CIRCUIT

CIRCUlar and resilient transport infrastructures

Deliverable 1.2

Up-stream & Down-stream Supply Chain Actors Needs

Work Package: WP1 — Holistic Approach Setting up & Co-creation | Date: October 2024 | Authors: IECA (lead), Infra Plan, UC, DTT, ACCIONA

Context

Despite growing political ambition around the circular economy, adoption in the transport infrastructure sector remains slow and uneven. Understanding why — and identifying who needs to act — is essential to designing effective interventions.

This deliverable combines a systematic literature review (47 barriers identified across academic and industry sources) with a direct consultation process involving practitioners across the value chain: a survey followed by in-depth interviews.

The findings provide an evidence-based map of the barriers, enablers, motivations and levers relevant to each actor type — from designers and contractors to asset owners, standardisation bodies and public authorities.

At a Glance

Method: Literature review + survey + interviews

Barriers identified: 47, classified across 2 main families

Respondents: Practitioners across EU supply chain

Key actor: Public institutions (clients + regulators)

Primary motivator: Regulatory compliance (not ESG)

Key Findings

🚧 47 barriers were identified and classified into two groups: Institutional-Economic-Social barriers (deemed more critical) and Technical-Technological barriers. The former significantly outweigh the latter in terms of impact.

📉 Economic factors are the hardest barriers: high upfront costs, lack of whole-life costing in procurement decisions, underdeveloped secondary material markets and unclear business cases for circularity.

🤝 Value chain fragmentation and lack of cross-actor collaboration are structural obstacles. Circularity requires coordination across design, construction, maintenance and end-of-life — currently absent in most projects.

🏛️ Public institutions are identified as the single most powerful lever: as major clients of infrastructure projects, they can drive market change through procurement rules, financial instruments and updated technical specifications.

📊 ESG values are widely shared across the sector — but they are not a strong enough motivator. The primary driver of action is compliance with legal requirements, not voluntary commitment.

Takeaways for Practitioners

1. Do not rely on voluntary ESG commitments to drive circularity — regulatory signals are the effective lever. Policy makers should prioritise updating technical specifications and procurement frameworks.
2. Introduce whole-life costing (LCC) systematically in tender evaluation to make circular solutions financially competitive against conventional alternatives.
3. Develop secondary material market infrastructure — quality assurance frameworks for recycled/reused materials are a prerequisite for wider adoption.
4. Invest in cross-actor collaboration mechanisms at project and programme level — circularity cannot be achieved by single actors working in isolation.

Full deliverable (open access): **www.circuitproject.eu/resources**