

Tackling Carbon in TII Pavement Assets

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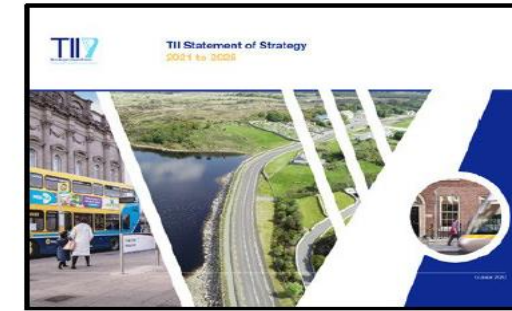
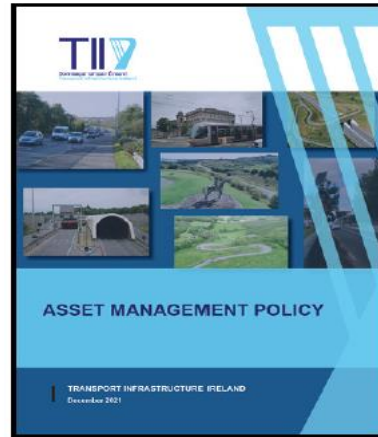
Senior Manager - Pavement Asset
Management Programme & Winter
Services - TII

Olivier Mainardis

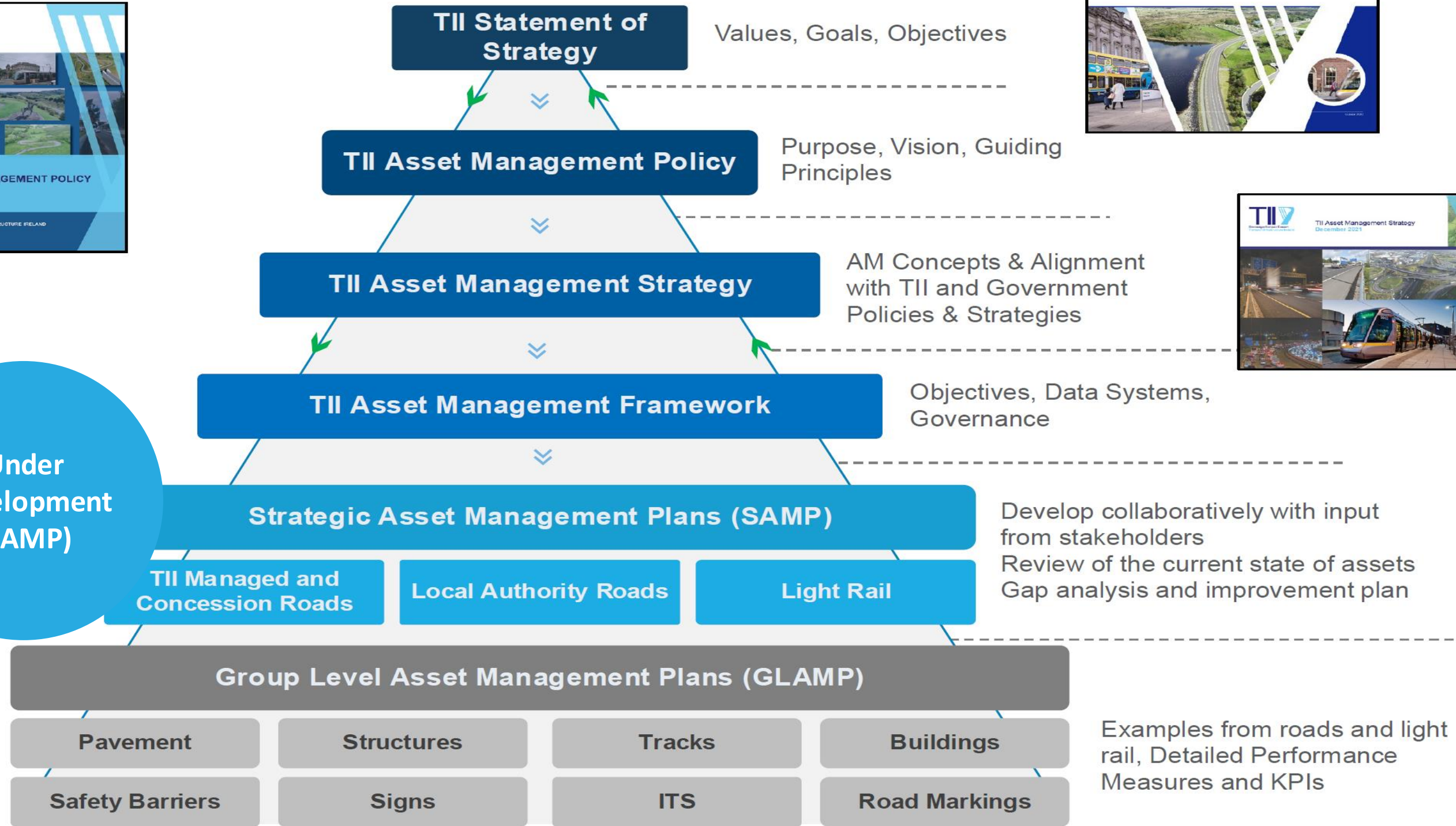
Ireland Pavement Engineering Lead - Arup



TII Asset Management Hierarchy



Under Development (SAMP)



TII Asset Management Objectives

TII set eight strategic objectives founded on its asset management policy

<https://www.tii.ie/assetmanagement/index.xml>



TII Asset Management Objectives



TII Pavement Renewals Business Case

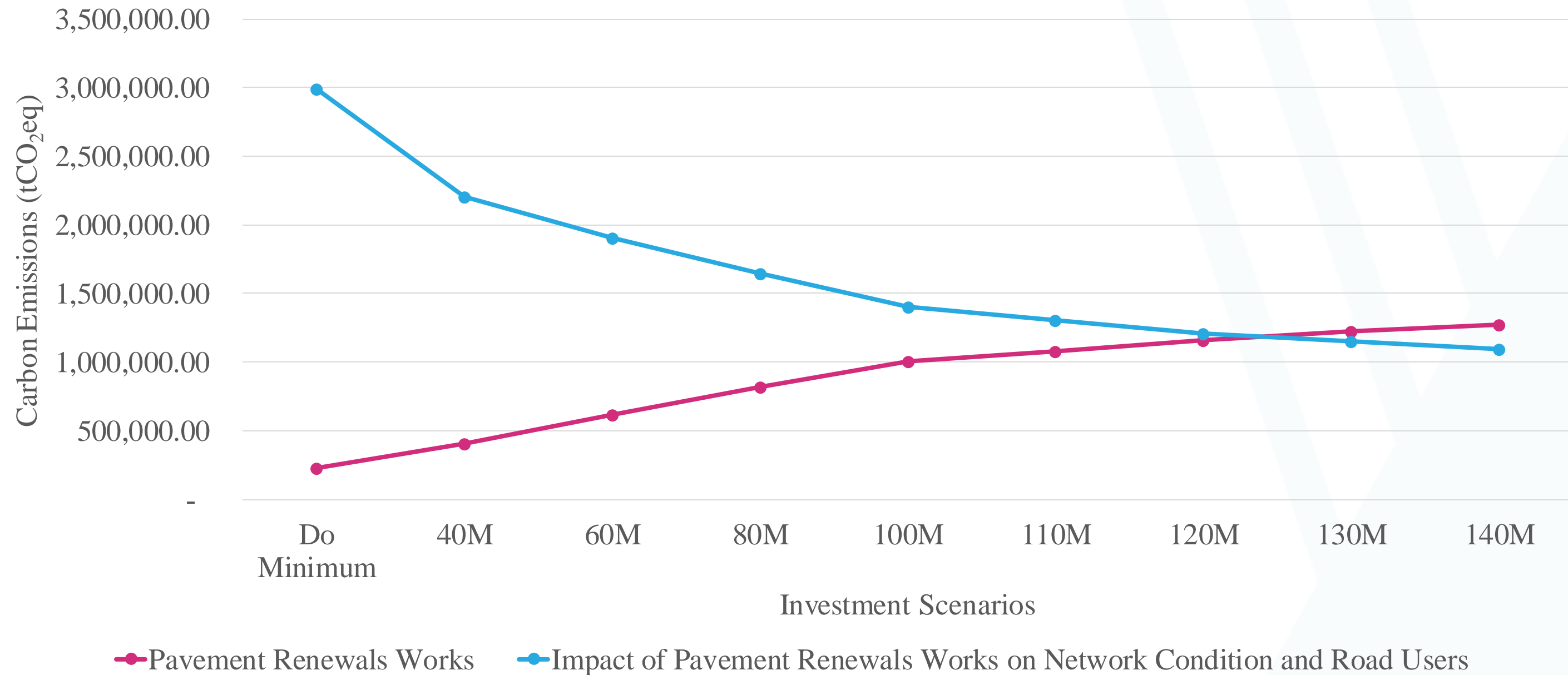
Pavement Renewals Programme 2023 - 2027

July 2023
(Issue 1)



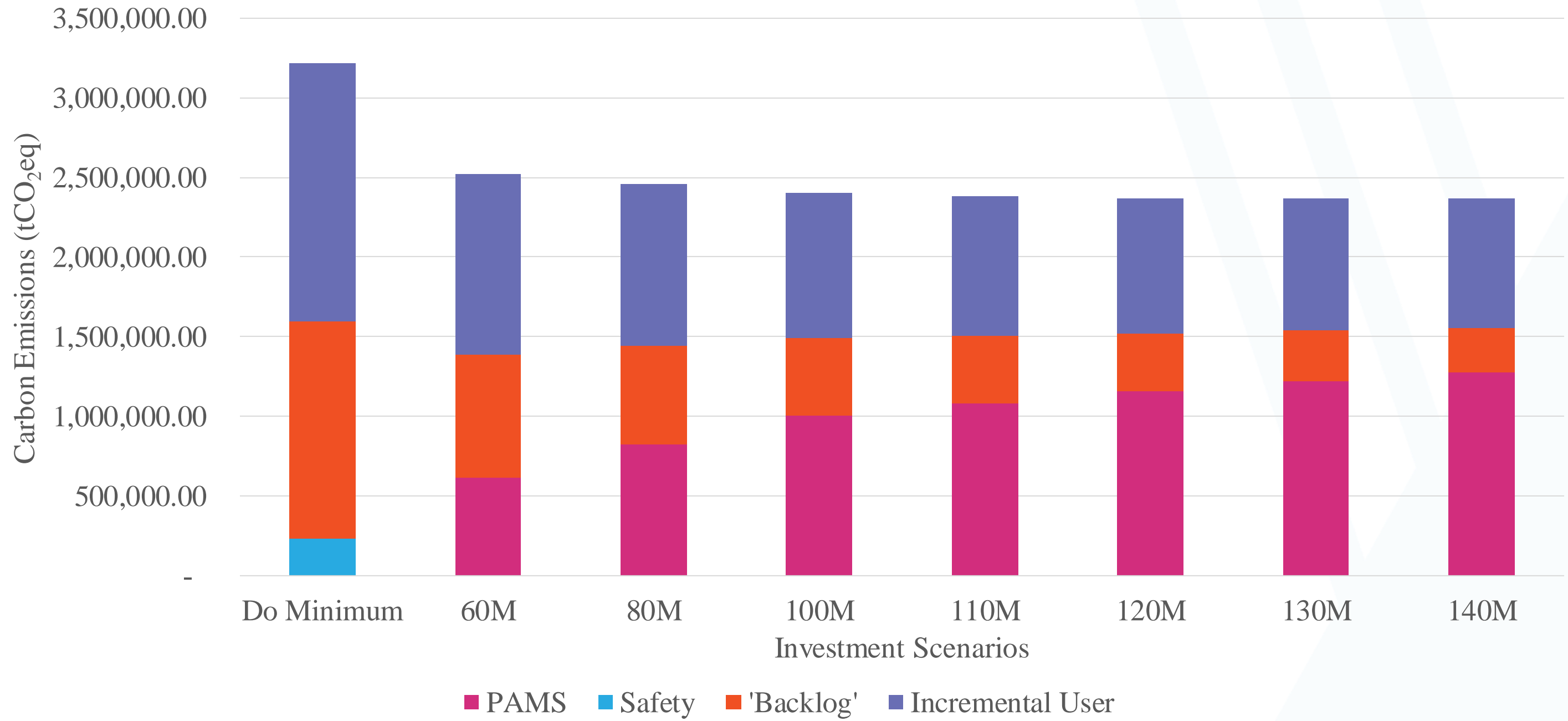
Carbon Emissions (CO₂eq) Analysis

Carbon Emissions from Pavement Renewals Works versus their Impact on Network Condition and Road Users' Carbon Emissions

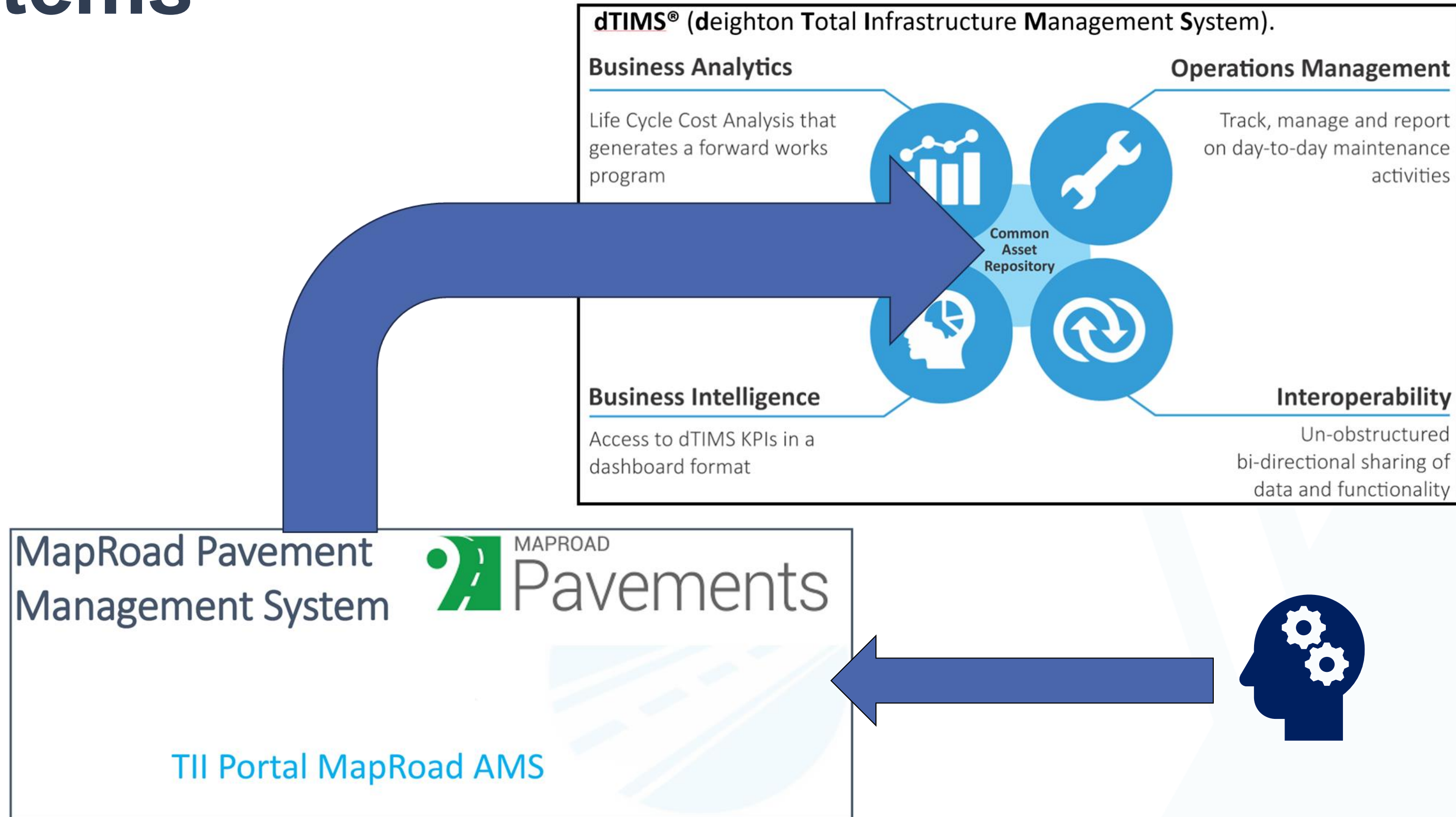


Carbon Emissions (CO₂eq) Analysis

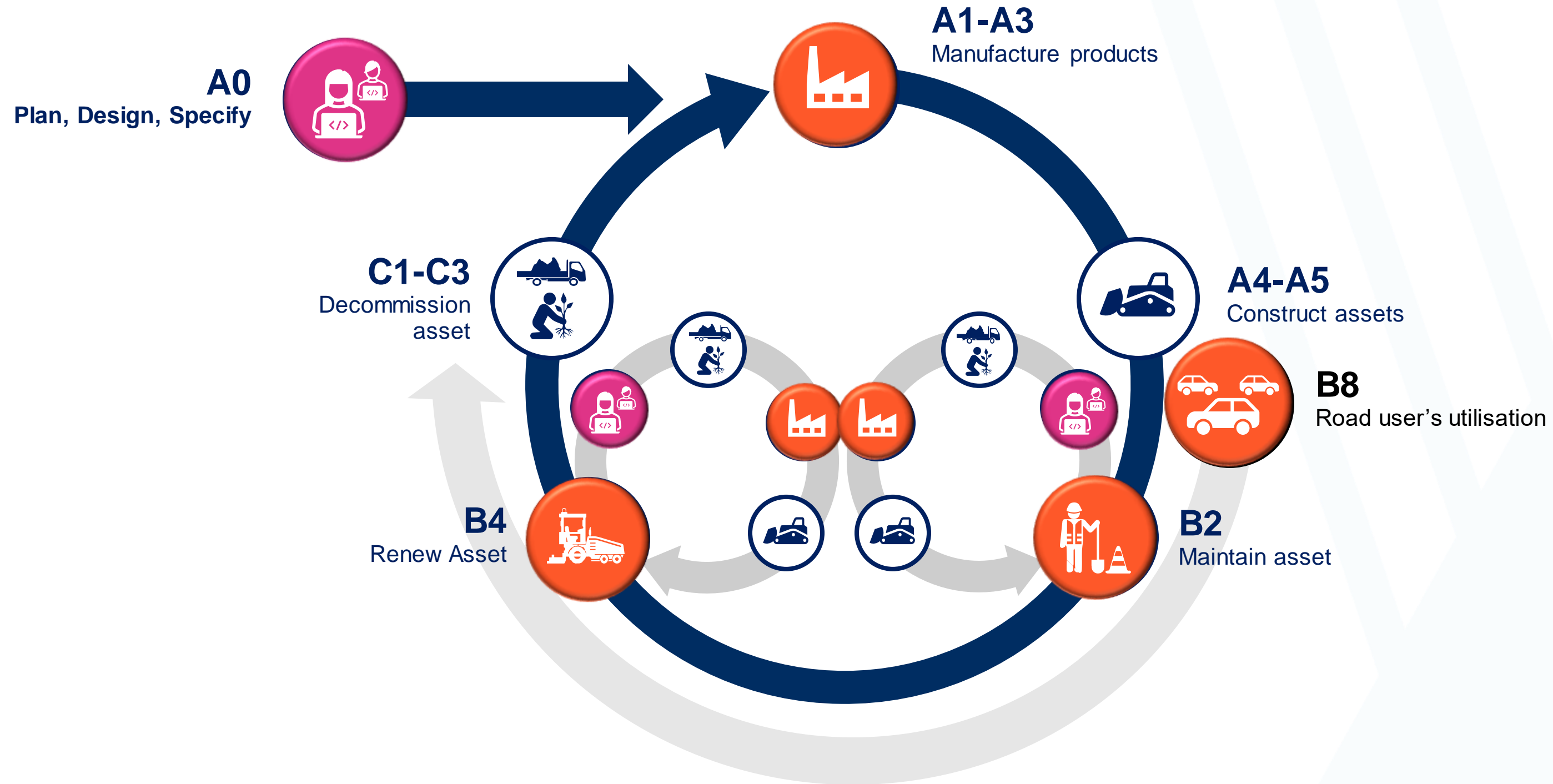
Total Carbon Emissions (tCO₂eq)



Systems

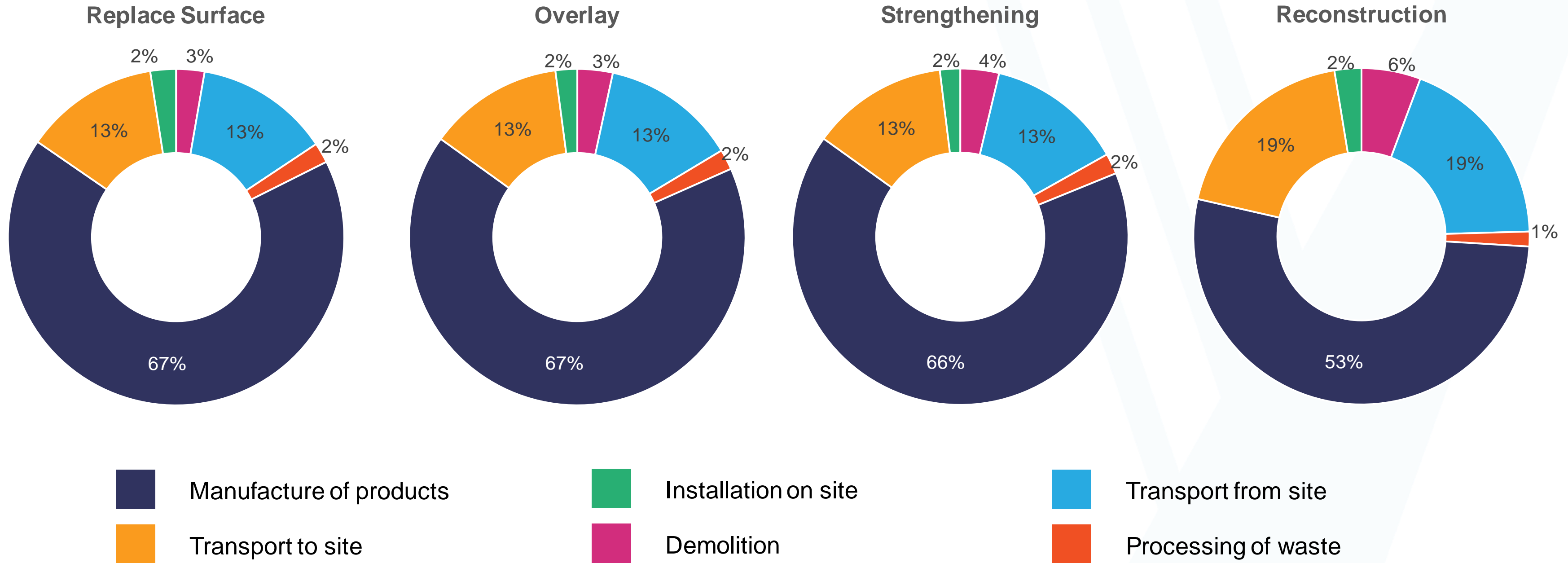


Where does carbon come from?



What are the main sources of carbon?

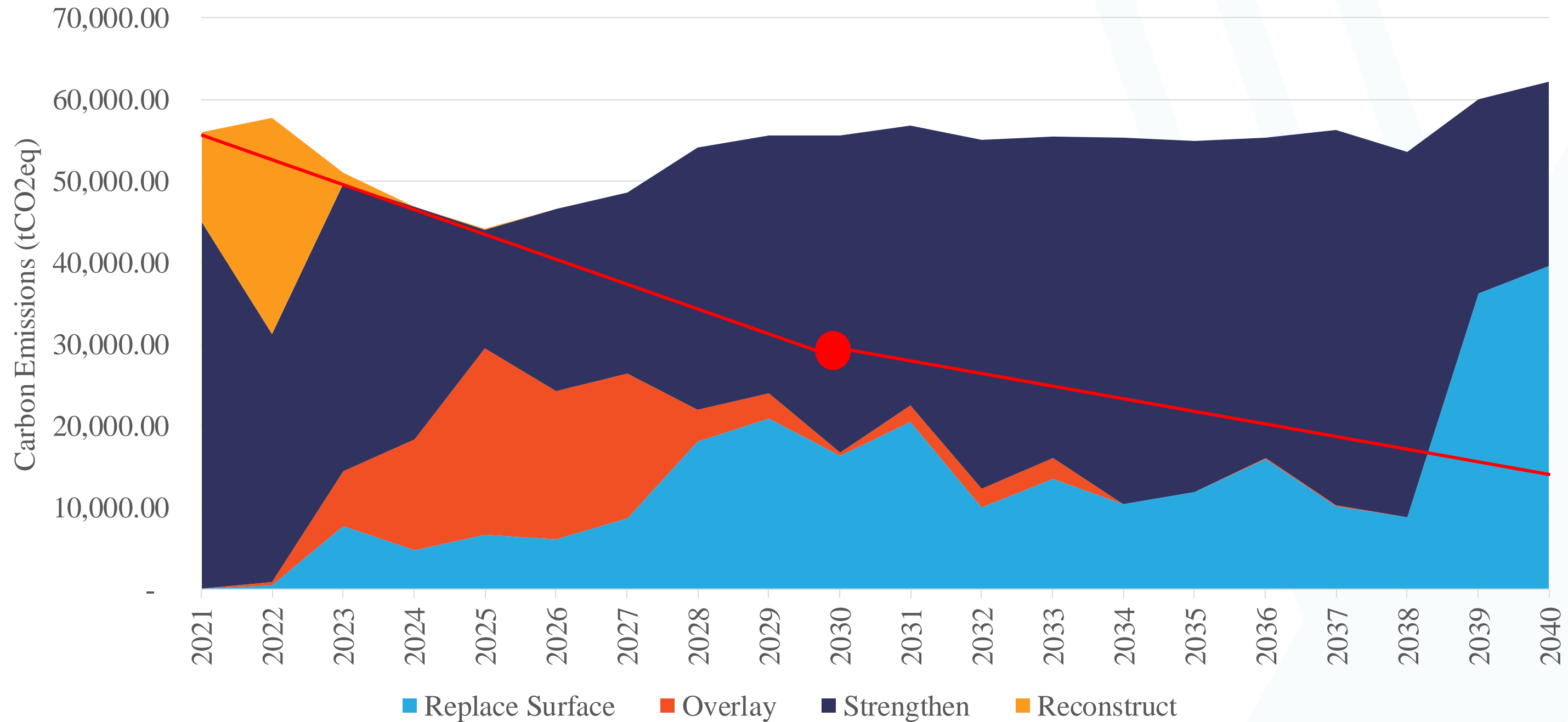
Case of PAMS default treatments



Carbon emissions from Renewal Works

Where are we at?

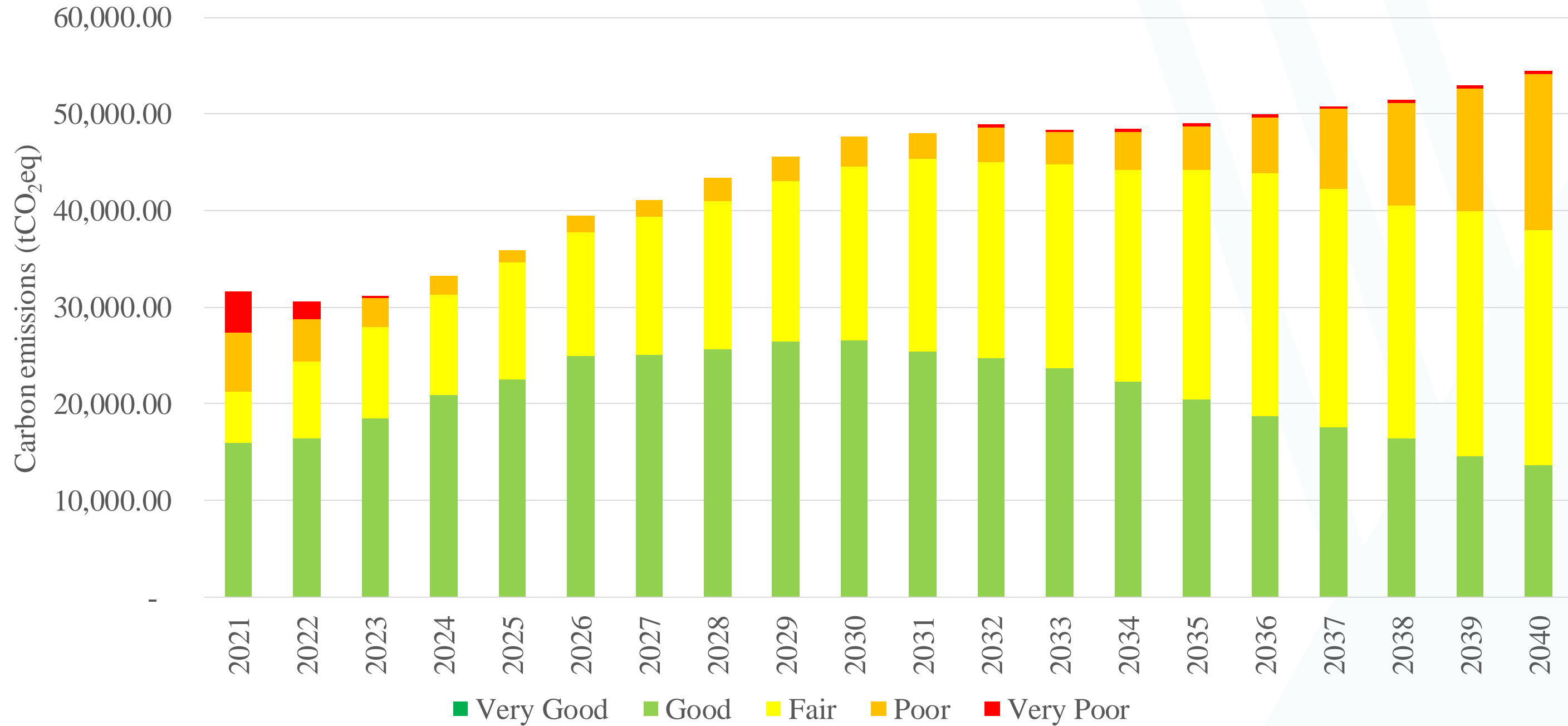
€110 millions Investment Scenario



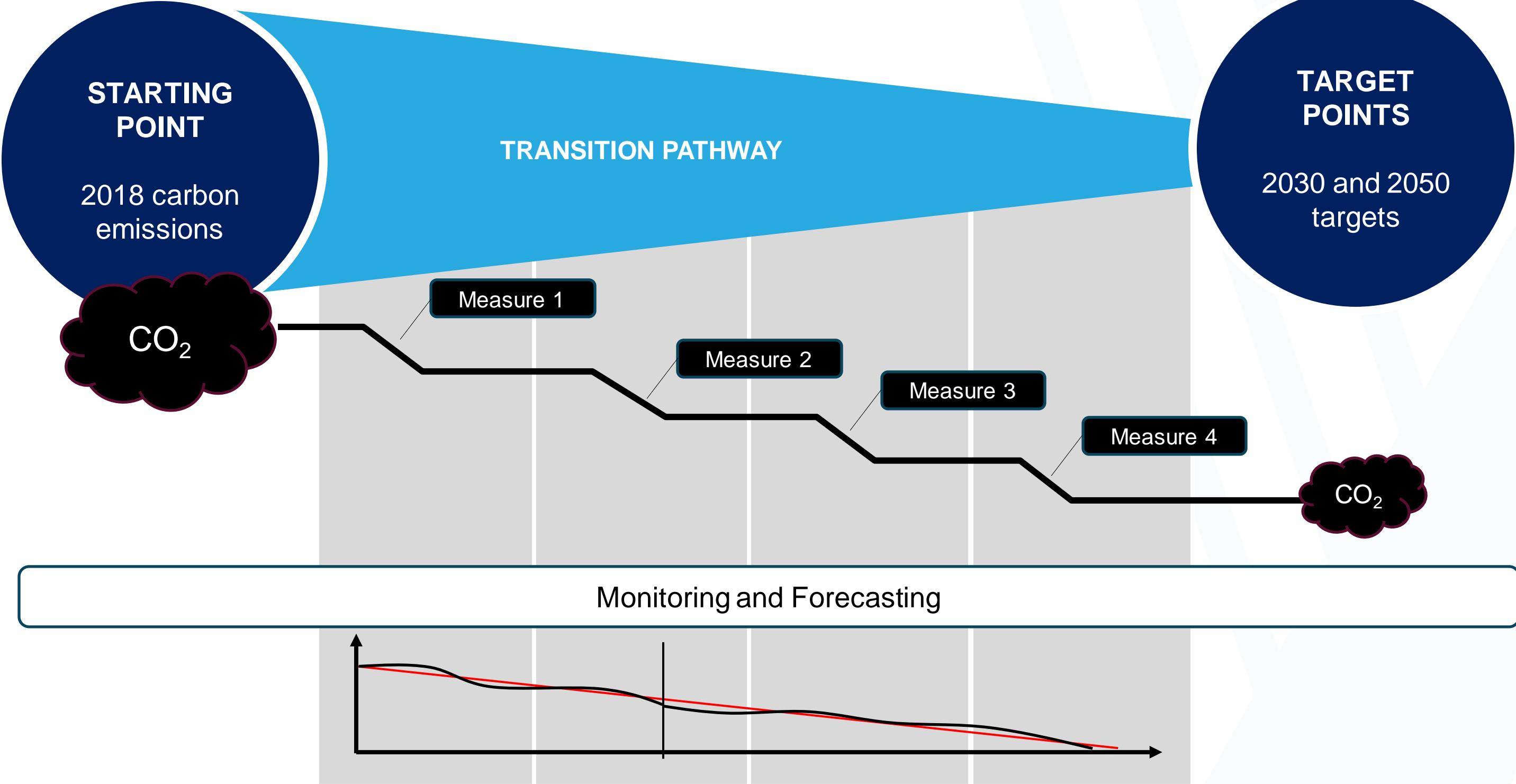
Carbon emissions from Road Users

Where are we at?

€110 millions Investment Scenario



How do we tackle carbon?



How is TII tackling carbon?

In addition to the above...

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.

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

How is the industry tackling carbon?

The industry is upgrading their activity to:

- **Lower carbon emissions products** (RA, WMA, Cold mixes...)
- **More durable / better performing products** (IAPDM Level 2 mixtures)
- **Lower carbon solutions** (retexturing, preservation and rejuvenation solutions)
- **Lower carbon transport and construction plant fleet** (e.g. HVO fuel)
- **Lower carbon emitting mixing plants** that are RA and WMA enabled
- **...and much more...** get in touch with your local providers to find out!

How can you help tackling carbon?



Familiarise yourself with the **products available in your locality**

Collaborate with your local contractors

Design with the **IAPDM** (Irish Analytical Pavement Design Method)

How can you help tackling carbon?

Specify mixtures with a minimum **Reclaimed Asphalt / Recycled Aggregate** content (capping, subbase, base and binder)

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”

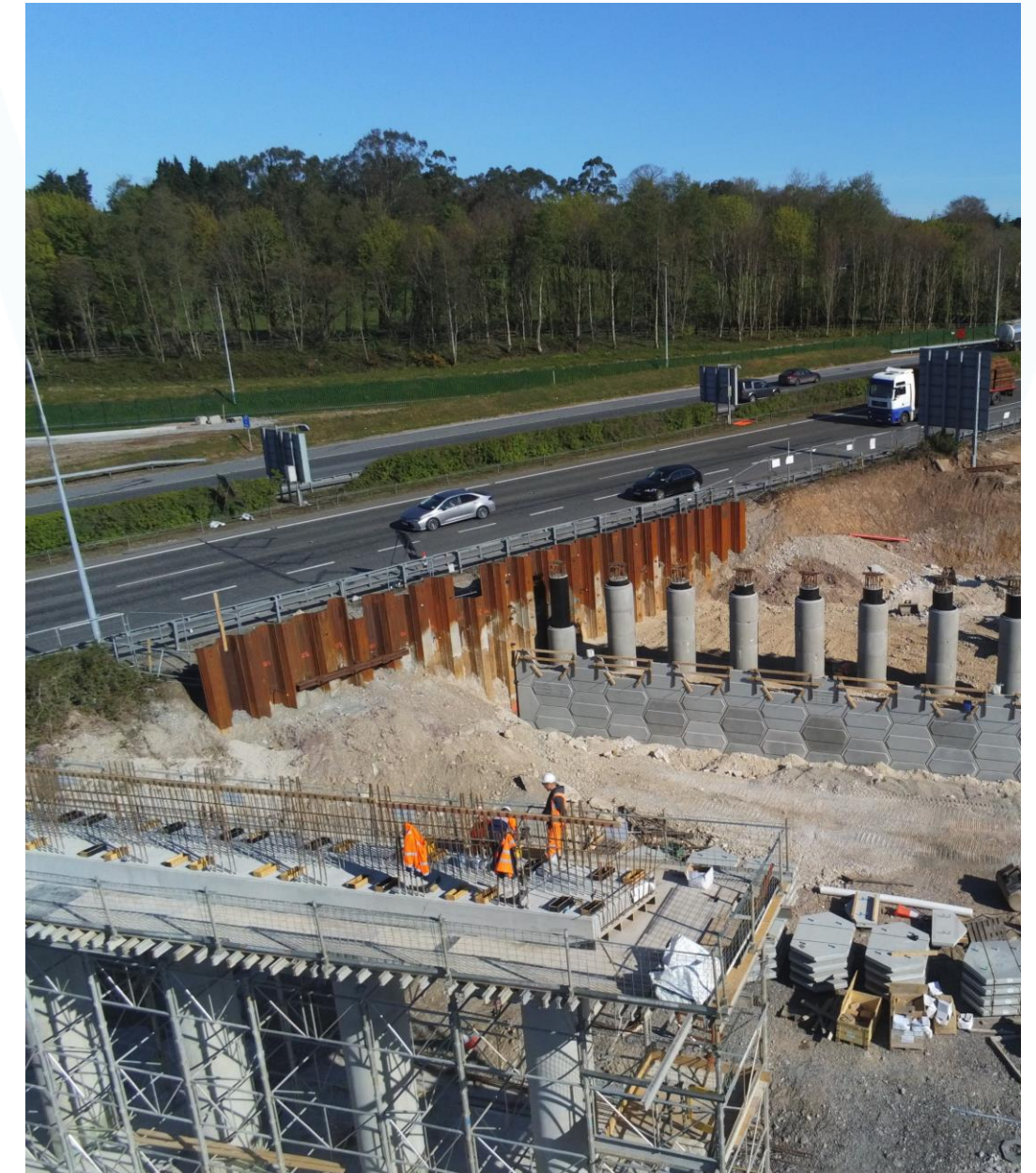
Specify **preservation treatments** such as preservation or rejuvenation emulsions, retexturing treatments or crack and joint sealing solutions, where appropriate



How can you help tackling carbon?

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



A photograph of two Irish rugby players in their green kit. The player in the foreground is holding a rugby ball and looking intently towards the left. The player behind him is also looking in the same direction. The jerseys feature the IRFU crest, Canterbury, Vodafone, and Vodafone logos.

**The ball is in
our hands!**

Any questions?