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Holistic approach to foster CIRCULAR and resilient transport InfraStructures and support the deployment of Green and Innovation Public Procurement and innovative engineering practices.

Objectives

CIRCUIT is a pioneering EU-funded project, operating under the Horizon Europe framework. The project is committed to revolutionizing transport infrastructures through a dynamic blend of technological and non-technological innovations. The overall objective of CIRCUIT is to develop a holistic approach supported by digital solutions and guidelines to foster the introduction of innovative engineering practices in the whole construction supply/value chain. This will deliver circular, sustainable resilient and smart transport infrastructure (both at urban and interurban level), and foster wider deployment of **GPP (Green Public Procurement)** and **IP (Innovation procurement)**.

- 1. Digital Transformation:**
Bridge the digitalization gap and elevate existing assets into smart infrastructure.
- 2. Safety and Efficiency:**
Alleviate congestion and minimize accidents.
- 3. Environmental Responsibility:**
Test and validate various technologies designed to reduce environmental impact in real-world scenarios.
- 4. Circular Economy Advocacy:**
Promote circular economy principles, performance-based design, reuse and recycle.
- 5. Energy Efficiency:**
Decrease energy consumption during construction and operation of transport infrastructures.
- 6. Impact beyond the project:**
Interoperability with design BIM and LCA tools.
Integration of CIRCUIT's outcomes into public procurement processes.

Strategic Pillars for Sustainable Transport Infrastructure

CIRCUIT's groundbreaking technologies will be rigorously tested in operational environments across five pilot locations in the EU. Each pilot aligns with one or more of the four strategic pillars: Digitalization, Recycle, Reuse, and Energy.

Pillar I: Digitalisation

- Target: Revolutionize engineering practices with digital tools.
- Introduce a new digital platform, circularity analytics, and digital product passports.
- Enhance smart solutions for congestion reduction and safety improvements.

Pillar II: Recycle

- Target: Prolong the life of transport infrastructure and promote sustainability.
- Innovate asphalt pavements, soil stabilization, and low carbon cementitious materials.

Pillar III: Reuse

- Target: Demonstrate the suitability of reusing strategies in civil engineering.
- Explore reuse technologies for bridges and foundations.

Pillar IV: Energy

- Target: Improve energy efficiency in transport infrastructure.
- Evaluate green energy sources and technologies for reduced energy consumption.
- Adaptation to various urban and interurban settings, and different transportation modes.

Our Pilots Across Europe

CIRCUIT's groundbreaking technologies will be rigorously tested in operational environments across five pilot locations in the EU. Each pilot aligns with one or more of the four strategic pillars: Digitalization, Recycling, Reuse, and Energy.



**Pilot 1:
Croatia**

Pilot owner: HAC (Croatian Motorways)
Strategic pillars covered: Digitalisation
Focus Pillar: Digitalisation
Infrastructures included: Roads and bridges
Location: Section on Zagreb-Rijeka highway



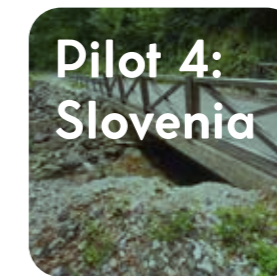
**Pilot 2:
Spain**

Pilot owner: MITMA (Spanish Ministry of Transport and Urban Agenda)
Strategic pillars covered: All
Focus Pillar: Recycling
Infrastructures included: Roads and Tunnels
Locations: Revilla de Camargo N623 national road and A8 motorway (Hoz Tunnel), Cantabria



**Pilot 3:
The Netherlands**

Pilot Owner: WSHD (Waterschap Hollandse Delta)
Focus Pillar: Recycling
Infrastructures included: Roads and Embankments



**Pilot 4:
Slovenia**

Pilot owner: CRNA (Črna na Koroškem municipality), Slovenia
Focus pillar: Reuse
Other pillars covered: Recycling and Digitalisation
Infrastructures included: Local roads, Bridges and Geotechnical structures
Location: Bistra Creek



**Pilot 5:
Italy**

Pilot Owner: ANAS (Operator of the Italian network of roads and motorways (part of the Gruppo Ferrovie (Italian State))
Focus Pillar: Energy
Infrastructures included: Roads and Tunnels
Locations: Rome Motorway A90 and A91