

MASTER
INNOVATION AND RESEARCH FOR SUSTAINABILITY

MASTER'S FINAL WORK
INTERNSHIP REPORT

ECONOMIC AND REGULATORY INSTRUMENTS IN NORWAY'S
CIRCULAR ECONOMY: INDUSTRY PERSPECTIVES ON POLICY
DESIGN AND IMPLEMENTATION

VEGARD LUND RØER

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GLOSSARY

ACF – Advocacy Coalition Framework.

CE – Circular Economy.

EEA – European Environment Agency.

EU – European Union.

GDP – Gross Domestic Product.

ISEG – Instituto Superior de Economia e Gestão.

MFW – Master's Final Work.

MIRS – Master's Programme in Innovation and Research for Sustainability.

NOK – Norwegian Krone.

OECD – Organisation for Economic Co-operation and Development.

R&I – Research and Innovation.

VAT – Value Added Tax.

ABSTRACT

Norway faces a significant gap between ambitious circular economy targets and its current material circularity performance. While the European Union aims to double its circular material use rate by 2030, Norway's circularity remains among the lowest in Europe. This raises an important policy question: how do economic and regulatory instruments shape circular practices in Norway, and how are these instruments perceived by key industry stakeholders?

This internship report provides empirical insight into this question through qualitative research conducted at Sirk Norge, the national industry association for recycling and circular value chains. The study is based on 31 semi-structured interviews with company representatives and expert stakeholders, complemented by a mapping of publicly funded research and innovation (R&I) projects related to circular economy in Norway from late 2022 onwards.

The findings show strong support for circular economy ambitions, but also highlight persistent economic and institutional barriers. Companies emphasise higher costs, uncertain demand for secondary materials and frequent changes in regulatory frameworks as key challenges. Economic instruments, particularly tax reductions and public financial support, are perceived as crucial, especially when embedded in stable and coordinated policy mixes. The R&I mapping reveals a concentration of public funding among larger firms, pointing to structural differences in innovation capacity across company sizes.

The report concludes that circular economy transitions are constrained not primarily by technological limitations, but by economic incentives, institutional coordination and policy predictability. By combining industry perspectives with analytical reflection, the internship contributes both to academic understanding of sustainability transitions and to Sirk Norge's strategic knowledge base.

KEYWORDS: Circular Economy; Policy Instruments; Sustainability Transitions; Innovation Policy; Industry Stakeholders; Research and Innovation

JEL CODES: O31; O38; Q55; L52; D62; M14

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ACKNOWLEDGMENTS

I would first like to express my sincere gratitude to Professor Adam John Standing for his guidance, constructive feedback and steady support throughout this internship report. His critical questions and academic perspective have strengthened both the analysis and the final result.

I am also grateful to Sirk Norge for welcoming me into the organisation and for giving me the trust and flexibility to shape the internship in line with my academic interests. The openness and engagement of the staff made it possible to carry out both the interview project and the R&I mapping in a meaningful way.

I would like to thank the professors and classmates of the MIRS programme for inspiring discussions, shared learning and encouragement throughout these two years. The interdisciplinary environment has been both challenging and rewarding, and it has shaped the way I approach complex sustainability questions.

Finally, I want to thank my family for their unwavering support. To my mother, Kristin, and my father, Knut Arne, and to my brothers Eirik, Magnus and Sigurd – thank you for your patience, encouragement and constant belief in me.

A special thank you also goes to my second family in Portugal – Tui, Monica and Laura for welcoming me so warmly and making Lisbon feel like home. Your support meant more than you know.

1. INTRODUCTION

The transition from a linear to a circular economy has become a central priority for both the European Union (EU) and Norway as they seek to reduce resource use, lower emissions, and strengthen economic resilience (Regjeringen, 2021). The European Commission emphasizes that achieving circularity is essential for meeting climate targets and reducing dependence on virgin materials (European Commission, 2020). Despite growing political ambition, progress remains uneven, illustrating what sustainability research often describes as a knowledge–action gap (Geels, 2011). Europe’s circular material use rate is currently about 11.5%, and the EU aims to double this to 22% by 2030 (Eurostat, 2024). While this signals political ambition, recent assessments suggest that current progress remains too slow to meet the target (EEA, 2022). Reaching this goal requires not only technological innovation and effective regulation, but also broader social, organizational and institutional change (Geissdoerfer et al., 2017). Although EU circular economy strategies are comprehensive, their complexity makes translation into coherent national implementation challenging.

Norway illustrates this challenge clearly. Although the country performs well on many sustainability indicators, it lags significantly behind the European average in material circularity. Whereas the EU’s circular material use rate is around 11.5%, Norway’s rate is estimated at only 2.4% (Circularity Gap Report, 2024). As a member of the European Economic Area (EEA), Norway is closely integrated into EU environmental and circular economy legislation, making developments at EU level highly relevant for national policy. Part of this gap reflects structural characteristics of the Norwegian economy, especially the export of oil, gas, fish and heavy industrial materials, which are difficult to recycle and weigh heavily in weight-based circularity indicators (Circularity Gap Report 2024; EEA, 2022). Because the indicator is calculated based on material flows by weight, countries with large extractive sectors tend to appear less circular even if domestic recycling systems are improving (EEA, 2022).

Several academic studies and national policy reviews (Kirchherr et al., 2018; OECD, 2019; European Environment Agency, 2022), including the Norwegian expert

report *Ikke rett fram* (2025), identify structural barriers beyond statistical measurement effects. These include high consumption levels, limited domestic processing capacity, fragmented governance across the waste and recycling sector, and weak economic incentives for circular solutions. Although Norway is not an EU member, its participation in the European Economic Area (EEA) entails the incorporation of substantial EU internal market and environmental legislation into national law. As a result, Norwegian companies are increasingly shaped by EU initiatives such as the Circular Economy Action Plan and the Ecodesign for Sustainable Products Regulation, creating additional complexity within an already fragmented domestic policy landscape.

These developments raise an important policy question that this thesis will attempt to address: *How do economic and regulatory instruments shape circular practices in Norway, and how are these instruments perceived by key industry stakeholders?*

For companies across the recycling and resource recovery sector, these issues are not abstract. They shape investment decisions, long-term planning and the ability to comply with rapidly changing EU requirements. They also highlight the need for better coordination, clearer incentives and more predictable policy signals. In this landscape, Sirk Norge – the national industry association for recycling and circular value chains plays an important role by facilitating dialogue between member companies, national authorities and EU-level processes. The organisation works to articulate industry perspectives in consultations and policy discussions, and to ensure that regulatory developments are informed by practical experience from the sector.

Despite these efforts, there is still limited knowledge about how circular economy policies and economic instruments are interpreted and acted upon by the actors expected to implement them. This report addresses that gap by combining semi-structured interviews with a mapping of research and innovation activity. The analysis draws in particular on perspectives from sustainability transitions, innovation economics and policy-mix theory to examine how companies and experts understand economic incentives, regulatory stability and coordination across governance levels. By grounding these theoretical perspectives in empirical material, the report seeks to clarify

how policy ambitions translate into practical investment decisions within the Norwegian circular economy.

1.2 The Company and Internship Overview

Sirk Norge (formerly Avfall Norge) is the national industry association for recycling, waste management and circular value chains in Norway. Established in 1986 and rebranded in 2025 to reflect a broader circular economy focus, the organisation represents more than 200 public and private member companies across the resource recovery sector. Sirk Norge works to improve framework conditions for its members through policy advocacy, stakeholder dialogue and knowledge dissemination. The organisation participates in public consultations, engages with national authorities and EU/EEA processes, and provides its members with analysis, events and professional arenas for collaboration. In this capacity, Sirk Norge functions as a coordination hub between industry actors and policymakers in the Norwegian circular economy landscape (Sirk Norge, 2025).

My internship was carried out within Sirk Norge's policy and analysis functions during a period of significant regulatory and strategic change, including the organisation's recent rebranding, adjustments to its membership model, and intensified EU regulatory developments affecting the sector. The work covered several interconnected tasks that combined practical industry engagement with policy-related analysis.

My principal tasks during the internship included structured interviews during Sirk Norge's Annual Conference, the largest meeting arena for circular economy and resource recovery in the Nordic region. During the conference I conducted 20 structured interviews with exhibiting companies, collecting insights on circularity challenges, economic instruments and the effects of new EU regulations. In the weeks that followed, I conducted 11 longer, semi-structured interviews with keynote speakers and senior representatives from organisations such as IKEA, DNB, NG Nordic, Nissan, Statistics Norway and the EU Delegation. Together, these interviews provided perspectives from both operational and strategic levels of the circular economy.

In addition to the interview work, I developed a dataset mapping recent Norwegian research and innovation activities related to circular economy. This included

identifying funded projects, thematic focus areas and key actors, offering Sirk Norge an overview of emerging trends and potential areas for collaboration. I also produced a ranking of companies engaged in circular-related R&I activities based on predefined criteria, including innovation participation, financial robustness, membership potential and strategic relevance for circular economy development. The findings from the interviews and the R&I mapping were presented to Sirk Norge's staff and are expected to inform upcoming work on policy advocacy, member engagement and analytical development.

1.3 Articulation with the Master's Programme

Throughout the Master's programme in Innovation and Research for Sustainability (MIRS), a combination of theoretical perspectives and analytical tools proved essential for understanding and carrying out the work conducted during the internship. The transition to a circular economy, which is central to Sirk Norge's work, is a complex socio-technical challenge influenced by policy, markets and institutional structures. The internship offered a practical opportunity to apply these academic perspectives in a real policy and industry context.

Concepts from *Sustainability Science and Policy* were particularly relevant. Frameworks on systemic barriers, policy mixes and multilevel governance helped interpret how companies respond to new EU regulations and why progress toward circularity remains uneven. In particular, insights from sustainability transitions literature emphasize how socio-technical systems are shaped by path dependency and institutional lock-in, which can slow structural change even when technological alternatives exist (Geels, 2002; Geels, 2011). Similarly, policy-mix literature highlights the importance of instrument interaction and long-term consistency in supporting transitions (Rogge & Reichardt, 2016). These perspectives supported the analysis of interview findings and helped situate company concerns within broader structural and institutional conditions.

Insights from *Research and Innovation Policy* were also important, especially in connection with the mapping of Norwegian circular-related R&I activities. Innovation studies literature underlines how technological change is shaped by institutional frameworks, industrial capabilities and cumulative learning processes (Fagerberg, 2004). More recent policy discussions emphasize the role of mission-oriented innovation and

strategic directionality in addressing sustainability challenges (OECD, 2023). These ideas provided a useful basis for understanding how public funding shapes technological and organizational change, and informed both the structure of the dataset and the interpretation of emerging trends.

The work on economic instruments drew directly on *Economics of Innovation* and *Industrial and Competitiveness Policy*. Theories of market failure and externalities help explain why environmentally beneficial innovations may remain underprovided in the absence of corrective policy measures (OECD, 2019). In addition, literature on structural change and green transformation highlights how long-term competitiveness increasingly depends on the ability to redirect innovation systems towards sustainability goals (Fagerberg et al., 2023). These theoretical insights helped clarify why companies emphasized taxes, subsidies and predictable policy signals when discussing what they need to scale circular solutions.

Methodological competencies from the programme, particularly in qualitative research methods and *Communication for Research and Innovation*, were crucial for designing and conducting semi-structured interviews in a fast-paced conference environment. Literature on qualitative interviewing emphasizes the importance of structured flexibility, thematic consistency and reflexivity in semi-structured designs (e.g., *How to Design and Conduct Semi-Structured Interviews*, course material). Training in stakeholder engagement, question design and systematic analysis ensured that information from both companies and keynote speakers was collected consistently and could be compared across groups.

Taken together, the internship provided a practical arena for applying and integrating the interdisciplinary knowledge developed throughout the MIRS programme. It demonstrated how academic perspectives on innovation, governance and sustainability transitions can be translated into concrete analytical tasks, and strengthened the ability to produce evidence-based insights relevant to both academic and professional contexts.

2. LITERATURE REVIEW

2.1.1 Circular Economy

The circular economy is commonly defined as an economic model that aims to design out waste, keep products and materials in use for as long as possible, and

regenerate natural systems (Ellen MacArthur Foundation, 2015). In contrast to the linear “take–make–waste” model based on cheap inputs, short product lifetimes and continuous extraction, a circular economy seeks to decouple economic activity from resource use. This is achieved through strategies such as reuse, repair, remanufacturing, recycling, and product-as-a-service models. In product-as-a-service models, companies retain ownership of products and extend their lifetime (Kirchherr et al., 2017).

Recent sustainability transitions research emphasizes that circular economy is not simply a collection of technical practices but a systemic socio-technical transition requiring coordinated changes in production, consumption and economic incentives (EEA, 2022; OECD, 2023; Geels, 2018). Within sustainability science, such transitions are described as forms of third-order change, implying a rethinking of underlying assumptions about growth, competitiveness and resource dependency (Hall, 1993; Loorbach, 2010). Because third-order change challenges core beliefs and institutional logics, it is typically more difficult to realize than incremental or efficiency-oriented adjustments.

Innovation economics highlights several mechanisms that slow the shift toward circularity, including lock-in effects, path dependency, market failures and business models oriented around linear value creation (OECD, 2019). Although circular solutions often provide environmental benefits, they may be commercially unattractive without supportive policy frameworks or predictable incentives. These theoretical perspectives are directly relevant for this study, as the interview material sheds light on how Norwegian companies perceive circularity, what they view as the main barriers in practice, and which economic instruments they consider necessary for scaling circular activities.

2.1.2 Advocacy Coalition

The Advocacy Coalition Framework (ACF), developed by Sabatier and Jenkins-Smith (1993), offers a useful perspective for understanding how policy change occurs in complex areas such as circular economy. According to ACF, policymaking takes place within policy subsystems in which actors form advocacy coalitions. These coalitions consist of groups of stakeholders and policy actors who are united by shared normative beliefs and policy goals. They may include industry associations, firms, civil servants,

researchers, NGOs and political actors. What binds them together is not organizational similarity, but shared interpretations of problems and preferred solutions.

ACF suggests that substantial policy change is typically gradual, shaped by coalition strategies, learning processes and shifts in political priorities (Sabatier & Jenkins-Smith, 1993; Jenkins-Smith et al., 2014). Because core beliefs tend to be stable, coalitions influence policy by coordinating their actions, producing knowledge and shaping policy debates over time (Pierce et al., 2017). Recent research has applied the Advocacy Coalition Framework to circular economy and waste governance contexts, showing how competing coalitions frame circularity in different ways and seek to influence regulatory outcomes (Duygan et al., 2018; Bækgaard et al., 2024). These studies demonstrate that circular economy debates are not only technical discussions about resource efficiency, but also structured by coalitions with distinct normative orientations and strategic priorities. This perspective is useful for analyzing how industry actors, public authorities and expert stakeholders position themselves within the Norwegian circular economy landscape.

This framework is relevant for analyzing circular economy policy in Norway, where multiple actors share concerns related to regulatory fragmentation, competitiveness and the need for clearer economic incentives. Sirk Norge can be understood as an intermediary actor within such an advocacy coalition, facilitating coordination among companies and helping articulate collective positions toward policymakers. The ACF perspective therefore helps connect the interview findings to broader policy dynamics.

2.2 Existing Studies on Circular Economy Transitions

Research on circular economy (CE) transitions shows considerable variation in how countries and sectors progress. Much of the literature emphasizes structural and institutional barriers, while other studies highlight cases where coordinated policy and industry efforts have led to measurable progress. Together, these studies help contextualize the Norwegian situation, but many focus primarily on macro-level policy developments rather than the experiences of industry actors (Geissdoerfer et al., 2017; EEA, 2022). A widely cited empirical study by Kirchherr et al. (2018) identifies several obstacles that slow CE adoption across the EU. Their findings suggest that the main

challenges are economic and organizational rather than technological. As will be illustrated in Chapter 4, similar concerns regarding profitability, regulatory fragmentation and unstable incentives are expressed by Norwegian industry actors in this study.

Nordic research adds important nuance. Niskanen et al. (2020), analysing CE governance in Sweden, describe the “strange case” where CE enjoys broad political support but struggles in implementation. They highlight tensions between national ambitions and local practices, showing how circular initiatives may encounter resistance when they disrupt established economic interests, infrastructure investments or existing waste-management routines. Such resistance can manifest itself through slow administrative implementation, conflicting institutional mandates or reluctance among incumbent actors to support regulatory changes that alter established market positions.

More optimistic trajectories are documented in the Netherlands. Reike et al. (2022) examine the Dutch circular textile sector and show how mission-oriented approaches that combine regulation, targeted funding and collaboration across value chains can accelerate circular innovation. Their work demonstrates how alignment between economic instruments and sectoral needs can generate tangible results.

Finland is frequently referenced as a national case of coordinated CE policy. SITRA’s Circular Economy Roadmap (2016; updated 2019) helped place circularity firmly on the national agenda, fostered cooperation across sectors and stimulated pilot projects. However, recent assessments note that Finland still has very high material consumption per capita and that overall resource use has not decreased. This suggests that while strategies can mobilize actors and generate momentum, deeper structural change remains challenging when consumption patterns and industrial systems remain largely linear.

Several other studies support these broader patterns. OECD (2019) highlights ongoing economic and market barriers, such as high costs and limited demand for secondary materials, which continue to hold back circular business models. Geissdoerfer et al. (2017) argue that circular economy transitions require system-wide change rather than small, incremental adjustments. The European Environment Agency (2022) reaches a similar conclusion, noting that while many European countries have strengthened their policy frameworks, progress in reducing overall material consumption remains slow.

Taken together, existing research highlights three consistent insights: (1) CE transitions are constrained by economic and institutional barriers; (2) policy coherence and cross-sector collaboration are essential for progress; and (3) national strategies can create momentum but rarely generate full system transformation on their own. However, most studies prioritize macro-level policy analysis and provide comparatively less insight into how individual firms and industry actors experience circularity in practice. In addition, while research and innovation (R&I) are frequently presented as key enablers of circular transitions, existing literature pays limited attention to how R&I funding interacts with regulatory stability, market conditions and industrial structure. This report contributes to addressing these gaps by combining interview-based insights from Norwegian companies and experts with an empirical mapping of circular economy–related R&I activity.

3. METHODOLOGY

3.1 Research Design and Rationale

This internship adopted an exploratory qualitative research design, grounded in practical engagement within an industry organisation and systematic data collection from key actors in the Norwegian circular economy landscape. Exploratory qualitative approaches are particularly suitable when the aim is to understand perceptions, interpretations and context-dependent experiences rather than to test predefined hypotheses (Bryman, 2016). The purpose was therefore to gain insight into how economic instruments, regulatory frameworks and innovation incentives are understood and experienced by actors who work with circular solutions in practice. This approach directly addresses the research question, which examines how economic and regulatory instruments shape circular practices in Norway and how these instruments are perceived by key industry stakeholders.

A qualitative approach was considered appropriate because the research question focuses on perceptions, experiences and interpretations rather than measurable outcomes alone. As described above, circular economy transitions involve complex interactions between policy, markets, organizational practices and institutional structures, which are difficult to capture through quantitative indicators alone. Semi-structured interviews are particularly suited to exploring how actors interpret policy developments

while allowing comparability across respondents (Kvale & Brinkmann, 2009). This method therefore provided access to perspectives that are not visible in existing statistical data or policy documents, and enabled an in-depth exploration of how actors assess the effectiveness of current and potential policy instruments.

The research design reflects the internship context. Being embedded within Sirk Norge provided access to actors, arenas and information that would be difficult to obtain through an external research project. It also meant that the research built on prior sectoral knowledge and familiarity with ongoing policy discussions, rather than entering the field without contextual understanding. At the same time, the design was structured and transparent enough to ensure analytical quality. The methodological choices were discussed and refined through dialogue with both Sirk Norge and the academic supervisor at ISEG, ensuring that the approach was relevant for the organisation while meeting academic expectations.

The study analyses three main sources of data: semi-structured interviews with companies, in-depth interviews with experts and keynote speakers, and a mapping of research and innovation (R&I) activities related to circular economy in Norway. Combining different types of data allowed comparison across actor groups and strengthened the overall consistency of the findings.

3.2 Data Collection

3.2.1 Industry Interviews at the Annual Conference

The primary data collection took place during Sirk Norge's Annual Conference 2025, the largest meeting arena for circular economy and resource recovery in the Nordic region. With more than 60 exhibiting companies and over 1,000 participants, the conference provided a concentrated field setting where a broad range of industry actors could be approached within a limited timeframe.

In the weeks leading up to the conference, a semi-structured interview guide was developed in collaboration with Sirk Norge's policy team and the academic supervisor at ISEG. The guide went through several iterations to ensure that the questions were clear, relevant and comparable across companies with different business models and positions in the value chain. The final guide focused on four main themes: circular

practices, economic instruments, regulatory conditions and perceptions of EU policy developments. These themes were designed to address the research question concerning how economic and regulatory instruments shape circular practices in Norway and how they are perceived by key stakeholders. The interview guide is included in the annex.

Prior to the conference, all exhibiting companies were reviewed through desk research, including their business focus, circular activities and relevance to the research objectives. Based on this review, 20 companies were selected to ensure variation across sectors and value-chain positions, including collection and treatment companies, technology providers, textile recyclers, material producers, digitalization firms and circular service providers. This purposive sampling strategy aimed to capture variation and thematic relevance rather than statistical representativeness (Kvale & Brinkmann, 2009).

The interviews were conducted in person at the exhibition stands and lasted between 5 and 15 minutes, depending on availability and engagement. All interviews asked the same core questions, while allowing flexibility for follow-up prompts when relevant. Verbal consent was obtained from interviewees prior to recording, where the purpose of the interview was explained to them and they were assured of anonymity. A small number of additional companies were approached during the conference outside the pre-selected sample. These interactions served as a form of informal validation and confirmed that the targeted selection was appropriate, as companies outside the sample often had limited insight into the policy and economic issues under investigation.

3.2.2 Expert and Keynote Interviews

To complement the operational perspectives gathered from companies, a second round of interviews was conducted with keynote speakers and senior experts who participated in the Annual Conference. While the company interviews primarily reflected operational and sector-specific concerns, these expert interviews provided broader system-level perspectives on circular economy policy, innovation dynamics and regulatory development. The expert interviewees included senior representatives from finance and banking, large consumer-facing corporations, industrial groups, public statistical and regulatory bodies, and organisations directly engaged in EU–EEA policy

processes. Several held strategic or leadership positions within their respective organisations, enabling them to reflect not only on operational challenges but also on regulatory design, investment priorities and long-term transition dynamics at national and European levels.

Because keynote speakers were difficult to approach during the conference itself, Sirk Norge facilitated contact details after the event. Invitations were sent by email to 13 selected individuals, of whom 11 agreed to participate. Selection was based on their relevance to national circular economy policy and their ability to reflect on economic instruments, innovation dynamics and longer-term transition challenges.

These interviews were conducted digitally or in person and lasted between 10 and 20 minutes. The interview guide largely overlapped with the company interviews to ensure comparability across respondent groups, but included one additional question related to research and innovation. Specifically, interviewees were asked how a significant increase in national and European R&I spending directed toward circular economy could affect their sector or area of work. This question was included to capture system-level reflections on investment priorities, regulatory design, market development and innovation dynamics, beyond the operational concerns of individual firms.

TABLE 1 OVERVIEW OF INTERVIEW SAMPLE AND DURATION

Group	N	Mean duration	Shortest	Longest	Total duration
Companies	20	6:52 minutes	3:14 minutes	15:54 minutes	2:17:25
Experts	11	16:05 minutes	7:38 minutes	24:04 minutes	2:40:45
Total	31		3:14 minutes	24:04 minutes	4:58:10

3.2.3 Mapping of Research and Innovation Activities

In addition to the interviews, a dataset mapping recent research and innovation activities related to circular economy in Norway was developed. The purpose of this work was both to provide Sirk Norge with an overview of which companies and sectors are currently receiving public funding for circular-oriented projects, and to support the research question by examining how innovation funding is distributed across

actors and sectors. In this context, “funded projects” refer to competitive public R&I grants or co-financing schemes awarded by national funding agencies such as the Research Council of Norway, Innovation Norway and Enova. These projects typically support technology development, pilot testing, process innovation or business model experimentation related to circular economy objectives. The mapping aimed to identify emerging trends and potential areas for collaboration within the Norwegian circular economy landscape.

The initial approach involved contacting the Research Council of Norway, Innovation Norway and Enova to request project-level information. Due to confidentiality and ethical restrictions, detailed project descriptions could not be shared directly. As a result, the mapping was conducted through publicly available sources, including funding databases, annual reports and open project announcements. The dataset was limited to projects from late 2022 onwards to ensure relevance and alignment with Sirk Norge’s strategic focus. In total, around 30 funded projects involving non-member companies were identified. Following the initial mapping, simplified project summaries were requested from the funding agencies. These summaries excluded sensitive information but provided sufficient detail to categorize projects by thematic focus, funding size and type of organisation. All information was compiled into a structured dataset that can be expanded over time. While not exhaustive, the mapping provides an overview of current circular-oriented R&I activity and illustrates how companies engage with public funding schemes.

3.3 Data Analysis

The interview material and secondary sources were analyzed using qualitative content analysis (Mayring, 2014). Audio recordings and notes were transcribed and organized into a shared structure to ensure consistency across interviews. The analysis followed an inductive approach, where themes were developed from patterns emerging in the material rather than predefined categories (Braun & Clarke, 2006). Initial coding focused on recurring topics closely linked to the research question, including economic instruments, regulatory barriers, circular practices, innovation challenges and the perceived role of EU policy.

During the analysis, a distinction emerged between firm-level and system-level perspectives. Company interviews primarily reflected operational concerns related to costs, compliance and day-to-day business decisions, whereas expert interviews offered broader reflections on policy coherence, system barriers and long-term transition pathways. This distinction was not predefined but developed inductively from the material and was subsequently used to structure the presentation of findings.

Following the analysis, the findings were synthesized and presented internally at Sirk Norge in two separate sessions: one focusing on insights from the Annual Conference interviews, and one focusing on the R&I mapping and identification of potential actors. These sessions included discussion and feedback from staff members and were integrated into ongoing strategic and policy reflections within the organisation.

3.4 Ethical Considerations

All interviews were conducted in accordance with basic ethical principles for qualitative research. Participants were informed about the purpose of the project and that the material would be used for academic work and internal learning within Sirk Norge. Participation was voluntary, and interviewees could withdraw at any point. Verbal informed consent was obtained prior to recording. No identifiable personal information is included in the report, and responses are presented in anonymized and aggregated form. Data were stored securely and were accessible only to the researcher and relevant staff at Sirk Norge. Given the internship context, care was taken to clarify the dual role of the researcher as both intern and master's student, and to ensure that participation was not perceived as obligatory.

3.5 Methodological Limitations

Several limitations should be acknowledged. The short interviews conducted during the Annual Conference limited the depth of individual responses, as participants often had limited time and were engaged in parallel activities. While this constraint reduced detail, it enabled broader coverage across sectors. In addition, because all company interviews were conducted within a conference setting, the sample reflects

actors who are already engaged in circular economy discussions, and may not represent the full diversity of perspectives within Norwegian industry.

The expert interviews provided greater depth but involved a smaller number of participants, meaning their views cannot be taken as representative of all stakeholders. The R&I mapping was constrained by limited access to detailed project documentation, making it difficult to assess project outcomes or long-term impacts in depth. Despite these limitations, the combination of interview material and document-based mapping provides a structured basis for analyzing how circular economy policies and instruments are perceived across different levels of the Norwegian resource recovery sector.

4. FINDINGS

4.1 Industry Perspectives on Circular Economy

This section presents findings from the company interviews conducted at Sirk Norge's Annual Conference and focuses on industry perspectives from actors already engaged in recycling, resource recovery and related circular value chains. As all interviews were conducted in this setting, the findings reflect the views of companies that are actively involved in circular economy activities and should not be understood as representative of Norwegian industry more broadly.

Across the interviews, circular economy was consistently discussed as a relevant context for business activity. Rather than questioning the overall relevance of circular economy, interviewees focused on the practical and economic challenges associated with implementing circular solutions in day-to-day operations. A central theme concerned the relationship between environmental ambition and economic viability. Eleven of the twenty interviewed companies explicitly highlighted tensions between the environmental value of circular practices and their current profitability. Circular solutions were widely described as meaningful from a resource and climate perspective, but frequently perceived as more expensive and financially risky than linear alternatives. This was particularly evident for activities such as advanced sorting, material recovery, repair and reuse, which were associated with higher labour costs, specialized technology and uncertain downstream markets.

Operational barriers were also prominent across the interviews. Nine companies pointed to logistics and geography as significant challenges, referring in particular to high transport and collection costs in a geographically dispersed country such as Norway. In addition, eight interviewees explicitly referred to regulatory complexity, describing overlapping or unclear requirements across waste, product and environmental legislation. These conditions were perceived as creating uncertainty and increasing administrative burdens, particularly for companies operating across multiple material streams or regulatory regimes.

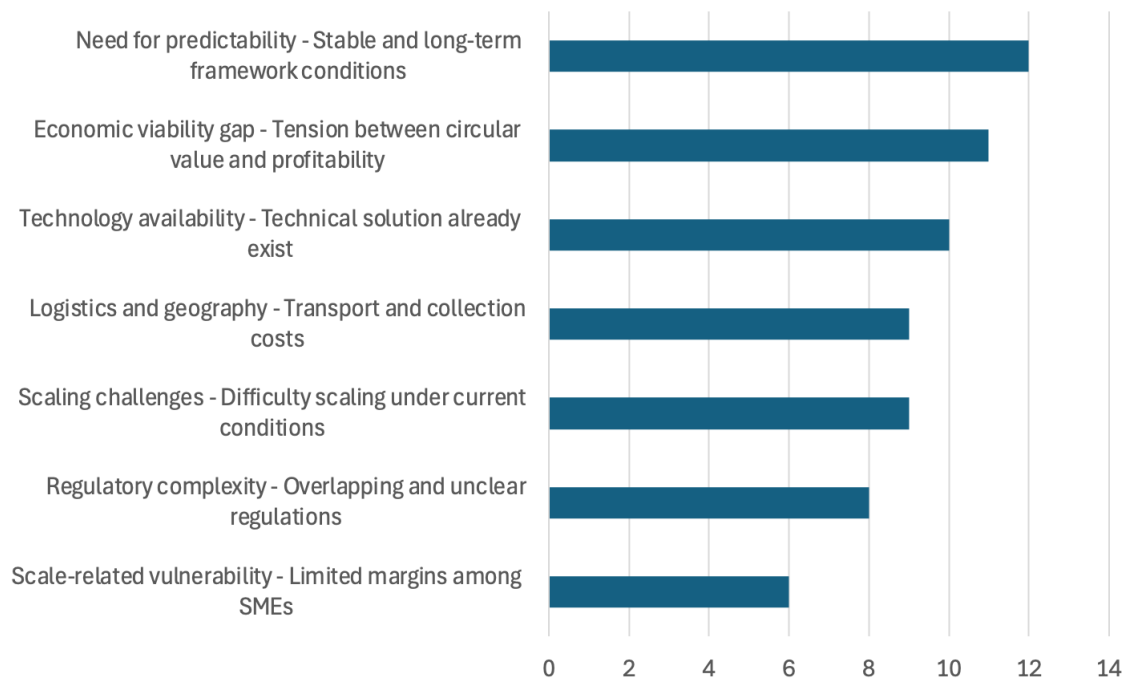
Challenges related to scale were especially salient among smaller actors. Six interviewees, all representing small and medium-sized companies, emphasized that limited scale and narrow financial margins make circular business models particularly vulnerable to changes in regulatory and economic framework conditions. For these companies, even relatively small adjustments in fees, taxes or support schemes were described as having immediate consequences for operational viability.

Despite these constraints, many interviewees stressed that technological limitations are not the primary barrier to further circular development. Ten companies explicitly stated that the necessary technologies and technical solutions already exist. Examples included digital systems for optimized collection and routing, advanced sorting technologies and solutions for repair, reuse and material recovery. However, nine interviewees emphasized that such solutions remain difficult to scale under current market conditions, particularly in the absence of stable demand and supportive economic incentives.

When reflecting on framework conditions more broadly, the need for stability and predictability emerged as a recurring concern. Twelve interviewees emphasized that investments in circular solutions often require long planning horizons, especially in capital-intensive parts of the value chain. Fragmented or short-term policy measures were described as a significant source of uncertainty, discouraging long-term investment even among companies with strong circular ambitions.

Taken together, the interviews convey a picture of cautious commitment among companies already engaged in circular value chains. While circular economy is broadly accepted as an important direction for future development, progress is perceived to depend primarily on economic viability, regulatory clarity and predictable framework conditions rather than on technological readiness, consistent with arguments presented in Section 2.1. This emphasis on economic and institutional conditions is consistent with previous research highlighting market barriers, regulatory fragmentation and weak price incentives as central obstacles to circular economy implementation (Kirchherr et al., 2018; OECD, 2019).

Figure 1 Summary of Industry Perspectives on Circular Economy



4.2 Economic Instruments and Policy Approaches

Building on the economic and operational challenges described in the previous section, interviewees were asked to reflect on which policy instruments they considered most important for enabling circular practices in Norway. Rather than reiterating the barriers associated with circular solutions, the focus here is on how different forms of state intervention are prioritized and how interviewees understand the interaction between economic, regulatory and informative measures.

When asked to identify the most important type of state intervention to promote circular economy, economic instruments were prioritized more frequently than regulatory or purely informative measures. Across the combined group of company and expert interviews (n = 31), economic instruments were most often identified as the primary lever for enabling circular practices. Regulatory measures were generally described as necessary to establish minimum standards, while informative measures were viewed as supportive but insufficient on their own to alter market behaviour.

Within the category of economic instruments, two measures stood out clearly. Reduced or differentiated taxes and fees, including VAT reductions, were identified as the most important economic instrument by thirteen interviewees. Public financial support was highlighted by eleven interviewees as the most important measure, particularly in relation to early-stage investments and risk reduction. Together, these responses indicate a strong emphasis on instruments that directly affect cost structures and financial risk.

Interviewees frequently linked these priorities to concerns about instability and frequent changes in framework conditions. Actors engaged in reuse and second-hand markets were particularly explicit on this point. As one representative from a non-profit reuse organisation explained, *“frequent changes in taxes and regulations create economic instability and make it very difficult to plan long-term operations”* (Annual Conference interview). This perspective was echoed by several respondents, who emphasized that predictable and nationally consistent framework conditions are essential for sustaining circular activities over time.

The importance of public financial support was especially emphasized by smaller and newer companies. These actors described support schemes as critical in early phases, allowing them to experiment, develop solutions and manage the financial risks associated with transitioning from pilot projects to commercial operations. As one smaller company engaged in circular services noted, *“without some form of public support in the early stages, it is very difficult to take the risk of developing and scaling circular solutions”* (Annual Conference interview).

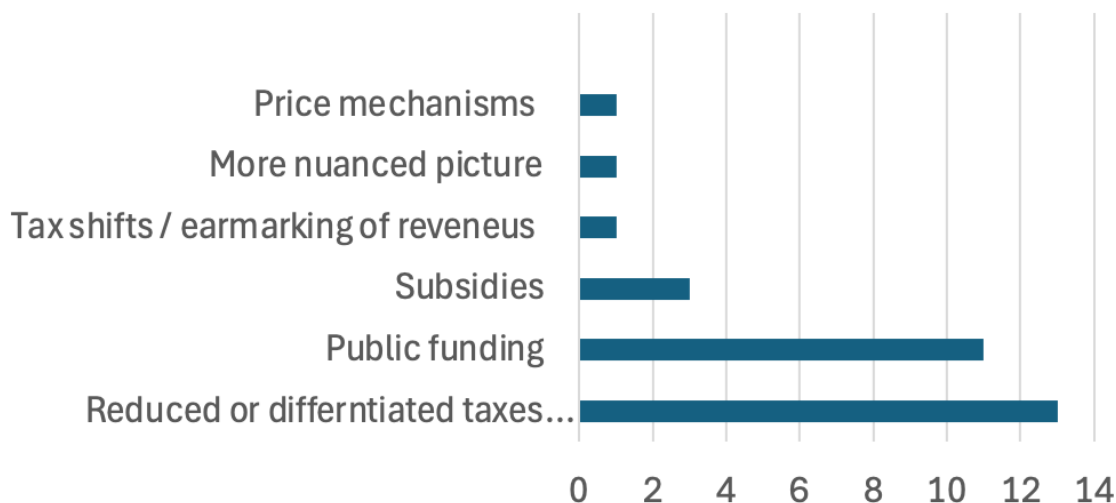
Several interviewees also stressed that economic instruments should be understood as part of a broader policy mix rather than as isolated measures. Reduced VAT

on repair, reuse or second-hand services was frequently discussed as an example of how demand-side measures can reinforce supply-side capacity. By lowering prices for consumers, such measures were seen to stimulate demand, which in turn helps firms build experience, competence and market volume over time. Similar demand-side dynamics are frequently highlighted in assessments of economic instruments for circular economy (EEA, 2023). In this sense, interviewees described circular transition as a cumulative process, where multiple instruments interact and reinforce one another.

Although regulation was widely recognized as necessary, both company and expert interviewees expressed concern that regulatory requirements and economic instruments are often adjusted too frequently. Several respondents argued that circular investments require stability that extends beyond short-term political cycles, and emphasized the need for common national standards that are less sensitive to changes in government. In this context, economic instruments were valued not only for their immediate financial effects, but also for the long-term signals they send regarding political commitment to circular economy objectives, reflecting broader arguments about the importance of policy stability and credibility in sustainability transitions (OECD, 2023).

Overall, the findings indicate that economic instruments are perceived as most effective when embedded in a coherent and stable policy mix. Rather than prioritizing a single intervention, interviewees emphasized the importance of combining economic, regulatory and informative measures in ways that reduce risk, stimulate demand and support long-term investment. These perspectives help explain why economic instruments feature so prominently in discussions about how circular economy ambitions can be translated into practical and scalable outcomes.

Figure 2 Summary of Perspectives on Economic Instruments



(Company interviews, $n = 20$; Expert interviews, $n = 11$)

4.3 Role of EU and National Policy

This section examines how companies and expert interviewees perceive the role of EU-level targets and national policy in shaping circular economy practices in Norway. In particular, it focuses on how the EU's target to double the use of secondary raw materials by 2030 is interpreted, and how its influence depends on national translation and supporting framework conditions (European Commission, 2020).

Across both company and expert interviews, the EU target was widely recognized as an important reference point for the circular economy transition. However, interviewees differed considerably in how they interpreted the target and what they perceived it to imply in practice. Rather than being understood as a direct operational requirement, the target was most often discussed as a long-term signal shaping expectations about future regulation, markets and investment conditions.

Among company interviewees, the EU target was primarily perceived as providing strategic direction rather than immediate operational guidance. Twelve of the twenty interviewed companies described the target as signaling where policy and markets are heading, without yet translating into concrete requirements for their own activities. This view was particularly common among technology providers and system suppliers, who associated the target with future demand for improved sorting, traceability and

material quality, but emphasized that its effects would materialize gradually rather than in the short term.

At the same time, uncertainty regarding implementation was a recurring theme. Several companies expressed difficulty in understanding how the target would be operationalized in practice, including which material streams would be prioritized and how trade-offs between recycling, energy recovery and environmental impact would be handled. As one company representative noted, *“the ambition is clear, but how it will actually be implemented in Norway is still very unclear”* (Annual Conference interview). This uncertainty was most frequently expressed by actors operating across multiple material streams or in sectors with tight margins, where unclear signals were seen as limiting the usefulness of the target for short-term investment decisions.

Alongside these concerns, a group of interviewees interpreted the EU target more explicitly as an opportunity. Eight company representatives highlighted that increased demand for secondary raw materials could strengthen their long-term market position by improving volumes, material quality and market stability, provided that supporting economic instruments follow. For these actors, particularly those already engaged in recycling, reuse and material recovery, the target was seen as potentially working in their favour. As one interviewee involved in material recovery explained, *“if demand for secondary materials actually increases, that changes the economics for the whole value chain”* (Annual Conference interview).

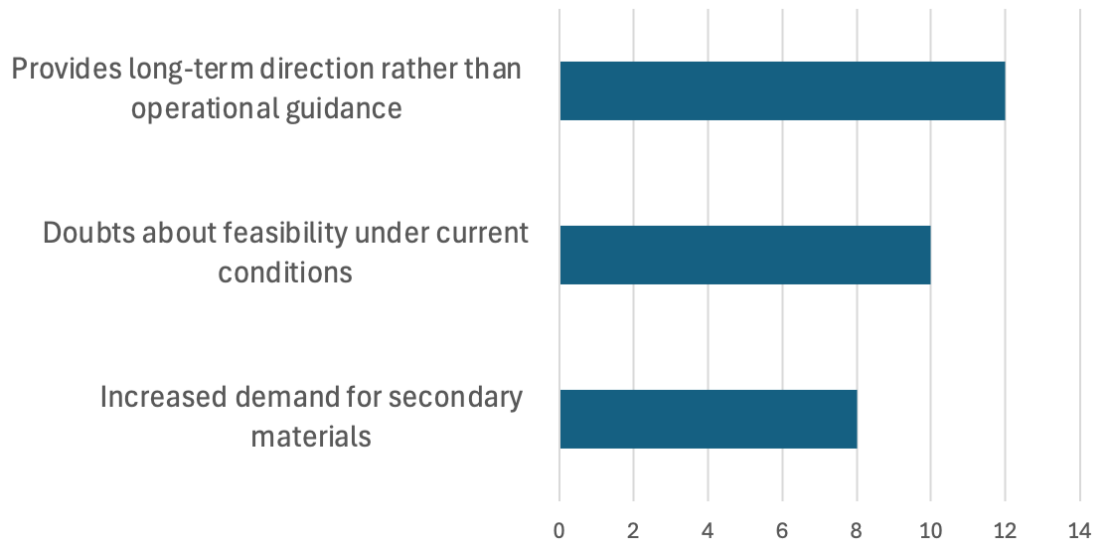
Concerns about costs and market readiness nevertheless featured prominently. Ten company interviewees questioned whether the target could be achieved under current economic conditions, pointing to persistent price differences between virgin and secondary materials, a challenge also highlighted in European assessments of circular economy markets (EEA, 2022). Several respondents expressed skepticisms about whether consumers and downstream markets are willing or able to absorb higher prices for circular products in the absence of complementary economic measures. Actors involved in large-scale waste handling and material recovery also highlighted potential tensions between reduced waste volumes and existing business models, noting that higher circularity could require significant changes in how value is created within the sector.

Among expert interviewees, the EU target was more frequently discussed in relation to Norway's institutional position within the EEA framework. Several experts emphasized that EU targets are not abstract ambitions for Norway, but part of a broader regulatory trajectory that will increasingly shape national policy. Through the EEA Agreement, a substantial share of EU environmental and circular economy legislation becomes binding for Norwegian actors, making adaptation unavoidable regardless of Norway's non-member status (Regjeringen, 2021). Experts also pointed out that EU circular economy policy is increasingly framed in relation to competitiveness, resource security and industrial strategy, increasing the likelihood that ambitious targets will be followed by concrete regulatory and economic measures over time.

Despite broad recognition of the EU target, both companies and experts emphasized the need for clearer national translation within the Norwegian policy context. Interviewees frequently referred to fragmentation across authorities, policy instruments and sectoral responsibilities as a key challenge. Without clearer national priorities and coordination, the EU target was perceived as likely to remain a high-level ambition rather than a driver of concrete change. As one interviewee noted, *“the target itself matters less than how it is translated into concrete national measures that companies can actually respond to”* (Annual Conference interview).

Taken together, the findings suggest that EU targets primarily shape expectations and long-term orientation rather than directly determining operational decisions. Their practical influence on circular practices appears to depend on sectoral position, market conditions and, critically, the extent to which national policy provides coherent, predictable and well-coordinated frameworks for implementation.

Figure 3 Summary of Perspectives on EU and National Policy



4.4 Research and Innovation (R&I)

This section presents findings related to research and innovation (R&I) from two complementary empirical sources. First, insights from expert and keynote interviews are presented, focusing on how increased R&I funding for circular economy is perceived and under what conditions such funding is expected to contribute to system-level change. Second, findings from a mapping of Norwegian companies receiving public R&I funding related to circular economy are outlined. Together, these sources provide insight into both how R&I policy is understood by key actors and how circular-oriented R&I activity is currently distributed in Norway.

4.4.1 Expert Perspectives on Research and Innovation

In the expert interviews, research and innovation were discussed primarily in relation to long-term transition capacity rather than short-term operational challenges. Interviewees were explicitly asked to reflect on Norway's and the EU's ambition to increase R&I spending to three per cent of GDP, and on what it would imply if a substantial share of this increase were directed towards circular economy. While most experts viewed increased R&I funding as a necessary condition for developing new circular solutions, technologies and business models, there was broad agreement that funding levels alone would not be sufficient to deliver systemic change, a concern

frequently raised in sustainability transition research, which emphasises that technological innovation must be accompanied by institutional and market transformation (OECD, 2023).

A recurring concern among experts related to fragmentation and lack of coordination. Several interviewees emphasized that circular economy challenges are inherently cross-sectoral, requiring collaboration across industries, value chains and geographical areas, consistent with innovation systems literature highlighting the importance of coordination across actors and institutions (Fagerberg, 2004). From this perspective, R&I projects focused narrowly on individual technologies or material streams were seen as having limited potential to influence broader systems. As one expert noted, *“there is a risk that we fund many good projects, but without connecting them to the actual material flows and infrastructure that need to change”* (expert interview, 2025).

Related to this, interviewees stressed the importance of clearer strategic direction and stronger links between R&I activities and industrial needs. Some experts explicitly warned that poorly coordinated R&I efforts could reinforce existing fragmentation rather than overcoming it. One interviewee argued that without alignment between funding priorities, industrial structures and policy objectives, circular R&I initiatives risk remaining disconnected from the markets and systems they are intended to transform (expert interview, 2025). In this context, references were made to earlier Norwegian industrial developments, such as in the oil, gas and fisheries sectors, where coordinated efforts, clustering and long-term strategic direction played a central role in building shared capacity and competitiveness.

Overall, the expert interviews reflect a cautious optimism towards R&I as a driver of circular transition. Increased funding was consistently viewed as necessary, but interviewees emphasized that clearer prioritization, improved coordination and stronger integration between policy, industry and research are required if R&I investments are to support system-level change.

4.4.2 Mapping of Circular Economy R&I Activity

In parallel with the interviews, a mapping of Norwegian companies receiving public R&I funding related to circular economy was conducted. The mapping

reviewed approximately 530 companies and focused on projects funded from late 2022 onwards. The purpose of this work was to identify patterns in funding distribution, highlight emerging actors and provide Sirk Norge with an overview of current circular-oriented R&I activity beyond its existing membership base.

The mapping revealed clear concentration patterns in the allocation of public R&I funding related to circular economy. While funding activity was distributed across different sectors and regions, a substantial share of the identified funding was concentrated among a relatively small number of large companies and industrial groups. Approximately NOK 160 million of the total NOK 210 million identified was allocated to nine companies among the top 28 by operating revenue, including subsidiaries of large industrial groups such as NG Nordic and Ragn-Sells. The remaining NOK 50 million was distributed across sixteen smaller companies.

TABLE 2. DISTRIBUTION OF PUBLIC R&I FUNDING BY COMPANY SIZE

Company category	Number of companies	Total R&I funding (NOK)	Share of total funding
Large companies (top 28 by operating revenue)	9	~ 160 000 000 NOK	~ 76%
Subsidiaries of large industrial groups*	2	Included above	-
Smaller companies	16	~ 50 000 000 NOK	~ 24%
Total	27	~ 210 000 000 NOK	100%

While the mapping does not allow for causal conclusions, it highlights structural patterns in how circular economy–related R&I funding is distributed.

To further explore these patterns, a subset of 75 companies was identified and ranked based on a combination of criteria, including R&I engagement, financial performance, membership potential and strategic relevance for circular economy development. While repeated participation in circular-oriented R&I projects was an important factor, the assessment also considered economic robustness and alignment with core circular value chains. The exercise provided a structured overview of companies that

are actively shaping the Norwegian circular innovation landscape and may represent important partners or members for the organisation.

In terms of thematic focus, the mapping showed that a large share of funded projects addressed specific technological or material challenges, such as recycling technologies, material substitution and process optimization. By contrast, fewer projects focused on cross-sectoral coordination, system integration or circular business model innovation. This pattern mirrors concerns raised in the expert interviews, particularly regarding fragmentation and the limited alignment between R&I activities and broader circular economy objectives.

The findings from both the expert interviews and the R&I mapping were actively used within Sirk Norge during the internship period. Results from the R&I mapping were presented internally on 11 November 2025, followed by a dedicated presentation on the interview analysis 15 November 2025. Both presentations were conducted for a core group within the organisation, including the internal supervisor responsible for the internship and Sirk Norge's public affairs contact, the managing director, the head of communications, the head of partnerships and a project advisor. The presentation of interview findings additionally included two subject-matter advisors working closely with circular economy policy and industry engagement.

These sessions provided input to discussions on membership recruitment, strategic positioning and competence development within the organisation. In particular, the R&I mapping contributed to a clearer overview of emerging actors, potential collaboration opportunities and areas where knowledge exchange could be strengthened. While the long-term application of these insights extends beyond the internship period, the work contributed to Sirk Norge's internal understanding of how research and innovation activity relates to broader circular economy policy and industry dynamics.

Taken together, the findings indicate that research and innovation are widely viewed as necessary enablers of the circular economy transition, but insufficient on their own to deliver systemic change, a pattern also reflected in European assessments emphasizing that innovation must be embedded within coherent regulatory and market frameworks to generate systemic impact (EEA, 2022). While increased R&I funding is considered important by expert interviewees, both the interviews and the empirical

mapping point to persistent challenges related to fragmentation, coordination and alignment. These findings reinforce the broader pattern identified across the Findings chapter: progress towards a more circular economy depends not only on technological development, but on coherent frameworks that link innovation activities to policy objectives, material flows and industrial practice.

4.5 Analytical reflection

This section reflects analytically on the findings presented in Chapter 4 by linking them to the theoretical perspectives introduced in the literature review. The purpose is not to test theory, but to interpret how concepts from innovation economics, sustainability transitions and policy studies help explain the empirical patterns observed in the material. The findings point to recurring challenges related to economic viability, policy stability and coordination across instruments and actors. By relating these patterns to existing research, the analysis seeks to clarify why circular economy transitions remain difficult in practice, even in a context characterized by high political ambition and increasing regulatory pressure.

A central theme across the findings concerns the economic challenges associated with circular practices, particularly the gap between environmental value and commercial viability. Companies repeatedly described circular solutions as more costly and financially risky than linear alternatives, despite their acknowledged environmental benefits. This pattern closely aligns with theories of market failure and externalities, which suggest that socially desirable outcomes may be underprovided when private actors do not capture the full benefits of their investments (OECD, 2019). In the context of circular economy, positive environmental externalities such as reduced emissions, lower resource extraction and waste prevention are not fully reflected in market prices (Kirchherr et al., 2017; EEA, 2022). As a result, firms face weak economic incentives to invest in circular solutions under existing market conditions. The findings add empirical depth to this theoretical perspective by illustrating how such market failures are experienced in practice, where higher costs and uncertain returns directly shape investment decisions.

The findings also reflect dynamics associated with linear economic logic, path dependency and lock-in effects. Although interviewees often emphasized that

circular technologies and solutions already exist, they described significant difficulties in scaling these under current conditions. Established linear systems benefit from economies of scale, mature infrastructure and well-functioning markets, making them cheaper and less risky than emerging circular alternatives (OECD, 2019). These dynamics are well documented in the literature on sustainability transitions and innovation economics, where path dependency helps explain why existing systems tend to persist even when more sustainable alternatives are available (Geels, 2002; Geels, 2011). The empirical material reinforces this perspective by showing that the main barrier to transition is not technological readiness, but rather the economic and institutional conditions that continue to favour linear production and consumption patterns.

Importantly, the findings suggest that these challenges are particularly pronounced for smaller actors. Limited financial buffers, shorter planning horizons and greater sensitivity to regulatory and economic change make small and medium-sized companies more exposed to uncertainty. While the literature often emphasizes deeply embedded structures and long-term lock-in effects (Geels, 2011), the findings highlight how frequent changes in framework conditions can further slow transitions by increasing perceived risk. Even actors with strong circular ambitions may delay or limit investments when future policy signals are perceived as unstable or unpredictable. This observation adds nuance to existing theory by drawing attention to stability and predictability as enabling conditions for transition, rather than focusing solely on structural constraints (Rogge & Reichardt, 2016).

The strong emphasis placed by interviewees on economic instruments can also be understood through the lens of policy-mix theory. Existing research highlights that no single policy instrument is sufficient to drive sustainability transitions, and that combinations of regulatory, economic and informational tools are required (Rogge & Reichardt, 2016). The findings clearly support this view. Many interviewees expressed strong preferences for specific instruments, particularly economic measures such as reduced taxes, fees or public support. At the same time, these preferences were rarely articulated in isolation. Across the material, interviewees consistently stressed that investments in circular solutions depend on how different instruments interact and on whether framework conditions are predictable over time. In this sense, while specific instruments were prioritized differently by different actors, stability and coordination

across policy measures emerged as critical enabling conditions. This observation aligns with policy-mix literature emphasizing instrument interaction, while also highlighting the practical importance of temporal consistency for firms making long-term investment decisions (Rogge & Reichardt, 2016; OECD, 2019).

Differences between company and expert perspectives further illustrate how interpretations of circular economy policy are shaped by actors' positions within the broader system. Company representatives primarily framed challenges in terms of operational viability, costs and immediate investment risk, whereas experts more often adopted a system-oriented perspective focused on coordination, long-term trajectories and policy coherence. These differences do not represent conflicting assessments of circular economy policy, but rather reflect how actors' institutional roles, interests and proximity to implementation influence their interpretations. This distinction is consistent with insights from the Advocacy Coalition Framework, which emphasizes that actors within the same policy subsystem may prioritize different concerns depending on their position and responsibilities (Sabatier & Jenkins-Smith, 1993). Recognizing these differences helps explain why demands for economic incentives and calls for improved coordination coexist within the same transition discourse.

The role of EU-level targets provides further insight into the relationship between strategic direction and practical implementation. The findings show that the EU target to double the use of secondary raw materials by 2030 primarily functions as a long-term directional signal rather than an immediate operational driver. This is consistent with existing research suggesting that high-level targets shape expectations and guide long-term orientation, but require national translation and supporting instruments to influence concrete practices (EEA, 2022). Companies' uncertainty regarding implementation mechanisms, market readiness and cost implications underscores the importance of national policy coherence, a point also highlighted in comparative studies of circular economy governance in other European contexts (Niskanen et al, 2020).

Insights from the research and innovation mapping add an additional analytical layer when viewed through the lens of innovation economics. The observed concentration of public R&I funding among large companies and industrial groups is consistent with theories emphasizing risk, uncertainty and absorptive capacity (OECD,

2019). Larger firms are generally better positioned to manage the financial and organizational risks associated with innovation, and therefore more likely to engage repeatedly in publicly funded R&I activities (Cohen & Levinthal, 1990). From this perspective, the concentration of funding does not necessarily indicate a failure of innovation policy, but rather reflects rational allocation patterns under conditions of uncertainty. At the same time, the findings point to a potential tension between efficiency and inclusiveness, as smaller actors with limited capacity may face greater barriers to accessing R&I funding despite their potential role in developing niche or emerging circular solutions.

Taken together, the analytical reflection suggests that the findings largely support existing theoretical perspectives on circular economy transitions, while also providing important empirical nuances. In particular, the emphasis placed by industry actors on stability, predictability and coordination highlights aspects of transition dynamics that are often acknowledged in theory but less concretely examined. By grounding concepts such as market failure, path dependency and policy mixes in empirical experience, the findings contribute to a more practice-oriented understanding of why circular economy transitions remain challenging despite technological potential and political ambition. These analytical insights provide a foundation for assessing the concrete value created for Sirk Norge during the internship, which is discussed in the following chapter.

5. CONTRIBUTION TO THE HOST ORGANISATION

This chapter outlines the concrete value created for Sirk Norge during the internship period. While the initial internship plan emphasized contributions to reporting, database development and strategic support functions, the scope of the work evolved over time. In practice, the internship resulted in two main analytical contributions: the development of a structured interview dataset and a comprehensive mapping of circular economy–related research and innovation (R&I) activity in Norway. Together, these outputs strengthened the organisation’s empirical foundation and provided structured input to membership and strategy processes.

Although the internship was initially framed around supporting ongoing organizational tasks, the role became increasingly analytical. Within the flexibility

provided by the organisation, I independently designed and conducted a structured interview project during the Annual Conference and developed a comprehensive R&I mapping exercise. Rather than contributing only to existing workstreams, the internship generated new analytical material that extended the organisation's internal knowledge base.

A central contribution was the development of a dataset based on 31 semi-structured interviews with company representatives and expert stakeholders. I coded and organized the material into comparable categories, allowing recurring themes and priorities to be identified systematically. This provided the organisation with a clearer overview of how actors within the sector perceive economic instruments, regulatory conditions and EU-level targets. By structuring the interviews in this way, the material became easier to compare across actors and more usable in internal discussions related to policy positioning and strategic planning.

The second major contribution was the mapping of circular economy-related R&I activity. Approximately 530 companies were reviewed, and publicly funded projects from late 2022 onwards were identified and categorized. The mapping documented roughly NOK 210 million in relevant funding and analyzed how these funds were distributed across company size and industrial groups. The analysis revealed a concentration of funding among a limited number of large actors, while smaller companies received a comparatively smaller share. Although no causal conclusions can be drawn, the mapping provided a clearer picture of structural patterns in innovation participation and funding allocation.

As part of this work, I also developed new analytical categories within the membership database to better capture innovation participation, financial robustness and sectoral positioning. In addition, 75 companies were identified and ranked based on four criteria: membership fee potential, financial performance and profitability, level of R&I engagement, and strategic relevance for circular economy development and Sirk Norge's positioning. The ranking therefore did not rely solely on R&I funding participation, but combined economic indicators with innovation activity and sectoral relevance. This approach reflected strategic considerations related to long-term membership sustainability, competence development and sector representation.

Both the interview dataset and the R&I mapping were presented internally and discussed in relation to ongoing strategy and policy work. While the long-term organizational effects cannot be fully assessed within the internship timeframe, the work contributed to strengthening Sirk Norge's analytical foundation and supported a more structured approach to membership development and strategic engagement.

Beyond the analytical components, I had more limited involvement in other organizational activities. During the Annual Conference, I contributed to the evaluation of exhibitors, including participation in the selection of "Exhibitor of the Year." While my role in the overall organisation of the conference was modest, the interviews conducted during the event may provide useful input for future programme development and thematic focus. In addition, I participated in one meeting related to recruitment and competence development, where I shared reflections from my experience as an intern and provided suggestions on how internships and collaboration with students can be used as a low-threshold entry point for strengthening competence within the sector. Although this was a small contribution, it allowed me to share perspectives on how the circular economy field can attract younger professionals.

Taken together, the internship created value by producing structured knowledge resources, improving internal systematization of member-relevant data, and contributing analytical input to strategic discussions. While the long-term impact of these contributions will unfold over time, the work strengthened Sirk Norge's empirical basis for decision-making and supported its ongoing efforts to position itself as a knowledge-driven actor within Norway's circular economy landscape.

6. REFLECTIONS

This chapter reflects on learning outcomes and limitations from the internship, and considers potential follow-up work that could strengthen both Sirk Norge's analytical capacity and future research on circular economy policy in Norway. The reflections build on the empirical work described in the methodology chapter and the patterns presented in the findings: a strong emphasis on economic viability, the need for predictable framework conditions, and the importance of coordination across instruments and actors.

A central professional learning outcome was developing practical experience with stakeholder engagement. Conducting interviews during the Annual Conference required

clear communication, preparation and flexibility. The setting was fast-paced, and conversations were often short. This meant that questions had to be precise and structured, while still allowing space for follow-up when something interesting emerged. Preparing in advance by reviewing companies and defining clear themes made it possible to collect comparable data across different actors.

The second round of interviews with experts provided a different type of learning. These conversations were less time-constrained and more reflective. They required adjusting the discussion to each interviewee's role while maintaining consistency in core questions. Comparing company and expert perspectives later in the analysis strengthened the understanding of how different actors experience the same policy landscape in different ways.

The internship also strengthened methodological skills in qualitative analysis. Coding the interviews and organizing them into categories made it easier to identify recurring patterns rather than relying on general impressions. One important learning point was the need to stay close to the material. It was tempting to interpret quickly, but careful categorization and counting responses helped ensure that conclusions were grounded in the data. The experience demonstrated how structured qualitative work can create clarity even with a relatively small dataset.

Academically, the internship made theoretical concepts more concrete. Ideas such as market failure, lock-in effects and policy mixes were no longer abstract concepts from lectures, but became visible in how companies described their everyday challenges. For example, many interviewees stated that circular solutions already exist, but that they are difficult to scale because market conditions favour cheaper linear alternatives. This directly reflects theories about how existing systems can remain dominant even when better alternatives are available.

The emphasis on policy stability and predictability was also particularly instructive. Interviewees repeatedly stressed that long-term investments require stable framework conditions. This gave practical meaning to policy-mix theory, which highlights not only the design of instruments, but also how they interact and how consistent they are over time. The internship therefore strengthened the ability to connect theoretical frameworks from the MIRS programme to real-world observations.

The work also provided insight into the role of intermediary organisations. Sirk Norge operates between companies, policymakers and EU developments. Through the internship, it became clearer how such organisations collect knowledge from members, translate it into policy positions, and attempt to influence regulatory processes. Observing and contributing to this role helped deepen the understanding of governance and advocacy dynamics discussed in the literature review.

Despite these learning outcomes, several limitations should be acknowledged. First, the short format of the conference interviews limited the depth of individual responses. While this allowed for broader coverage across sectors, it meant that some complex issues could not be explored in detail. A longer case-study approach with fewer companies might have produced deeper insight into specific organizational challenges.

Second, the interview sample mainly consisted of actors already engaged in circular economy activities. This means the findings reflect the perspectives of relatively committed actors and should not be generalized to Norwegian industry as a whole. Companies outside the circular economy field may have very different views.

Third, the study did not include direct interviews with policymakers or civil servants responsible for designing and implementing instruments. The report therefore captures how policies are experienced by industry actors and experts, but not how trade-offs and political compromises are handled inside government institutions. Circular economy policy often involves balancing environmental goals, competitiveness concerns and social considerations. Including more perspectives from authorities would likely have provided a more complete picture of these complexities.

The R&I mapping also has limitations. The dataset was built from publicly available information, and detailed project data were not accessible. As a result, the mapping identifies patterns in funding allocation but does not assess the actual impact or performance of projects. The concentration of funding among large companies may reflect capacity and experience, but the analysis cannot fully explain why this pattern occurs.

These limitations point toward possible future work. One potential development is the creation of a circular “barometer” that regularly tracks key developments relevant to Sirk Norge’s members. Such a tool could combine selected quantitative indicators with

periodic interviews to monitor changes in policy conditions and industry experiences over time. The interview dataset could also be revisited and analyzed further. For example, responses could be compared more systematically across sectors or company size. In addition, follow-up interviews after policy changes could help assess whether perceptions shift over time.

The R&I mapping could be expanded into a continuously updated database. This would allow Sirk Norge to monitor innovation trends, identify emerging actors earlier, and strengthen collaboration between companies working on related material streams or technologies. Finally, future research could include more direct dialogue with policymakers. Since many interviewees emphasized instability and fragmentation, it would be valuable to examine how policy coordination challenges are perceived within ministries and agencies. This would help balance industry perspectives with institutional realities.

Overall, the internship provided both practical and academic development. It strengthened skills in qualitative research, stakeholder engagement and applied policy analysis. It also demonstrated how theoretical concepts from innovation and sustainability studies can be used to interpret real-world challenges. At the same time, the experience showed that circular economy transitions are shaped not only by technology, but by economic incentives, institutional coordination and the credibility of policy signals over time. These insights provide a useful foundation for further work in both professional and academic context.

7. CONCLUSION

This internship report has examined how economic and regulatory instruments shape circular practices in Norway, and how these instruments are perceived by companies and expert stakeholders within the circular economy field. By combining semi-structured interviews with a mapping of research and innovation activity, the report provides insight into how policy ambitions are experienced in practice.

The findings show that circular economy is widely accepted as an important direction for future development. However, the transition is perceived as economically demanding and dependent on stable framework conditions. Companies consistently pointed to gaps between environmental ambition and commercial viability, highlighting

higher costs, uncertain markets and frequent regulatory adjustments as key challenges. While technological solutions are often available, scaling them depends on predictable economic incentives and coherent policy design.

The analysis confirms several insights from existing research on sustainability transitions. Market failures, path dependency and policy-mix dynamics are not abstract concepts, but visible in how companies describe their everyday realities. At the same time, the empirical material adds nuance by emphasizing the practical importance of stability and coordination across instruments over time. Differences between company and expert perspectives further illustrate how actors' positions within the system shape their interpretation of policy developments.

Beyond its academic contribution, the internship created concrete value for Sirk Norge. The development of a structured interview dataset and a systematic R&I mapping strengthened the organisation's empirical foundation. The work supported internal discussions on membership development, innovation trends and strategic positioning. By organizing data in a comparable and accessible format, the internship contributed to a more structured knowledge base that can inform future policy engagement and member outreach.

For the MIRS programme, the internship demonstrated how theoretical frameworks from innovation studies, sustainability transitions and policy analysis can be applied in a real organizational setting. Concepts such as policy mixes, market failures and innovation systems proved directly relevant when analyzing empirical material. The experience strengthened the ability to move between theory and practice, and to translate academic perspectives into insights useful for an industry organisation.

Overall, the internship illustrates that circular economy transitions are not only technological challenges, but institutional and economic ones. Achieving higher levels of circularity requires credible incentives, coordinated governance and long-term policy commitment. Understanding how these dynamics are experienced by industry actors is essential for designing realistic and effective transition strategies. The work carried out during this internship contributes, in a modest but concrete way, to that understanding

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APPENDICES

Interview Guide – Company Interviews

My name is Vegard Lund Røer, and I am currently completing a Master's degree in Innovation and Sustainability in Lisbon. I am writing my thesis in collaboration with Sirk Norge. The purpose of this study is to explore which economic instruments and incentives can best promote circular solutions in Norway. The interview is anonymous and will take approximately five minutes. Audio recording was conducted only with verbal consent.

Questions

1. Can you briefly describe your company and how your activities relate to circular economy?
2. The EU Circular Economy Action Plan prioritizes seven value chains (electronics/ICT, batteries/vehicles, packaging, plastics, textiles, construction and food/water/nutrients). Which of these are most relevant for your company?
3. Which type of policy instrument is most important for promoting circular economy in your sector?
 - Economic (e.g., taxes, subsidies, support schemes)
 - Regulatory (e.g., laws, requirements, standards)
 - Informative (e.g., campaigns, labelling, knowledge-sharing)
4. If you had to choose one specific economic instrument that would most effectively increase circularity in your sector, which would it be?
5. What do you perceive as the main barriers to increasing circular practices?
6. The EU has set a target to double the use of secondary raw materials by 2030. What does this target imply for your company?

Interview Guide – Expert and Keynote Interviews

1. Can you briefly describe your organisation and how your work relates to circular economy?

2. If you had to choose one specific economic instrument that would most effectively increase circularity in your sector, which would it be?
3. The EU has set a target to double the use of secondary raw materials by 2030. What does this imply for your sector or area of responsibility?
4. Norway and the EU aim to increase R&I spending to 3% of GDP. If a significant share of this increase were directed towards circular economy, what impact would this have on your sector?

Top 10 Companies by Circular R&I Funding

