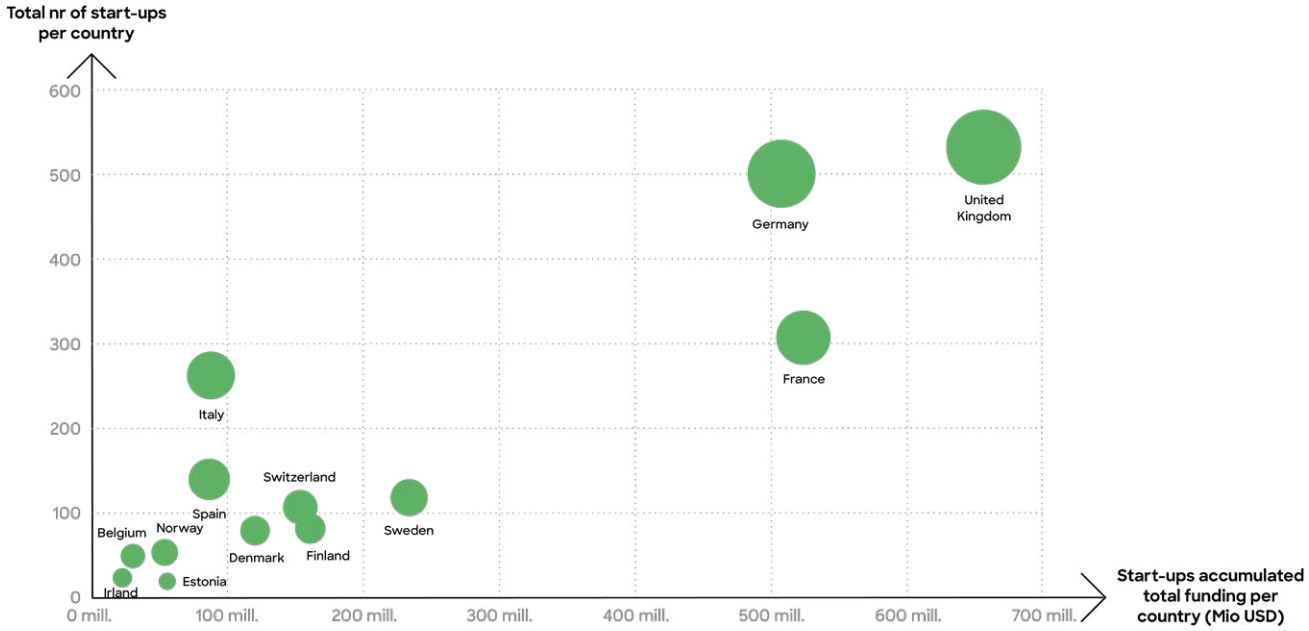


Figure 7: Overview of number of circular start-ups and total accumulated circular economy funding per country. Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; excludes outliers (start-ups with funding >21,000,000 USD); Size circles indicates total nr of start-ups per country.

Beyond the Powerhouses: Nordic & Baltic Countries Rise as the Hidden Stars of Circularity

Nordic and Baltic countries lead Europe in circular economy (CE) activity per capita, outperforming larger nations in start-up density and funding. Estonia tops the list with 16 CE start-ups per million people and $40 in funding per capita. Finland follows with 15 start-ups and $29 per capita, driven by a strong innovation ecosystem. Denmark, Switzerland, and Sweden also perform well, with over 13, 11.3, and 9.4 start-ups per million and per capita funding between $17–$22. Even Iceland and Norway outperform major economies on a per capita basis. In contrast, the UK, Germany, and France trail behind, with 7.7, 6, and 4.5 start-ups per million, respectively. These results highlight the efficiency and innovation density of smaller Northern European ecosystems, powered by strong policy, digital infrastructure, education, and sustainability culture.

16 start-ups per m people
$40 million per capita

15 start-ups per m people
$29 million per capita

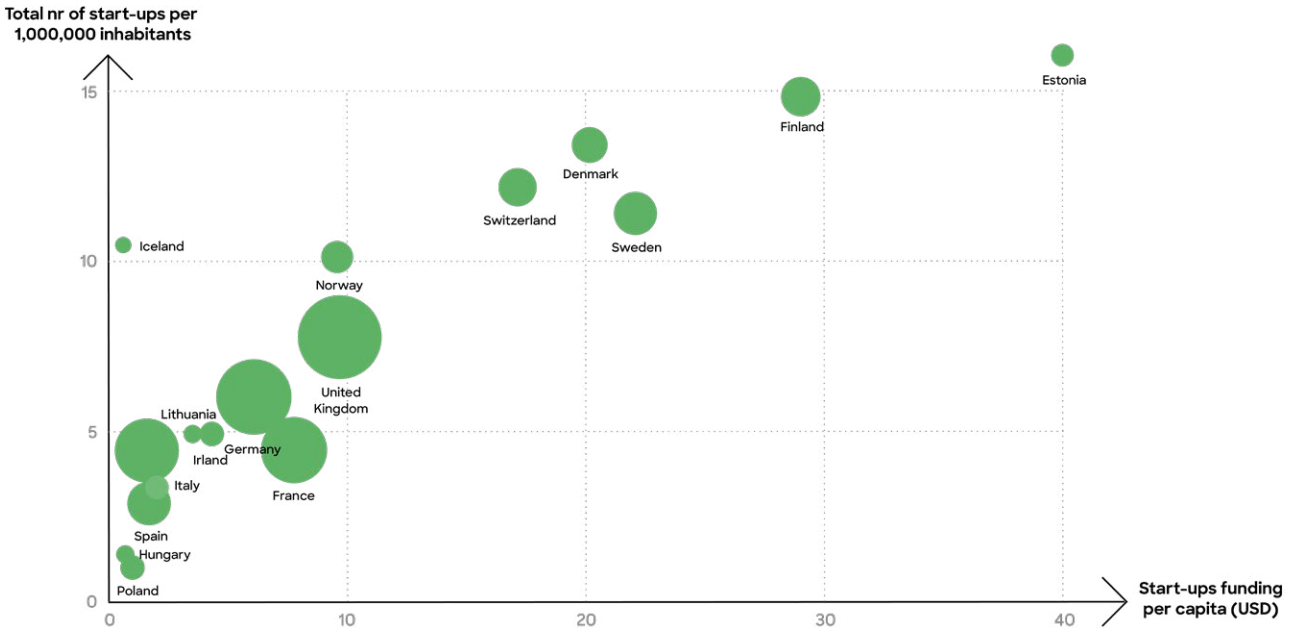
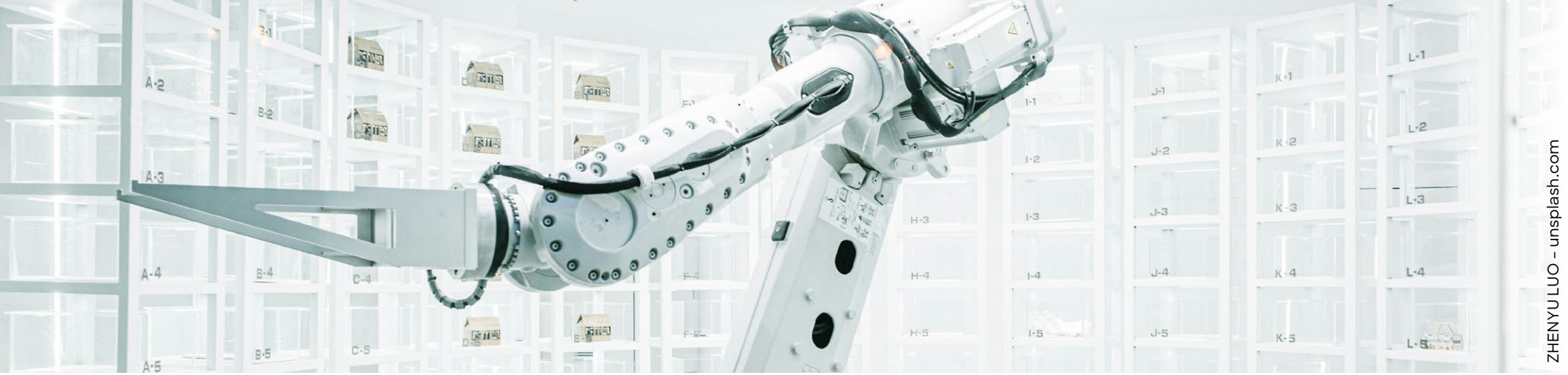


Figure 8: Overview of number of circular start-ups per million inhabitants and total accumulated circular economy funding per capita. Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; excludes outliers (start-ups with funding >21,000,000 USD); Size circles indicates total nr. of start-ups per country.

Europe's Circular Start-Up Hotspots Share a Formula: Excellent Research, Strong Industry, and Powerful Connectors

Across Europe, several regions have emerged as key hubs for circular economy start-ups, driven by a shared set of enabling conditions. These include world-class research institutions that produce technological expertise and a steady talent pipeline, forming the backbone for innovation and entrepreneurial activity. Established industries in these regions actively collaborate with innovators, offering infrastructure, real-world challenges, and market access essential for scaling circular solutions beyond the prototype stage. Equally important are intermediary actors – such as incubators, innovation agencies, and ecosystem orchestrators – that connect start-ups with corporates, funding, and strategic partners. By fostering trust, visibility, and cross-sector collaboration, these connectors accelerate the development and implementation of circular business models.

Figure 9: Exemplary overview of relevant universities, industry players and connectors.



ZHENYU LUO – unsplash.com

Germany Takes the Lead in AI for Circular Economy – Yet the Real Potential is Still Untapped

Artificial Intelligence (AI) is emerging as a powerful enabler in the circular economy, offering new ways to optimize resource flows, improve transparency, and support smart systems across value chains. While still in early stages, recent data shows that Germany leads Europe in applying AI to circularity challenges.

Of the 109 European circular economy start-ups using AI and data analytics for resource efficiency, Germany accounts for 34, or 31.2%. This reflects Germany's strong position at the intersection of industrial innovation and digital technology. Nonetheless, AI remains largely underutilized in the circular start-up landscape. Only 4.3% of all 2,525 European start-ups apply AI as the essential element of their business model. Most activity centers around hardware-focused fields. While a strong hardware focus is indispensable for a functioning circular economy. AI is a powerful digital enabler along the entire value chain.

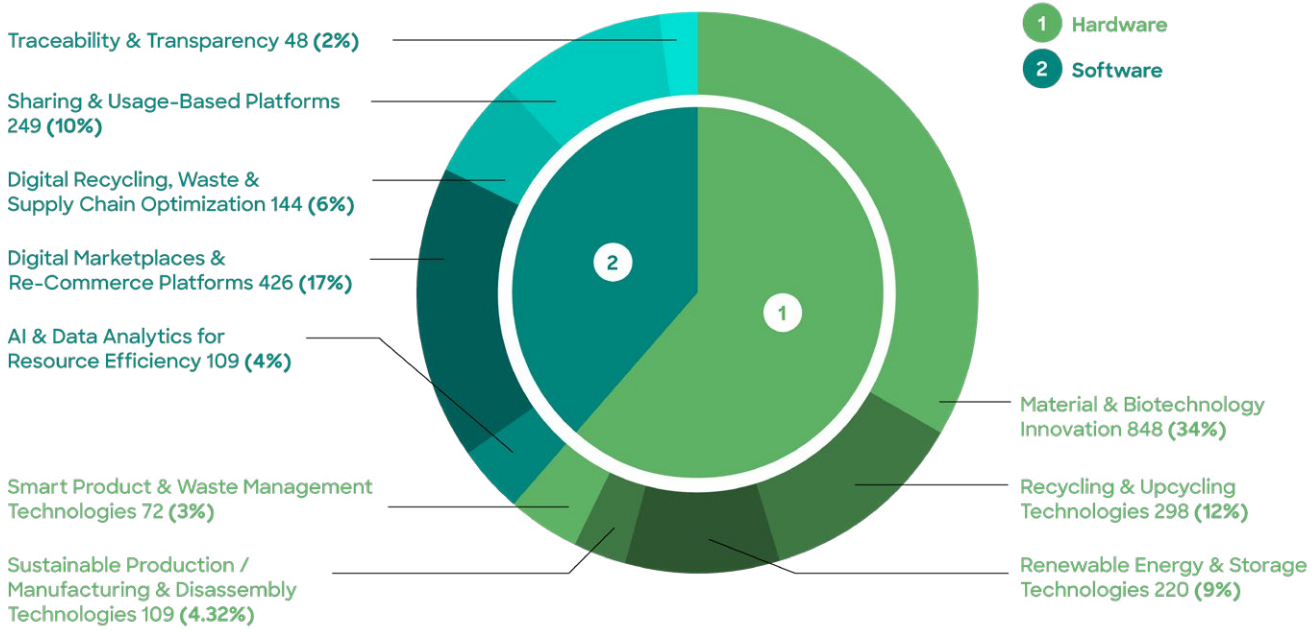


Figure 10: Overview of core technologies employed by start-ups. Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; includes outliers.

Looking at the Value Chain: There is a Strong Focus on Bio-Based Inputs While Crucial Steps to Close Material Loops are Left Out

An analysis of circular economy start-ups across Europe reveals a clear imbalance in value chain coverage. While innovation is thriving in certain areas, key steps essential to closing material loops remain significantly underrepresented.

The strongest focus lies on bio-based and biodegradable inputs, with 687 start-ups – 27.2% of the total – dedicated to this upstream intervention. This reflects a strong interest in renewable material substitution and biodegradable alternatives, aligning with rising environmental awareness and policy incentives. Similarly, product utilization (18.1%) and design/product development (8.6%) are also well-represented, indicating a focus on front-end solutions that extend product lifetimes or enable more sustainable consumption.

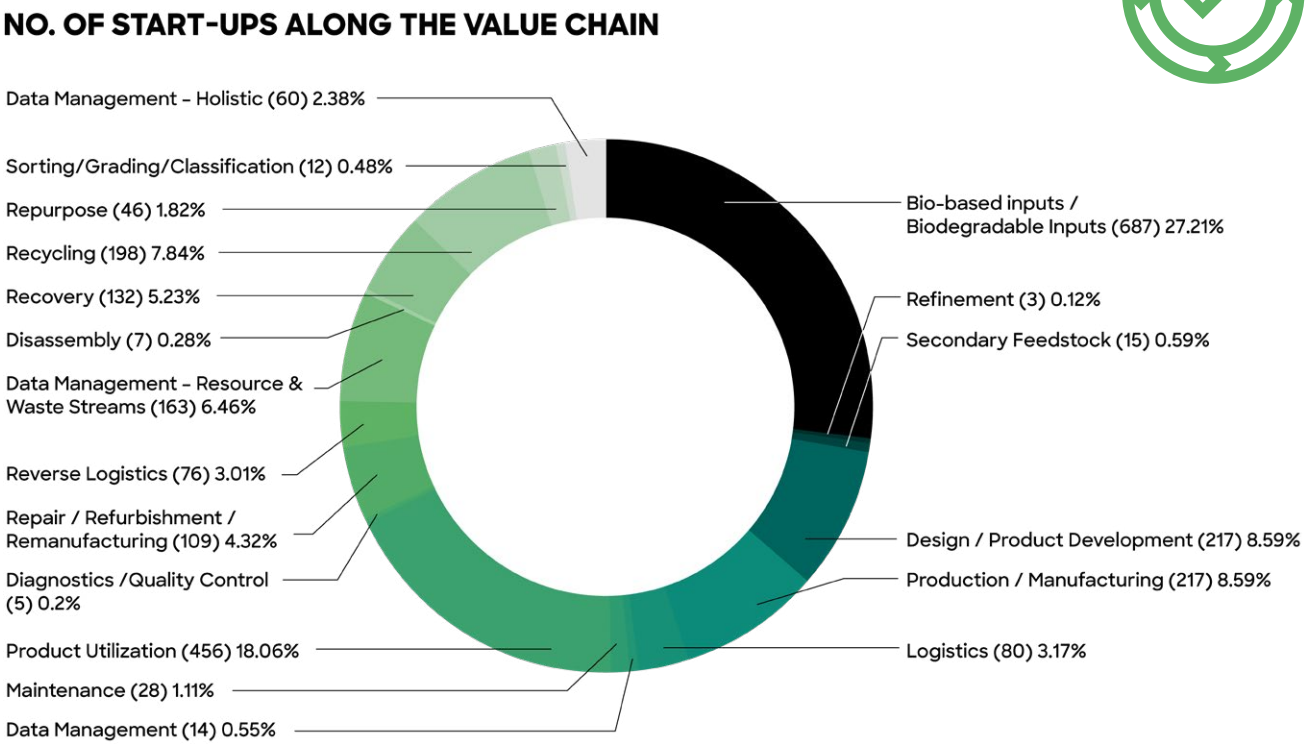
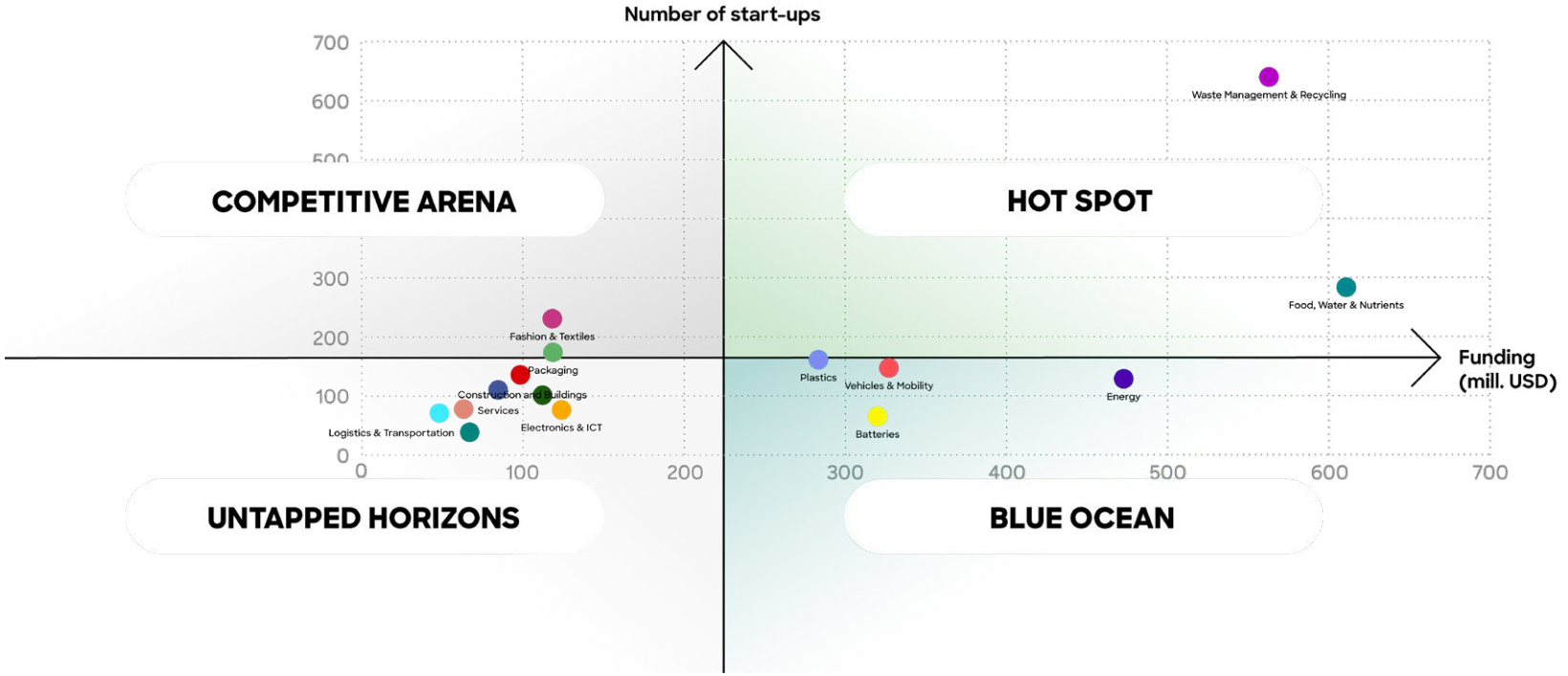


Figure 11: Percentage of start-ups active in different steps along the value chain. Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; includes outliers.

However, downstream activities critical for loop closure – such as disassembly (0.3%), refinement (0.1%), sorting (0.5%), and secondary feedstock use (0.6%) – are severely underdeveloped. These stages are essential for enabling high-quality material recovery, yet collectively account for less than 2% of start-up activity. Similarly, repair, refurbishment, and remanufacturing, while more visible, still only comprise 4.3% of ventures. The data also shows modest engagement in recycling (7.8%), reverse logistics (3.0%), and maintenance (1.1%) – all vital enablers of circular flows. Without stronger investment and innovation at these stages, materials will continue to leak from the system. This is a strategic gap. Europe's established industries, especially in manufacturing, mobility, and heavy materials, depend on high-quality material recovery and reintegration. Without innovation in the back-end of the loop, circular models remain incomplete and Europe risks missing a key opportunity to future-proof its industrial base.

Industry Analysis: Critical Raw Material Start-Ups Face Little Competition and Attract Serious Capital

An industry-level analysis of Europe's circular economy start-up landscape reveals clear patterns of capital flow and competition. By mapping sectors against two benchmarks (the average of total accumulated funding and average number of start-ups per industry) we can identify four quadrants: *Hotspots*, *Competitive Arena*, *Blue Oceans*, and *Untapped Horizons*.



HOT SPOT

High number of start-ups, high funding

COMPETITIVE ARENA

High number of start-ups, lower funding

BLUE OCEAN

Lower number of start-ups, high funding

UNTAPPED HORIZONS

Lower number of start-ups, lower funding

Figure 12: Number of start-ups start-ups and average funding per industry. Source: CIRCULAR REPUBLIC database; includes start-ups founded between 2014-2024; excludes outliers (according to each industry's IQR); Quadrant boundaries: horizontal – average accumulated total funding per industry: 226 mill. USD, vertical – average no. of start-ups per industry: 161.

Sectors tied to critical raw materials stand out clearly in the Blue Ocean quadrant. Start-ups in batteries, energy, and vehicles & mobility operate in environments with relatively few players but attract disproportionately high levels of funding. For example, the battery sector includes just 63 start-ups but has raised over $322 million, while the energy sector, with 130 ventures, has secured $471 million. Vehicles & mobility also stands out, combining 145 start-ups with over $324 million in capital. These figures reflect strong investor confidence and the strategic relevance of raw material recovery and circular supply chains. In contrast, industries such as fashion & textiles and packaging fall into the Competitive Arena – showing high start-up activity but significantly lower capital allocation. Here, competition is dense, and funding is more thinly distributed, making it harder for new entrants to stand out. Meanwhile, food, water & nutrients and waste management & recycling emerge as Hotspots. These sectors lead in both the number of ventures and total funding, with each attracting over half a billion USD. Their scale signals market maturity and strong public and policy support, but also higher saturation. At the other end of the spectrum, sectors like logistics, retail, and services remain underdeveloped, with few start-ups and limited funding. These Untapped Horizons may represent areas of future opportunity but currently lag behind in circular innovation.

Battery Sector

63 start-ups
>$322 m

Energy Sector

130 start-ups
$471 m

Vehicles & Mobility

145 start-ups
$324 m

Kevin Grieve - unsplash.com

Partnerships and Investments

Presented by better ventures

+100
active direct investors

100%
like-minded entrepreneurs

+70
successful companies built

+35
industry backgrounds

+30%
active female angels

+900
previous start-up investments

better VENTURES

Uniting Europe's leading impact entrepreneurs – to scale solutions that matter.

Backing 52 impact start-ups for people and planet, with Circularity as a core investment vertical.

Access and intelligence that not even the best early stage investor can compete with.

Not a fund.
Not an agency.

> "**Start-up collaboration isn't an experiment anymore. It's a survival strategy.**"
>
> – **Pascal Finette**
> Singularity University

In an increasingly complex and resource-constrained economy, collaboration with start-ups is becoming an important strategy for corporate innovation; particularly in the circular economy. Start-ups bring speed, adaptability, and fresh perspectives, while established companies offer scale, infrastructure, and capital. When combined, these strengths can lead to impactful, scalable solutions. Beyond technology and market access, such partnerships also foster cultural exchange and support the shift toward more sustainable business models. As circular innovation gains momentum, proactive collaboration may offer companies a competitive edge in aligning growth with environmental goals.

To all Large Enterprises: Are You Already Part of the Solution?

In the context of circular transformation, companies face a strategic choice: to advance proactively or risk falling behind. For those already on the path, the priority is to scale and institutionalize effective practices. For others, the key question is whether to build internal capabilities or collaborate with those already driving innovation, such as start-ups. While internal development offers greater control, it is often time consuming and resource intensive. In contrast, collaborating with start-ups can provide faster access to specialized knowledge, novel approaches, and greater adaptability. These partnerships may, over time, develop into investment or acquisition opportunities. Start-ups and established companies bring complementary strengths. Start-ups offer agility and deep domain expertise, while corporations contribute scale, infrastructure, and market access. Combining these capabilities can significantly accelerate progress toward circular innovation. Instead of waiting for perfect solutions, early engagement and joint development can create long-term value for both partners and contribute meaningfully to sustainability goals.

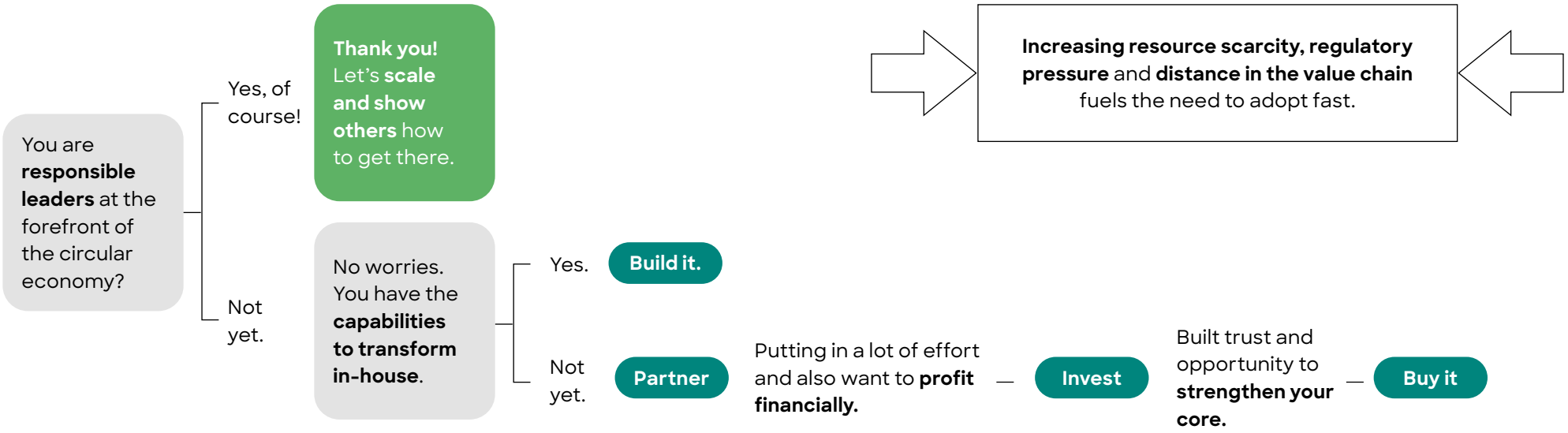


Figure 13: Exemplary thought logic behind enterprise partnership with or investment in start-ups

Marek Piwnicki – unsplash.com

The Power of Partnership: How Enterprises and Start-ups Complement Each Other to Reach an Accelerated Outcome

Partnerships between start-ups and enterprises can be transformational when their complementary strengths are effectively aligned. Start-ups bring speed, bold ideas, and deep focus on specific problems. Enterprises offer established processes, infrastructure, and access to markets. This combination allows both sides to overcome limitations. Enterprises often struggle with innovation due to internal structural complexity, while start-ups thrive on agility and experimentation. Working together enables faster testing, learning, and scaling.

Start-ups benefit through increased credibility, customer access, and strategic insight. This validation supports more focused growth and signals value to investors. For enterprises, collaboration fosters cultural learning, more agile decision-making, and new ways of thinking. For co-investors, these partnerships indicate strong market fit and reduced execution risk. They can also reveal early signals of commercial potential or acquisition readiness, while offering valuable insight into evolving value chains.

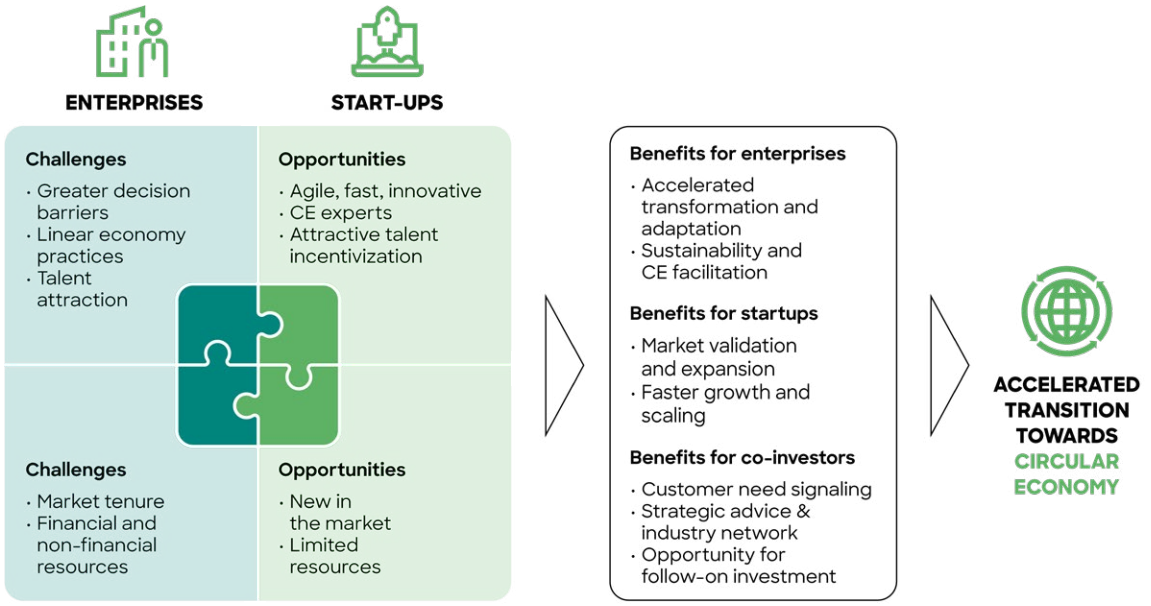


Figure 14: Complementary factors between enterprises and start-ups

Partnership and Investments Between Large Enterprises and Start-ups Drive Economic Success and Leadership

Leading voices from industry are clear: collaboration is a cornerstone of future competitiveness. Executives across Europe are openly advocating for closer ties with start-ups. Their theme is consistent: the future of circularity must be collaborative.

FROM ENTERPRISES

Collaboration with startups is not just about tech adoption, it's about cultural transformation to challenge the status quo.

Julia Kunstmann, OTTO

We need to work with innovative solutions to ensure long-term resilience in our supply chain as resources become exponentially more scarce.

Carl-Luis Rieger, WEPA

As a large enterprise, we have the scale – and therefore the responsibility – to shape economic systems and drive sustainable progress.

Bernhard Gold, FIEGE

FROM START-UPS

Start-ups provide the second, and possibly final, opportunity to integrate technological innovation within a company.

Maike Lambarth, Cyclize

The most costly innovation is the one developed in-house.

Antoine Welter, Circu Li-ion

Without strong cooperation between startups and established companies, the European economy cannot remain competitive on the global stage.

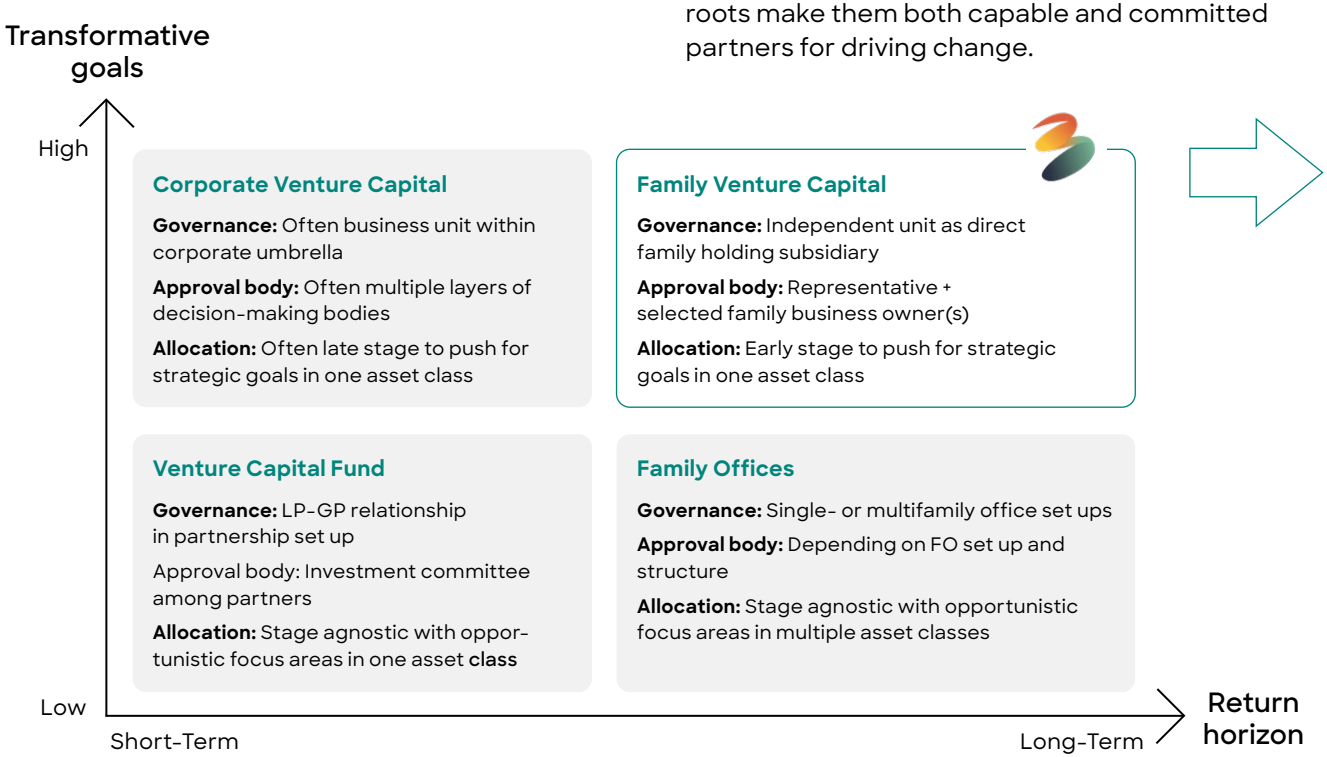
David Oudsandji, Voltfang

Figure 15: Impression from interviewed enterprise innovation drivers and founders

Family Enterprises – the EU Champions to Drive Change and Bridge the Gap Between Industry and Circular Innovation

better ventures strategically engages with family enterprises as part of its mission to unite entrepreneurial capital for systemic change. These enterprises are well positioned to support change in the EU economy and play a meaningful role in the circular transition. With a long-term perspective that spans generations, family businesses often take a more sustainable approach to innovation compared to publicly listed companies focused on short-term returns.
They also operate differently. With flatter structures and quicker decision-making, family businesses can act swiftly on new opportunities.
Their entrepreneurial spirit and strong industry roots make them both capable and committed partners for driving change.

Many family enterprises go beyond investment. They actively co-develop, test, and refine solutions with start-ups. Their engagement brings industry insights, added credibility, and smoother paths to commercial implementation. In the EU, these companies represent a core of industrial expertise and are increasingly stepping up as key players in circular innovation.
For start-ups, collaborating with a family business can feel more like partnering with a strategic ally than signing a typical contract. Shared values often underpin these relationships. For investors, such partnerships offer strong signals of market relevance and practical demand.



Why this model?

- Family entrepreneurs offer both strong return potential and strategic value by connecting start-ups with early customers and industry expertise.
- Despite their resources and innovative mindset, many family businesses lack a clear path to effective start-up collaboration.
- The “Entrepreneurs for Tomorrow” model fosters win-win partnerships: faster growth for start-ups, and scalable venture investing and transformation for family businesses.

Figure 16: Leading family businesses demonstrate how to take responsibility to strengthen Germany’s economy. That is why better ventures introduces a new family VC category to accelerate them.

The Anatomy of Successful Collaboration: How Trust, Communication, and a Shared Vision Drive Fruitful Partnerships

Strong collaborations between start-ups and enterprises are built on a few essential building blocks. From our research and conversations with experienced partners, five key success factors consistently stand out:

1. **Strategic alignment:** Partnerships thrive when both sides are aligned on purpose, goals, and the problem they want to solve together. Enterprises need internal commitment and clear KPIs to guide the process, while start-ups must understand how their solution fits into the partner's broader strategy.
2. **Timing fit:** The collaboration needs to match the maturity of both parties. Start-ups should be far enough along to deliver real value, while enterprises must be ready to engage, not just explore. Misaligned timing often leads to stalled pilots or unmet expectations.
3. **Cultural and operational compatibility:** A good collaboration goes beyond product fit. When teams on both sides respect each other's working styles, communicate openly, and adapt to feedback, trust builds quickly. Cultural fit becomes especially important in longer-term partnerships.
4. **Speed and structure:** Start-ups move fast, and the most effective enterprise partners are able to match that energy. Clear governance, short feedback loops, and fast decision-making help maintain momentum. A shared pace keeps everyone engaged and focused.
5. **Mutual value creation:** The partnership must benefit both sides. Start-ups gain credibility, customer access, and real-world validation. Enterprises get innovation capacity, speed, and future-proof solutions. When value flows both ways, the relationship is more resilient and more likely to scale.

Close the Loop Together: How to Avoid Common Pitfalls for Both Enterprises and Start-ups to Collaborate Most Effectively

Even the most promising collaborations can fail if common pitfalls aren't addressed early. Based on our analysis, we've identified key challenges on both sides – along with strategies to overcome them. When both start-ups and enterprises are aware of common misalignments and how to avoid them.

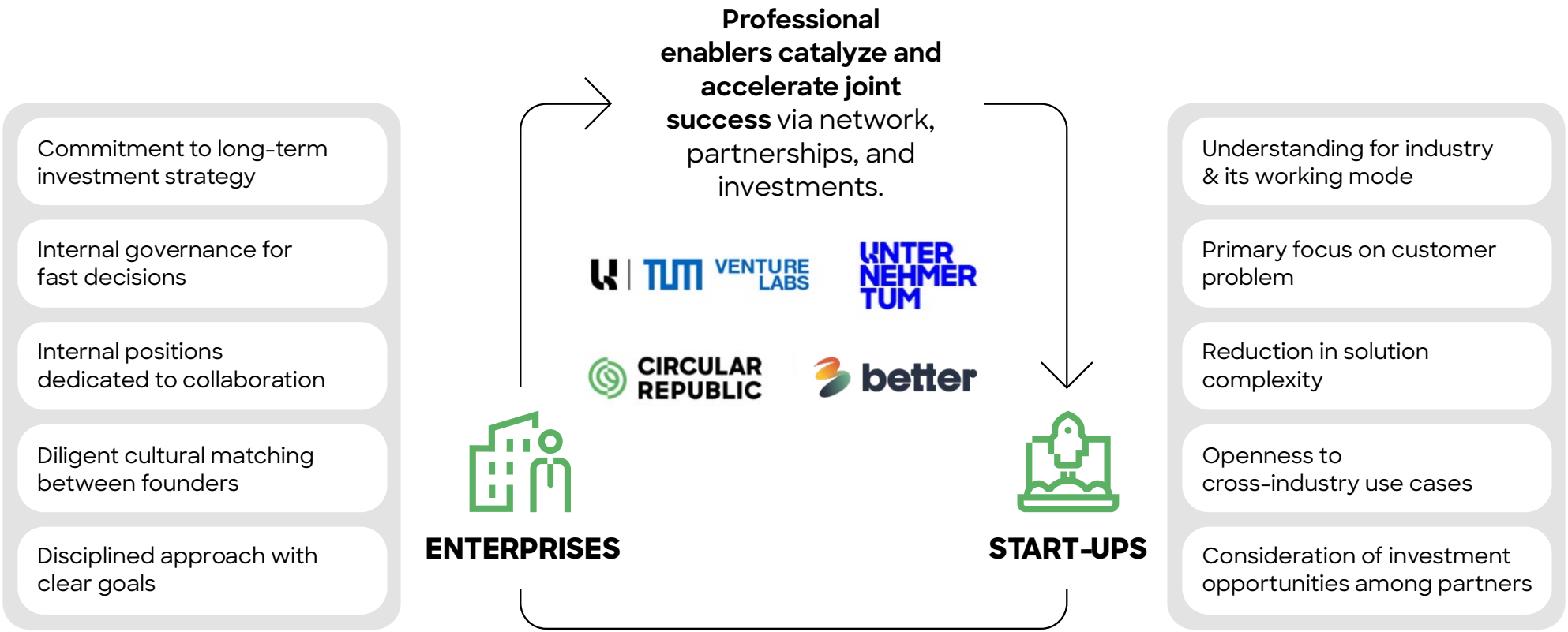


Figure 18: Identified strategies to avoid common pitfalls (assembled from qualitative interviews)

START-UP: **WASE**
Founding year: 2015
Industry: Water treatment
Employees: >4,000
Solution: Modular water treatment systems for decentralized waste-water reuse

ENTERPRISE: **WEPA Group**
Founding year: 1948
Industry: Hygiene paper manufacturing
Employees: >4,000
Structure: Direct investments via venture arm WEPA Ventures
Nr. of direct investments: 22 (since 2020)

WASE × wepa

Why?

Type of partnership: Strategic operational partnership with equity backing

Goal: To increase internal water reuse, reduce freshwater dependency and operating costs, and validate modular clean tech for broader industrial adoption. Circularity overlaps with WEPA's digitization goals and transition strategy, and WASE offered a fast, agile way to experiment.

How?

WASE caught WEPA's interest through its relevance to one of the group's core pain points: water dependency in paper production. After identifying mutual value, WEPA co-invested with multiple partners and provided business development support. Together, they piloted WASE's system in two paper sites in the UK and France. The cooperation followed a phased validation model and included technical workshops and site-specific rollouts.

Outcome

WASE delivered operational water reuse modules now running at six sites. The collaboration helped WEPA close water loops and sparked strategic alignment for future digitized circular solutions.

Takeaway: Effective collaborations start with a shared pain point, require simplicity and system awareness, and are most successful when they align with both strategic and operational goals.

PARTNERSHIP CASE STUDY #1

With our partnerships we look for strategic buy-in that sends a signal to the market. “

Carl-Luis Rieger, Director Diversification & Cooperation
Business Unit Circular Solutions @ WEPA

START-UP: **Voltfang**
Founding year: 2021
Industry: Energy storage
Solution: Battery storage systems from used EV batteries or second-life batteries

INVESTOR: **Goldbeck** (via Aurum Impact)
Founding year: 1969
Industry: Construction and real estate
Employees: >12,000
Structure: Direct investments via the family office's impact-focused investment vehicle Aurum Impact
Nr. of direct investments via Aurum Impact: 9 (since 2023)

Voltfang × AurumImpact GOLDBECK

PARTNERSHIP CASE STUDY #2

Why?

Type of partnership: Initial investment by Aurum Impact, followed by an operational collaboration with Goldbeck

Goal: Aurum Impact invested in Voltfang to back a scalable solution that extends battery lifecycles and plays a meaningful role in the energy transition, in line with Aurum Impact's broader impact-driven investment thesis. For Goldbeck, the partnership is a way to explore battery storage to boost energy efficiency and circularity in buildings, supporting sustainability goals amid rising regulatory and customer demands.

How?

Aurum Impact initially invested in Voltfang based on the start-up's impact and scalability. Later, Aurum Impact connected Voltfang to Goldbeck's innovation unit. From there, the cooperation evolved through pilot deployments in Goldbeck facilities and with end customers. No rigid KPIs were set; instead, both sides pursued practical applications and iterative collaboration. Communication and clear internal ownership were essential to align across different organizational speeds.

Outcome

Voltfang systems are now installed at several Goldbeck-built sites, including a school and a logistics center. Together, they exceed 1 MWh in total capacity, and new projects are currently underway.

Takeaway: Productive collaboration doesn't always start with an overarching strategy – it can emerge from shared values and internal momentum. Success depended on pragmatic entry points, early champions inside Goldbeck, and flexibility from both sides to co-develop solutions in real time.

> This collaboration is a great example of how impact investing can drive innovation that adds real value to Goldbeck's business.
>
> **Miki Yokoyama**, Managing Director & Partner @ Aurum Impact

START-UP: **Pickshare**
Founding year: 2015
Industry: Logistics
Solution: Customized, scalable last-mile logistics solutions for home deliveries

ENTERPRISE: **LOBBE**
Founding year: 1993 (previously EDELHOFF AG 1952)
Industry: Waste and industrial services
Employees: >2,700
Structure: UVENTURES as subsidiary and innovation unit for direct start-up investments

Nr. of direct investments: 8 (since 2022)

pickshare × UVENTURES LOBBE

#3 PARTNERSHIP CASE STUDY

Why?

Type of partnership: Direct investment with long-term strategic and operational partnership

Goal: To unlock circular logistics in urban areas where LOBBE had no previous operations and to reach end-customers directly. The goal was to explore new value chains and bring external innovation into the core organization through a focused start-up with a deep understanding of the industry's problem spaces.

How?

Pickshare approached UVENTURES with a clear use case of enabling reverse logistics at the same time LOBBE was exploring the topic internally. Lobbe invested early in the start-up's development and stayed operationally hands-off for the next 2.5 years start-up build independently. They supported every funding round with follow-on investments and built a strong mutual trust. They then started their collaboration on reverse logistics more recently in 2024. This partnership was shaped by patience, long-term strategy and a shared vision.

Outcome

The collaboration with Pickshare enabled LOBBE to access urban markets like Berlin and Munich where it previously had no operations. Over 2.5 years, Pickshare grew to 200+ employees across 11 locations. The investment validated new circular logistics models, with success measured via delivery rates, partner satisfaction (e.g., with dm), and the ability to reach end-customers digitally.

Takeaway: Collaborations thrive on cultural alignment, mutual value creation and active bridge-building.

> Through partnerships, we consciously use the innovation power of start-ups to broaden our own perspective.
>
> **Matthias Röhring**, Managing Director @ UVENTURES

START-UP: **Wildplastic**
Founding year: 2020
Industry: Packaging
Solution: Packaging made from collected plastic waste

ENTERPRISE: **OTTO**
Founding year: 1949
Industry: E-commerce & Retail
Employees: ca. 5.300
Structure: Venture clienting & pilot collaborations
Nr. of collaborations: 50

WILDPLASTIC® × OTTO

#4 PARTNERSHIP CASE STUDY

Why?

Type of partnership: With OTTO DOCK 6, driving venture clienting by unlocking and leveraging strategic scale-up potential.

Goal: To advance sustainable packaging across the group by tapping into external innovation. Otto sought bridge technologies to close plastic loops quickly while developing long-term solutions like biomaterials. Start-ups were seen as agile partners to co-develop and test impactful solutions at speed.

How?

Otto connected with Wildplastic through an existing partner, recognizing the start-up's ability to repurpose "wild" plastic waste. A joint project team (procurement, supply chain, sustainability) worked in agile weekly routines to co-develop a packaging prototype. This was piloted in 10,000 customer shipments and supported by market research. After a successful trial, Otto scaled to 100% use of Wildplastic shipping bags by end of 2023. Continuous collaboration continues today to address supply and rollout questions.

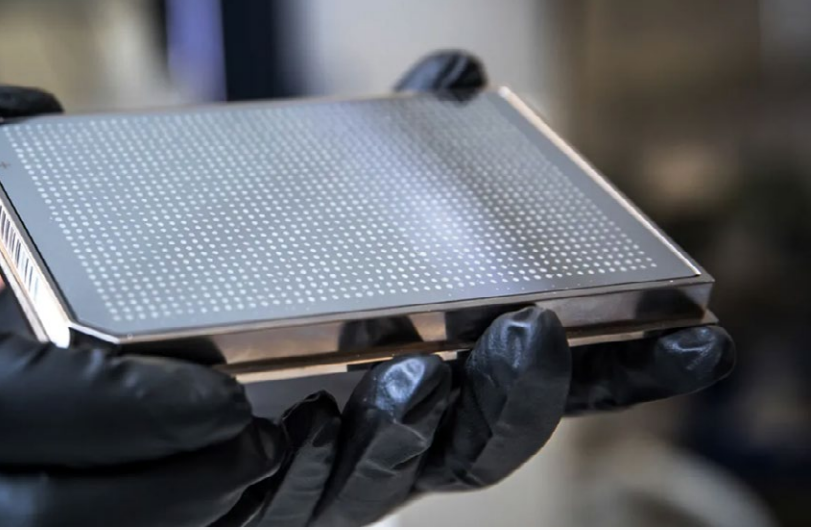
Outcome

The Wildplastic partnership enabled Otto to transition its outbound packaging entirely to recycled material—meeting a major 2023 sustainability target. It also deepened Otto's capabilities in circular supply chain management. The collaboration demonstrated how large corporates can scale start-up innovations through shared problem-solving, long-term alignment, and respectful communication.

Takeaway: Circularity partnerships thrive on mutual learning, aligned goals, and transparency—from pilot to scale.

> We don't aim to reinvent everything ourselves. Start-ups bring the bold, ready-to-go ideas we need to scale circularity fast

Karla Jabben, Senior Sustainability Manager Packaging @ OTTO



START-UP: **Aether Bio**
Founding year: 2017
Industry: Biotechnology Research
Solution: Machine-learning powered enzyme function discovery to enable new materials and applications

ENTERPRISE: **Henkel AG & Co. KGaA**
Founding year: 1876
Industry: Industrial and consumer goods businesses
Employees: ca. 47,000
Structure: Henkel Ventures as Corporate Venture Capital (CVC) unit for direct and indirect investments
Nr. of investments: 73 total, 36 direct (since 2017)

AETHER × HENKEL VENTURES Henkel

PARTNERSHIP CASE STUDY #5

Why?

Type of partnership: Direct investment with co-innovation thesis, no exclusive partnership requirements

Goal: To gain early access to a deep tech platform with strong future potential for enzymes and benefit from several potential use cases for Henkel in product and packaging development. Aether Bio aligned with Henkel's ambition to be first mover on novel ingredient technologies and to complement internal sustainability roadmaps.

How?

Henkel discovered Aether Bio through its VC network and moved quickly after a first joint meeting with R&D. The CVC team alongside Henkel's technology experts, validated the technology through fast benchmarking. The investment was made without partnership obligations—Henkel's business units negotiate collaborations independently and fund them directly. Generally, the CVC aims to have a board observer seat and supports the scaling of the portfolio, whilst Henkel's business units stay close through structured knowledge exchange.

Outcome

Henkel's early involvement positioned the company as a preferred partner for enzyme-based use cases. Aether Bio has since attracted top-tier U.S. funds. The investment shaped Henkel's internal roadmap on digital biotech applications and enabled structured dialogues between R&D and external platforms.

Takeaway: Co-innovation thrives on strategic patience, clear roles between VC and business units, and a culture that treats start-ups as peers—not suppliers.

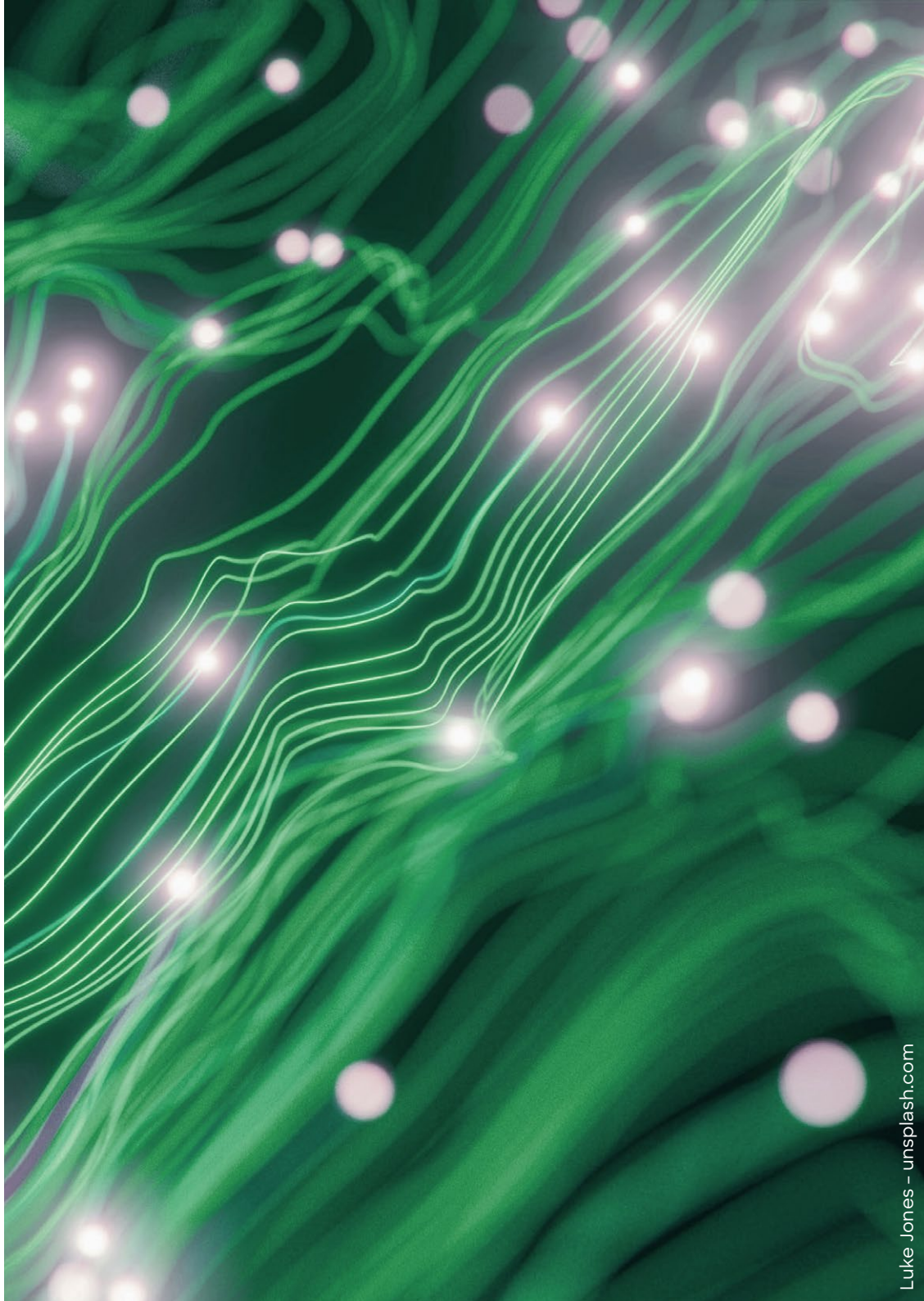
> Our role as CVC is to unlock strategic value for the company, by investing in sustainable partners for co-innovation.
>
> **Maximilian Kammerinke**, Investment Manager @ Henkel Ventures

Method

The scouting and categorization of circular economy start-ups for this report were supported by an AI-based tool developed by VentureOS. The tool analyzed Crunchbase data on start-ups founded between 2014 and 2024, using automated website scraping to classify each company across five circular economy-specific business model categories and 56 subcategories. The AI was iteratively trained and refined over time, achieving an error rate demonstrably lower than the human average on a validation sample. Additionally Semi-Structure Interviews were conducted with start-up founders and corporate experts to supplement the quantitative data.

The classification model integrates multiple layers of data, from sector and value chain positioning to technological and strategic focus areas.

Funding data was sourced and validated through Crunchbase, Tracxn, and Net Zero Insights to ensure consistency and accuracy.



Luke Jones - unsplash.com

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Disclaimer

All values presented in this report should be considered indicative. As with other databases, the underlying data is regularly updated and may contain minor discrepancies. This is partly due to the dynamic nature of the start-up ecosystem, where new ventures are founded almost daily, while others unfortunately cease operations.

Additionally, automated categorization may occasionally lead to minor inaccuracies, particularly because not all start-ups can be clearly assigned to a single category. To mitigate these issues, we conducted a careful manual review of random samples to enhance overall reliability.

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This report is co-authored by CIRCULAR REPUBLIC and UnternehmerTUM, better ventures, and TUM VentureLabs. The team that developed this report comprised:

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More information

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