The Institute of Asphalt Technology
Irish Branch

TII Circular Economy Policy and Strategy

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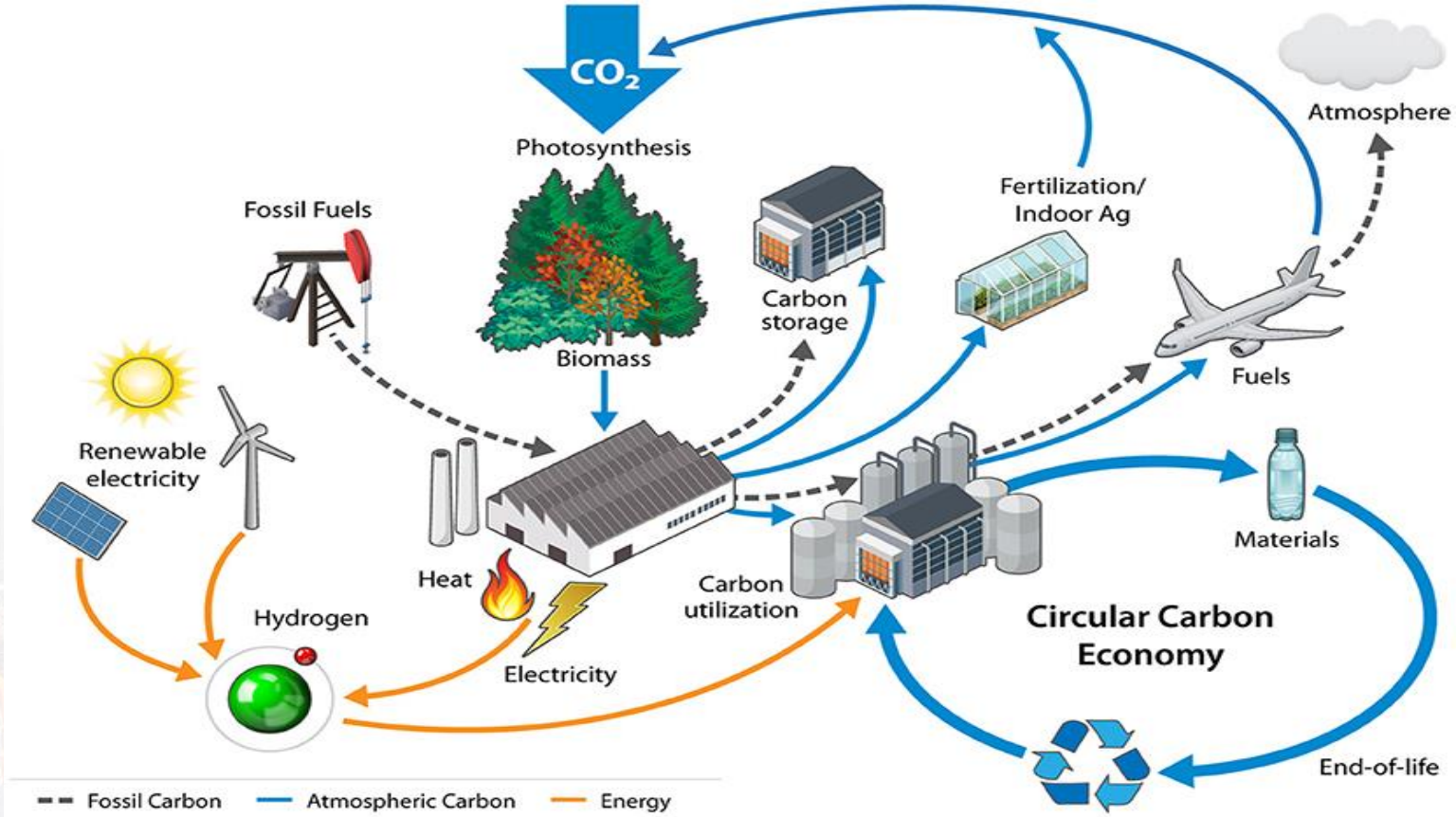
CO_2
Photosynthesis
Atmosphere
Fossil Fuels
Biomass
Carbon storage
Fertilization/ Indoor Ag
Fuels
Renewable electricity
Heat
Hydrogen
Electricity
Carbon utilization
Materials
Circular Carbon Economy
End-of-life
Fossil Carbon
Atmospheric Carbon
Energy

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Building Transport Networks for the Future

A Circular Economy Perspective

The equivalent of almost three planets will be required by 2050 to sustain current lifestyles.

Yet we still need to provide infrastructure.

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Building Transport Networks for the Future

A Circular Economy Perspective

What shall we do?

Continue to provide infrastructure.

Tackle barriers to existing processes.

Build on what we already do.

Generate opportunities for innovation.

Practical Application

TII Circular Economy Policy

- Circular Economy in Ireland
- Purpose
- Policy and Strategy underpinning the TII approach to circular economy
- Objectives
- Focus Areas

TII is working to adopt a circular economy approach in the activities, programmes and projects it delivers and funds.

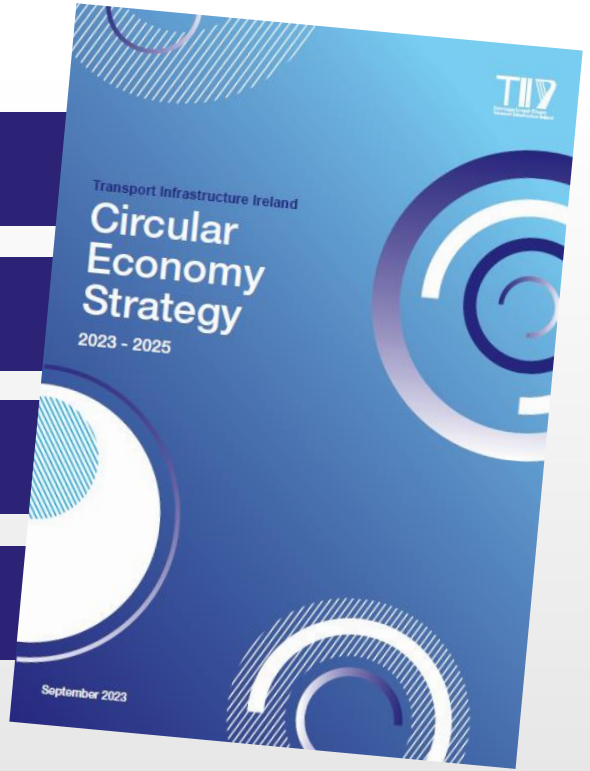
TII Circular Economy Policy

Objectives

- Reduce **Resource Consumption**
- Keep Assets Components and Materials at their **highest value**
- Maintain **safety** and technical function of services, assets and components
- Promote restorative and regenerative **design**
- Reduce **emissions**

TII Circular Economy Strategy

- Circular Economy and TIIs Strategic and Sustainability Aims
- Focus Areas
- TII Approach
- Circular Economy Actions



TII Circular Economy Strategy

Focus Areas

Dunkettle Interchange

- Life Cycle Assessment
- Materials and Data
- Asset Management
- Collaboration
- Transformation to Circular Systems
- Procurement

TII Circular Economy Strategy

Steps TII have been taking to transition from a linear to a circular economy

TII Circular Economy Actions

Guidelines for projects and programmes

Education and Training

Standards Creation and Updates

Circular Economy Innovative Pilot Projects

Collaboration

A series of circular economy workshops were undertaken with:

- Supply chain
- Local authorities
- Construction Industry
- Road Users
- Designers

Life Cycle Assessment

Materials & Data

Asset Management

Collaboration

Tranformation to Circular Systems

Procurement

Applying the Principles and Resources

How can circular economy be implemented on National Roads from a pavement perspective?

Applying the Principles and Resources

What are you already doing to create a circular economy?

Have you a plan for the waste generated on the project?

At what stage in the project can you make the biggest impact?

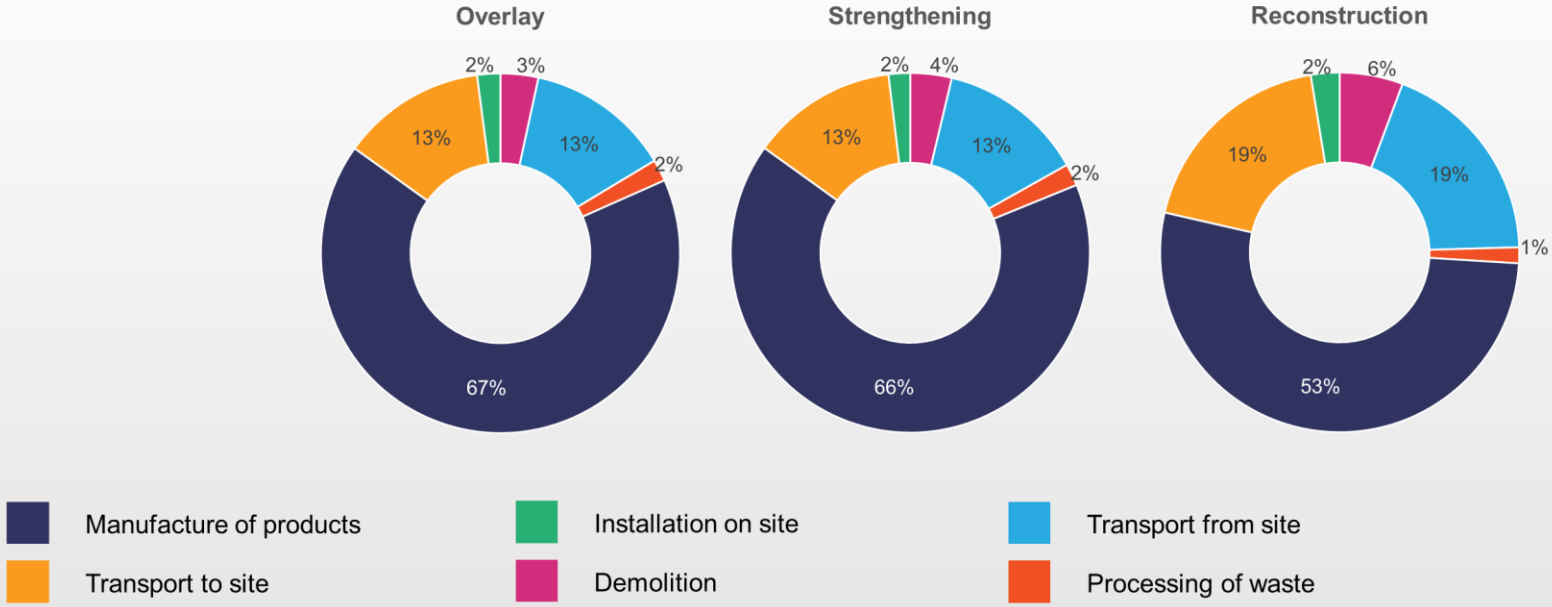
What are you doing to reduce natural resource consumption?

Have you reused something at its highest value in a project instead of recycling it?

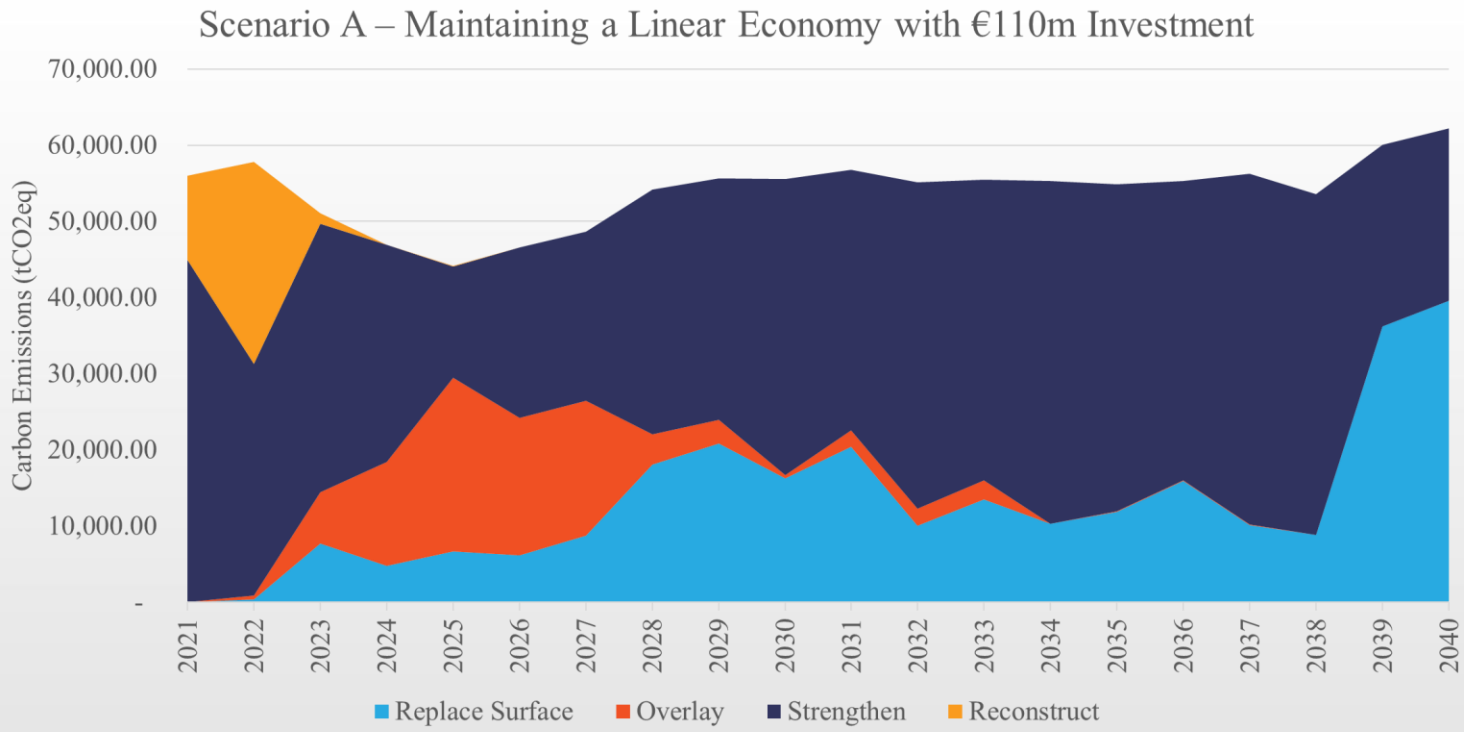
Have you designed a part of a project to be reused multiple times?

What are the main sources of carbon?

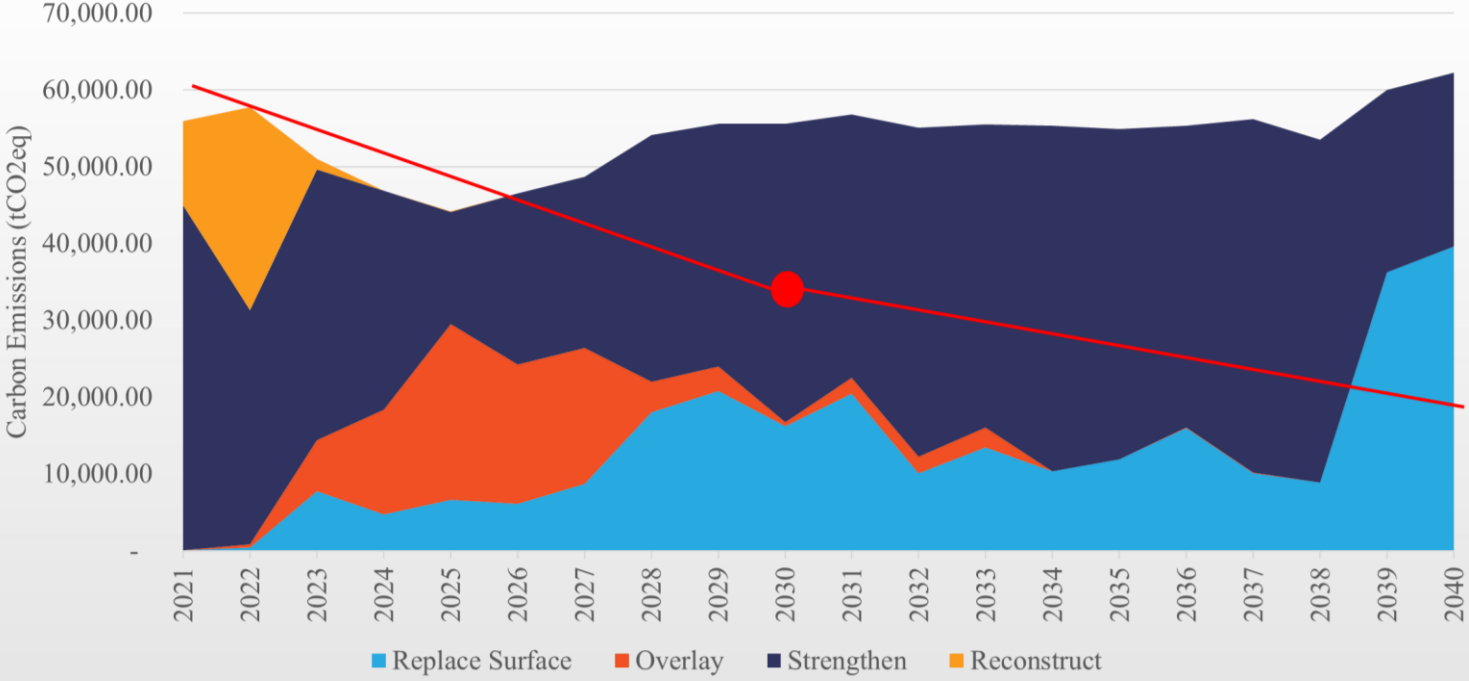
Case of Pavement Asset Management Systems PAMS default treatments



Carbon emissions from Renewal Works



Scenario B – Implementing Circular Economy with €110m Investment



How is TII tackling carbon via Circular Economy Principles?

Collaborate with the entire value chain to develop solutions

Improved Pavement Management Strategy:

- Environmental Management System (EMS) module to be added to TII Pavement Asset Management System (PAMS)
- Green Procurement
- MapRoad
- Optimise pavement condition to reduce road users' carbon emissions

New and updated standards: DN-PAV-03077, DN-PAV-03021, series 800 and 900, etc.

cPCRs for EPDs

Research: into bio-binders, self-healing bituminous mixtures, etc.

How is the industry tackling carbon?

The industry is upgrading their activity to meet their targets:

- **Lower carbon emissions products** (RA, WMA, Cold mixes…)
- **Materials with better characterised technical performances** (IAPDM Level 2)
- **Lower carbon solutions** (retexturing, preservation and rejuvenation solutions)
- **Lower carbon transport, construction plant and facilities** (e.g. HVO fuel, material sheds, renewable energy)
- Produce **EPDs** to TII cPCRs
- **Lower carbon emitting mixing plants** that are RA and WMA enabled

How can you implement CE?

Specify materials in accordance with Series 800 and 900 which allow the use of increased levels of **Reclaimed Asphalt / Recycled Aggregate** content

Specify cold mix mixtures such as **Low Energy Bound Mixtures (LEBM),** where appropriate

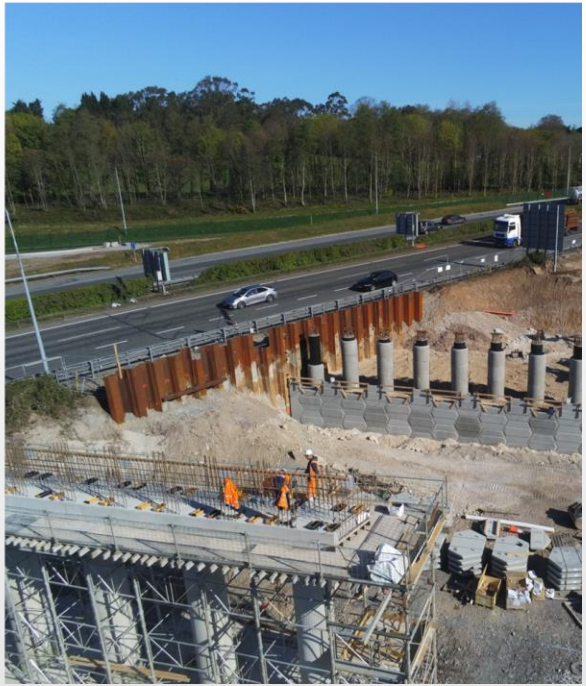
Specify bituminous mixtures in their **Warm Mix** version, e.g. “SMA 14 surf 40/60 **W** des”

Consider **other treatments** such as preservation or rejuvenation emulsions, retexturing treatments or crack and joint sealing solutions, where appropriate

How can you implement CE?

Familiarise yourself with the environmental performances of the materials in your locality by requesting **Environmental Product Declarations (EPD)**

Accurately report on excavated, reused, recycled and installed materials through MapRoad



The ball is in our hands!

Any questions?

We’re all in it together and TII is here to support and guide you

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