



# Training & Consulting Sustainability & Circular Economy

by

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## PROFILE

Raphael Schranz is a Circular Economy Specialist, Blockchain Investor and Educator with almost a decade of practical experience in the sustainability sector. He started his career as a Waste Management Consultant, where he provided advice to communities, households, businesses, educational institutions, and organizations on waste management (collection, prevention, disposal) and environmental protection. After that he founded his own company, where he is working with clients all around the world to help them transition to a global Circular Industrial Economy.



As corporate Environmental and Waste consultant, he ensured the environmentally sound operation of the company. His activities mainly focused on the areas of production, manufacturing, and waste transportation. He fulfilled consulting and information obligations regarding all waste management-related matters concerning all operations. He served as point of contact for customers, suppliers, and internal departments on all matters related to quality and the environment. He ensured compliance with legal requirements and advised management on environmental protection and environmental management. Additionally, he contributed to the improvement of the company's own quality and environmental management system. In his role, he was responsible for preventing factors such as waste generation, emissions, radioactive radiation, or chemical substances. Raphael checked and measured whether the permissible limits are met. Furthermore, he ensured the maintenance of standards for environmentally sound wastewater and waste treatment. Outside the company, he acted as an intermediary with authorities and environmental protection initiatives, where he also participated in the development of remediation plans for contaminated water bodies and soils.

With a growing interest in Circularity, Sustainability, and a desire to contribute to a global Circular Economy, Raphael expanded his expertise with a three-part high-mastery certification by the Circular Economy Research Center, the Circular Economy Alliance and the École de Ponts in Paris to include principles of circular value creation into his expertise. He became a certified Circular Economy Specialist and has worked with clients in Europe, Asia, USA and Africa to redesign their products, processes, and business models to be more sustainable, circular, and efficient. Raphael, through his 3-part CE-Service offering, helped them develop circular economy strategies for technical and biological cycles, implement closed-loop systems, and adopt circular business models that maximize value and minimize waste, emissions, and pollution.




Raphael is a member of the Circular Economy Forum Austria. He is an advocate and speaker at the European Technology Chamber and a board member in one of their alliances, the Finance Alliance. He also serves as an Ambassador for SPSC Ambassador - Sustainability Promoters & Sustainability Collaborators.

In a project, Återbygget Ekonomisk Förening, a Swedish company specializing in circular solutions, partnered with Raphael Schranz to transform the Swedish construction industry. They have developed innovative approaches to minimize waste, conserve resources, and maximize economic benefits. Key features include the introduction of circular technical loops and the creation of a digital secondary raw materials market.

In a project aimed at establishing a circular bioeconomy in Ethiopia, Coffee Resurrect worked in partnership with Raphael Schranz on the reuse of coffee grounds instead of treating them as waste. This project emphasizes the importance of industrial symbiosis in the circular bioeconomy and demonstrates how used coffee grounds can be transformed into valuable products. Raphael Schranz provided training and consulting services to assist Coffee Resurrect in achieving sustainable and economic success.

Raphael's practical experience in waste management and the circular economy has made him a sought-after consultant in the industry. He is a recognized expert in this field and has been invited to conferences, events, and webinars worldwide. Overall, Raphael Schranz is a dedicated professional with a passion for creating a more sustainable future. His practical experience in waste management and the circular economy makes him an asset to any organization looking to embark on the path towards a circular economy and a more sustainable future.



# OVERVIEW OF SERVICES

## Circular Economy Trainings

Raphael's Circular Industrial economy trainings are high-level educational programs designed to raise awareness and understanding of the principles, strategies, and benefits of the circular economy and associated technologies, such as Blockchain, AI and IoT. These trainings aim to equip individuals, businesses, and organizations with the knowledge and tools to transition from a linear "take-make-dispose" approach to a more sustainable and regenerative system. Participants learn about key concepts such as waste prevention, resource optimization, product design for longevity, and the importance of closing, narrowing, and slowing material and resource loops. The trainings cover case studies, best practices, and real-life examples to inspire participants to implement circular economy practices in their respective fields and contribute to a more resource-efficient and environmentally friendly future.

1. Introduction to Sustainability and its History
  - Definition and significance of sustainability.
  - Historical context and evolution of sustainability concepts.
  - Global environmental challenges driving the need for sustainable practices.
2. Linear Economic System Theory
  - Explanation of the linear "take-make-dispose" economic model.
  - Characteristics of linear economic systems.
  - Implications of resource depletion and waste accumulation.
3. Environmental Consequences of Linear Resource Flows
  - Impact of linear resource extraction on ecosystems.
  - Pollution and environmental degradation resulting from linear production and consumption.
4. The Role of Waste Management in the Circular Industrial Economy
  - Introduction to waste management strategies in a circular economy context.
  - Importance of waste reduction, recycling, and resource recovery.
  - Case studies illustrating successful circular waste management practices.
5. The Great Acceleration and Planetary Boundaries:
  - Explanation of the "Great Acceleration" phenomenon.
  - Introduction to planetary boundaries and the limits of Earth's capacity to support human activities.

## 6. Basic Principles of the Circular Economy:

- Introduction to the circular economy concept and its core principles.
- Shift from linear to circular resource flows.
- Economic, environmental, and social benefits of circular approaches.

## 7. Action Plans, Directives, and Regulations:

- Overview of international and regional initiatives promoting circular economy.
- Examples of policies, directives, and regulations supporting circular practices.
- Importance of government and industry collaboration for successful implementation.

## 8. Circular Resource Flows in Technical and Biological Cycles:

- Explanation of technical and biological nutrient cycles.
- Examples of circular processes in manufacturing and agriculture.
- Importance of closing material loops for sustainability.

## 9. Strategic Importance of Circular Design & Life Cycle Assessment (LCA):

- Integration of circular design principles into product development.
- Introduction to Life Cycle Assessment (LCA) for evaluating environmental impacts.
- Design strategies for extending product lifespan and minimizing waste.

## 10. Circular Business Models (CBMs):

- Introduction to various circular business models (e.g., leasing, sharing, remanufacturing).
- Benefits and challenges of adopting circular business strategies.
- Case studies showcasing successful circular business models.

## 11. Supply Loop Operations:

- Explanation of supply loop concepts (reverse logistics, refurbishment, recycling).
- Importance of efficient supply chain management in circular systems.
- Strategies for optimizing resource recovery in supply chains.

## 12. Industry 4.0. Technologies and the Circular Economy:

- Exploration of Industry 4.0 technologies (IoT, AI, Blockchain) and their role in circular practices.
- Examples of how technology enhances resource efficiency and waste reduction.

### 13. Blockchain Technology:

- Basic concepts of blockchain technology, such as distributed ledger, consensus algorithms, and decentralization. Key benefits such as security, transparency, and immutability.
- Overview of the history of blockchain technology. What is Bitcoin and why is Satoshi's Whitepaper so interesting, the development of other cryptocurrencies, and blockchain as a more generalized technology.
- The three main types of blockchains, their differences and use cases.
- Overview of nodes, blocks, transactions, and consensus mechanisms and how they are used to create a decentralized secure system.
- Overview of digital smart contracts and how they can be used in business environments.
- Real-world blockchain use cases, such as CBDC's, (reverse-) supply chain management, identity verification, voting systems and more.
- Discussion of the future of blockchain technology in the topics of scalability improvements, cross jurisdictional and cross asset interoperability, and the potential impact of blockchain on society.

### 14. The Circular Bio-Economy:

- Introduction to the concept of a bio-based circular economy.
- Integration of renewable resources and biological processes in circular systems.
- Bio-economic opportunities in agriculture, forestry, and biotechnology.

### 15. Biomimetics:

- Explanation of biomimicry and its relevance to circular design.
- Learning from nature's solutions for sustainable innovation.
- Applications of biomimetics in product and process design.

### 16. Bionomics:

- Introduction to bionomics (the study of the relationship between economics and biology).
- Interplay between economic activities and ecological systems.
- Importance of understanding and respecting natural systems in circular practices.

### 17. Workshop

### 18. Q&A Session

### 19. Certification by Raphael Schranz Circular Economy Consulting

This comprehensive training curriculum covers various aspects of the circular economy, from foundational concepts to practical strategies and applications, enabling participants to gain a deep understanding of sustainable resource management and circular business practices.

Duration of Training

3 Days

Price per Training/Company

3990 EUR + 310 EUR Certification Fee (Austrian Standards Certification, available mid 2024)

Total: 4300 EUR + VAT

### **Circular Resource Mapping**

Circular resource mapping involves identifying and analyzing the linear flow of materials and resources within a specific region, sector, or supply chain to transform them into circular loops. The goal is to create a comprehensive understanding of how resources are used, reused, or wasted throughout their lifecycle. This mapping process helps to identify opportunities for improving resource efficiency and implementing circular economy practices. By visualizing the resource flows, stakeholders can pinpoint areas where materials, energy and water leak from the system, leading to waste and environmental impact. This information is then used to develop targeted strategies for companies and organization to help them transition into a Circular Economy as seamlessly as possible.

### **Strategy Planning**

Circular and regenerative resource strategies offer significant potential for reducing both emissions and costs associated with resource extraction, production, and waste management. These strategies focus on minimizing the use of finite resources, increasing recycling and reuse, and designing products and processes with circularity and sustainability in mind. By adopting circular principles, businesses can reduce their reliance on virgin materials, lowering associated greenhouse gas emissions and environmental impacts. Additionally, circular economy practices often lead to improved resource efficiency, reduced waste generation, and extended product lifespans, resulting in cost savings for companies. Regenerative approaches go beyond just reducing impacts and aim to restore and replenish resources, contributing positively to the environment and communities. By implementing these strategies, organizations can improve their overall environmental performance, enhance resilience, and contribute to a more sustainable and prosperous future.

Consulting Fee per hour

229 EUR + VAT

# PROJECTS

## Transforming Sweden's Construction Sector: A Circular Economy Success Story

In the realm of sustainability and ecological responsibility, one remarkable journey captures our attention—the collaborative venture between Återbygget Ekonomisk Förening and Raphael Schranz. This partnership not only showcases the significant advancements in the circular economy but also demonstrates the potency of circular principles in the pursuit of a sustainable future.

Återbygget Ekonomisk Förening, a visionary Swedish company specializing in circular economy solutions, has emerged as a trailblazer in reshaping the Swedish Building and Construction Sector. Their pioneering approach reimagines the construction industry, reframing waste as a valuable resource to be reintegrated into the economic cycle. This visionary perspective seamlessly aligns with the core tenets of the circular economy—an approach that minimizes waste, conserves resources, and maximizes economic benefits.

Collaborating with Raphael Schranz, a distinguished expert in circular economy practices, they embarked on an impactful journey to revolutionize the operational landscape of the Swedish Building and Construction Sector.

### Enriching Knowledge in Circular Operations

The journey commenced with a dynamic Circular Economy Session in Vilstal, as part of the SocialTech4EU initiative, bringing together leaders, innovators, and forward-thinkers committed to reshaping the industry's future. The focus was on building a foundational understanding of circular operations.

Raphael imparted a comprehensive grasp of the fundamental principles of circularity, setting the stage for the industry's transformation. Additionally, the collaboration with Återbygget involved discerning the distinct value proposition intrinsic to their circular endeavors. Moreover, insights were shared concerning the strategic utilization of Industry 4.0 & 5.0 Technologies, such as BIM Models and digital applications and platforms, to enhance both efficiency and sustainability.

### Forging a Strategic Roadmap

Then, the emphasis shifted towards the development of a concrete strategic roadmap for Återbygget Ekonomisk Förening. The strategies aimed at streamlining reuse, preventive maintenance, renovation, refurbishing, and repairing operations for existing products and materials within the construction sector. Furthermore, Raphael introduced the concept of a digital secondary raw material marketplace, enhancing data transparency and verifiability.



This multifaceted approach not only reduces waste and emissions but also lowers costs across the board while generating novel employment opportunities.

### **Key Takeaways**

The synergy between Återbygget Ekonomisk Förening and Raphael Schranz yielded remarkable outcomes. The adoption of circular business models played a pivotal role in minimizing the value loop for technical cycles, thereby driving increased socio-economic and environmental performance indicators.

- Concurrently, waste reduction strategies, aligned with the circular economy's principles, virtually eliminated waste tied to existing infrastructure.
- The incorporation of cutting-edge technologies through a digital secondary material market offered a clear demonstration of how technology can be harnessed to support environmental sustainability.
- Quantifiable reductions in emissions underscored the tangible environmental benefits of these endeavors.
- Successful collaboration among all stakeholders effectively managed the intricacies of transitioning to circular operations.

Beyond the training program, Raphael Schranz offered tailored consulting services to address Återbygget Ekonomisk Förening's specific requirements. These services encompassed the collaborative development of a circular business strategy in alignment with Återbygget's mission and long-term objectives, conducting environmental impact assessments of circular economy initiatives, identifying fresh market opportunities, and ensuring compliance with pertinent environmental regulations and standards.

In summation, the journey with Återbygget Ekonomisk Förening serves as a testament to the transformative potential of the circular economy. By introducing the Circular Industrial Economy to the Swedish Building and Construction Sector, they have not only dramatically reduced waste but have also crafted a sustainability model that can be emulated across diverse industries. Raphael's expertise and guidance have been instrumental in shaping Återbygget's success, underscoring how circular economy principles can concurrently drive environmental stewardship and economic prosperity. Together, they are making invaluable contributions toward a more circular, regenerative, and resilient future for all.


## Unlocking the Circular Bioeconomy Potential: A Journey with Coffee Resurrect

In the ever-evolving landscape of sustainability and environmental stewardship, one remarkable journey stands out—the partnership between Coffee Resurrect and Raphael Schranz. This partnership not only underscores the remarkable strides made in the circular bioeconomy but also showcases the power of industrial symbiosis in the quest for a sustainable future.

Coffee Resurrect, a visionary company, has been at the forefront of the circular bioeconomy movement. By reimagining the fate of used coffee grounds, they've pioneered a revolutionary approach. Instead of discarding coffee grounds as waste, they view them as a valuable resource to be reintegrated into the economy. This perspective aligns perfectly with the principles of the circular economy—a paradigm where waste is minimized, resources are conserved, and economic benefits are maximized.

The heart of Coffee Resurrect's mission lies in industrial symbiosis, a concept at the core of the circular bioeconomy. Together with Raphael Schranz, they have created a virtuous cycle where coffee grounds are upcycled into various valuable products. Through strategic collaborations and partnerships, they've ensured that no part of the coffee grounds goes to waste. These partnerships have not only reduced waste but also generated economic opportunities for multiple stakeholders. Raphael Schranz, a leading expert in circular economy and the circular bioeconomy, played a pivotal role in this journey. A tailored training program was designed to empower Coffee Resurrect with the knowledge and tools needed to excel in their mission. This training delved into several key topics:

- Understanding the core principles of circularity, such as circular design choices and the slowing, narrowing, and closing of resource loops in technical and biological cycles.
- Delving into the concept of industrial symbiosis and how it can be applied to maximize resource efficiency to solve multidimensional problems across sectors to reduce waste and emissions, reduce costs and create jobs.
- Exploring the role of biotechnology and cascading cycles to shape biological loops and a circular bioeconomy.
- Examining the importance of sustainable sourcing and supply chain management in circular business models.
- Promoting innovative approaches to product and system design that minimize waste and environmental impact.



Beyond the training program, Raphael Schranz also provided consulting services tailored to Coffee Resurrect's unique needs. These services encompassed:

- Collaboratively developing a circular business strategy that aligns with Coffee Resurrect's mission and long-term goals.
- Conducting assessments to measure the environmental benefits of their circular bioeconomy initiatives.
- Identifying new market opportunities and potential partners to further expand Coffee Resurrect's impact.
- Ensuring that Coffee Resurrect's operations adhere to relevant environmental regulations and standards.

In conclusion, the journey with Coffee Resurrect is a testament to the transformative power of the circular bioeconomy. By reintegrating used coffee grounds into the economy through industrial symbiosis, they've not only reduced waste but also created a model of sustainability that can be replicated across industries. Raphael Schranz's expertise and guidance have been instrumental in shaping Coffee Resurrect's success, exemplifying how circular economy principles can drive environmental stewardship and economic growth hand in hand. Together, they are contributing to a more sustainable and resilient future for all.



## Complexity Analysis for the European Green Deal

Raphael took part in modelling the transition to a fair & sustainable Europe and a European Green Deal in the Shared Green Deal Arena Series, hosted by the Dutch Research Institute for Transition (DRIFT), funded by the European Union.

Together with over 100 high-level participants and with the help of an X-Curve analysis model, they discussed the state of the transition to a fair & sustainable Europe across six strategic priorities which contribute to the climate action and zero pollution ambitions of the EU Green Deal. These strategic priorities included: Clean Energy, Circular Economy, Efficient Renovations, Sustainable Mobility, Sustainable Food, Preserving Biodiversity, Climate Action, and Zero Pollution. Moreover, Raphael assisted in the mapping of future images and the creation of comprehensive transition pathways to implement a European Circular Industrial Economy.

Lastly, with a back-casting approach, he helped built timelines for implementation strategies and analyzed possible trade-offs and co-benefits between 3 different priorities of the EU Green Deal. This complexity analysis included the implications of feedback loops between energy and food production and consumption systems within the principles of the circular economy and circular value creation.

[https://www.youtube.com/watch?v=cXUODyvmi\\_Y](https://www.youtube.com/watch?v=cXUODyvmi_Y)

<https://sharedgreendeal.eu/resources/pathways-more-just-sustainable-europe>

## Co-Creation of strategic parameters to strengthen the role of communities in the European Union

Hosted by the European Economic and Social Committee (EESC) and the European Network for Community-led initiatives on Climate Change and Sustainability (ECOLISE), Raphael worked on the co-creation of strategic parameters to strengthen the role of local communities in the European Union. He supported the strengthening of the role of permaculture initiatives, transition networks and ecovillages to achieve a bottom-up approach for the sustainable transition through decentralized community-based actions. These grassroots movements are vital to the Green Deal and the fair and just transition that the global civilization wants to achieve.

Raphael has helped to form the holistic and systemic approach that is needed to tackle planetary crisis, caused by our extractive and destructive economic system, such as biodiversity loss and pollution. To recognize that everything is connected and that humans are a part of nature and not separate from it, is essential to enable regeneration in the natural world and in social, economic, and political systems.

Lastly, he also provided deep insight on other underlying problems such as political apathy or distrust on the side of community-led initiatives which could lead to the creation of major roadblocks in the implementation of the European Green Deal. He noted that trust between policy makers and communities in democratic processes needs to be re-established, also with the help of adequate decentralized funding pools.

Raphael is a recognized Specialist in the field with a passion for creating a more sustainable future. This combination of years of practical experience in waste management and high-level knowledge and expertise in Circular Economy has made him a sought-after consultant in the industry and an invaluable asset to any organization looking to transition towards a circular economy and a more sustainable future.

## ADVOCACY AND AMBASSADORSHIP

He is an Advocate and Speaker for the European Technology Chamber where he gave multiple speeches about innovative systemic solutions to global problems, such as the implementation of circular tokenized business models in the mobility sector and IoT/AI based reverse logistics operations for the waste management sector. Also, Raphael Schranz is a Member of the Board of Directors at the Finance Alliance of the EU Technology Chamber.

In general, he gave participants in webinars worldwide insights into practical use cases of technologies, such as IoT, AI, Blockchain and Robotics, in the Circular Industrial Economy. He is and an Ambassador to SPSC Ambassador - Sustainability Promoters & Sustainability Collaborators with the intent to increase partnerships worldwide and exchange best practices and risks in practical contexts of the Circular Industrial Economy.

## CERTIFICATIONS

The Circular Economy Certifications were conducted at the Circular Economy Alliance, in cooperation with the Circular Economy Research Center CERC and the École des Ponts Business School in Paris.



<https://credentials.circulareconomyalliance.com/59b0678c-42a8-471d-b1e4-5be22bcbcb6d0>

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