



CIRCUIT

**DEEP DIVE
INTO THE
PROJECT'S 5
PILOT
COUNTRIES**





From cutting-edge digitalisation to innovative energy solutions, **CIRCUIT's pilot countries are reshaping the future of transport infrastructure.**

CIRCUIT's groundbreaking technologies will be rigorously tested in operational environments across five (5) pilot locations in the European Union.

Each pilot aligns with one or more of the four (4) pillars.





PILOT CROATIA



Location:

- Section on Zagreb-Rijeka Highway



Pillar:

- Digitalisation



Key Technology:

- Digitalisation of existing assets
- UAVs for the inspection of structures
- Application of circularity KPIs



Pilot Leader:

- Croatian Motorways (HAC)

Support Partners:

- InfraPlan
- University of Zagreb
- DigitalTwin Technology (DTT)
- Acciona



Infrastructure:

- Roads
- Bridges

HAC is leading the way in drone-based inspections **to enhance safety, efficiency, and digitalisation of highway infrastructure.**

UAVs are being used to develop digital twin models, allowing for accurate, real-time inspections.





Location:

- N-623 National Road
- A8 Motorway (Hoz Tunnel)
- Cantabria



Pillar:

- Recycling
- Green Solutions



Key Technology:

- Adaptive lighting and ventilation systems
- Smart traffic systems
- Innovative asphalt materials



Pilot Leader:

- Spanish Ministry of Transport

Support Partners:

- University of Cantabria
- Acciona
- UBERBINDER
- Ingevity
- Algorab



Infrastructure:

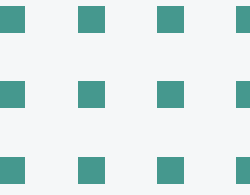
- Roads
- Tunnels

This pilot is focused on **delivering more circular and greener asphalt technologies and on reducing energy consumption** in tunnels and improving traffic systems.

Recycling asphalt using innovative materials, and applying energy efficiency and smart traffic management solutions will help **to reduce the environmental impact and boost sustainability of roads.**



PILOT SPAIN





PILOT

NETHERLANDS



Pilot Leader:

- Waterschap Hollandse Delta (WSHD)

Support Partners:

- INGEO
- University of Zagreb
- InfraPlan



Location:

- Oostmolendijk



Pillar:

- Recycling



Key Technology:

- Soil Stabilization
- Use of Secondary raw materials for soil stabilisation
- Numerical Modeling



Infrastructure:

- Roads
- Embankments

In the Netherlands, innovative soil stabilization methods are being tested to reinforce dikes using sustainable materials, aiming to **prevent erosion and increase the resilience of embankments.**





PILOT SLOVENIA



Location:

- Črna na Koroškem Municipality
- Meža River



Pillar:

- Reuse
- Recycling
- Digitalisation



Key Technology:

- GRS Abutments
- 3D Printing
- Modular Prefabricated Superstructure



Pilot Leader:

- Municipality of Črna na Koroškem

Support Partners:

- ZAG
- Beton Lučko
- InfraPlan



Infrastructure:

- Bridges
- Local Roads
- Geotechnical Structures

Slovenia is piloting the **bridge construction** using the Geosynthetic Reinforced Soil (GRS) abutments to improve **infrastructure resilience**, reusing beams in the modular superstructure to **reduce the environmental impact** and is showcasing **digital fabrication in construction** through 3D printed safety wall.





PILOT ITALY



Location:

- Rome Motorway A90 & A91



Pillar:

- Energy



Key Technology:

- Adaptive lighting and ventilation systems



Pilot Leader:

- ANAS

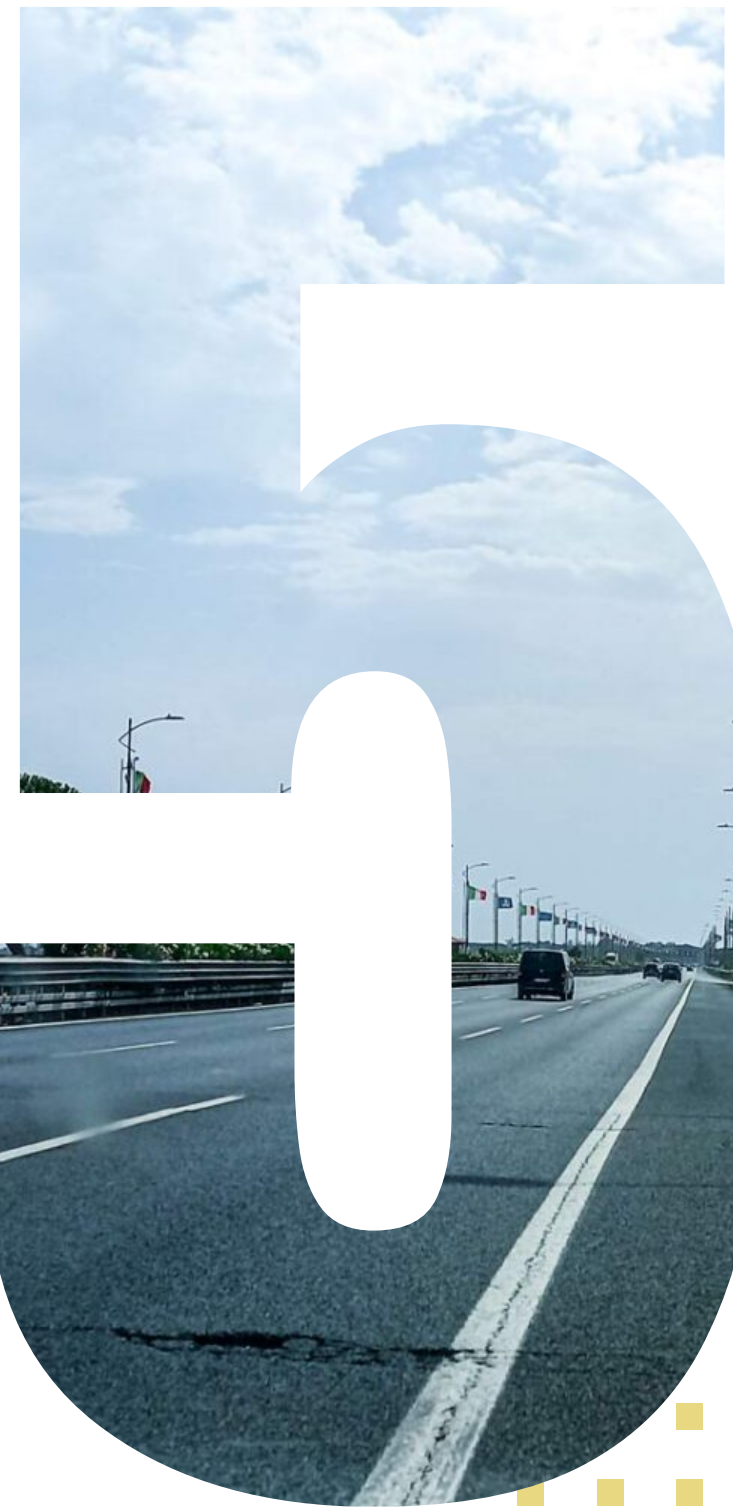
Support Partners:

- Algorab
- Acciona



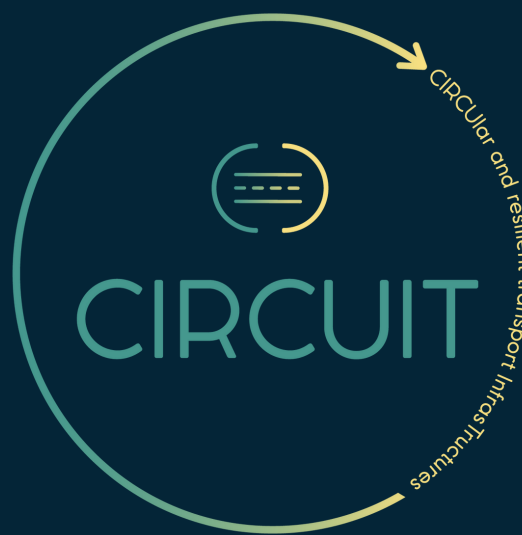
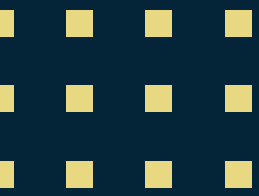
Infrastructure:

- Roads
- Tunnels



Italy's pilot focuses on **cutting-edge energy-saving solutions** for road lighting and tunnel ventilation. Solar and wind-powered lighting poles, along with adaptive lighting and fan control systems are key **to reducing operational costs and energy consumption.**





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