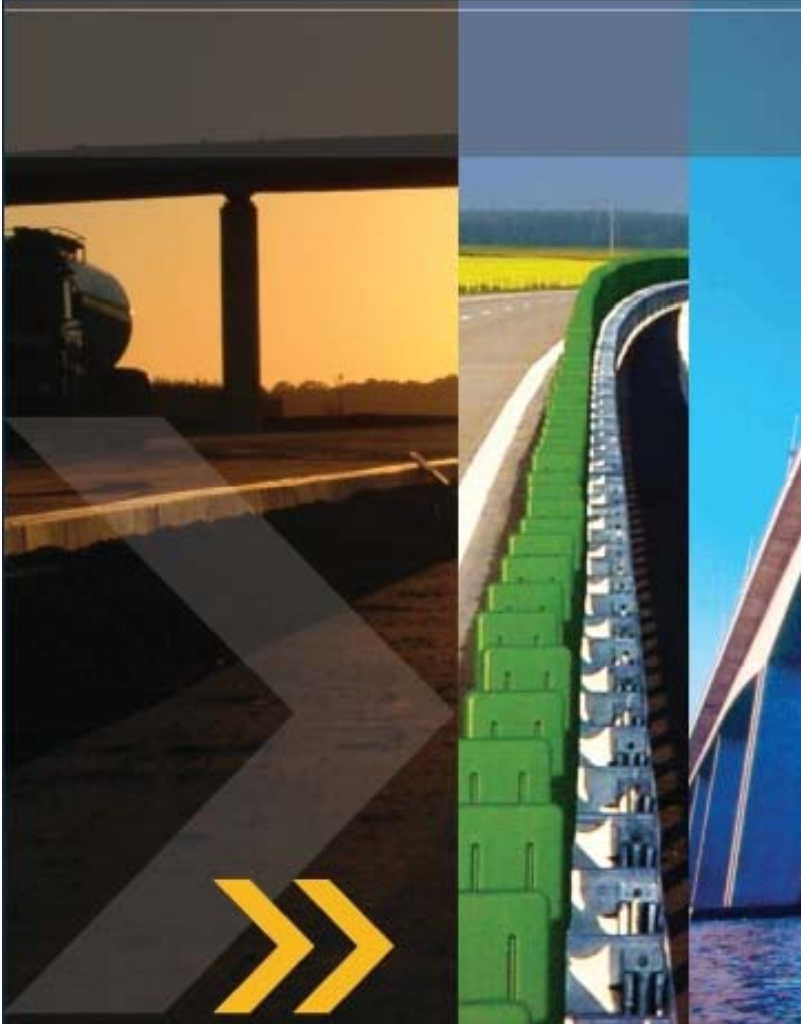




INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

Better roads, better world.



The IRF & CHANGER: The GHG Calculator

Susanna Zammataro
Deputy Director General



What is the IRF?

- **Global organisation supporting the road sector**
- **Not-for-profit non-governmental organisation**
- **Established in 1948**
- **Consultative status with the UN, BSEC, EU, CEN**

**IRF promotes roads that are
safe, economically viable and
ecologically friendly**



INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

Members worldwide



**More than 490 members
in 90 countries**

Better roads, better world



What do we do?

- Networking and contacts building
- Conferences, seminars, workshops
- Lobbying
- Dissemination of best practices
- Education and training
- World Road Statistics





INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

IRF Working Groups



Better roads, better world

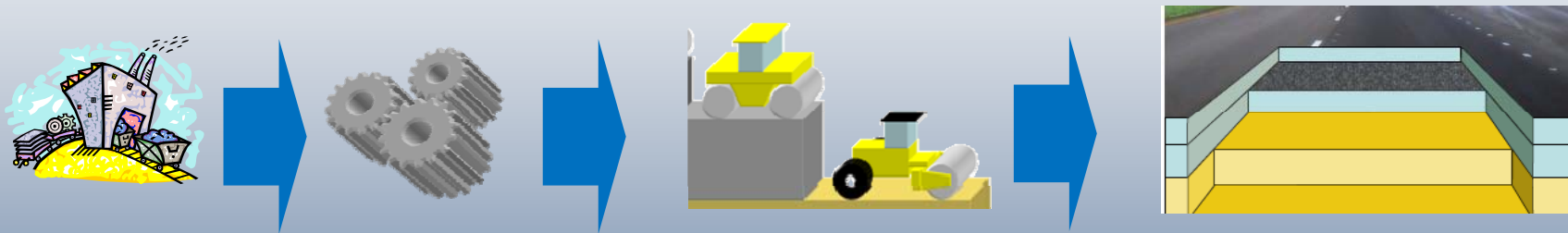


INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE



Better roads, better world

Building road infrastructure is a complex process that requires a lot of operations



How to assess GHG emissions?

Where can you make energy and resources savings?



The Objectives

- Detailed environmental analysis of road projects
- Basis for comparative analysis of techniques and materials
- Optimising road construction site supply schemes
- Enabling an estimation of the carbon footprint of road construction



INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

Easy to Use

Fast

Reliable

CHANGER
Greenhouse gas Calculator

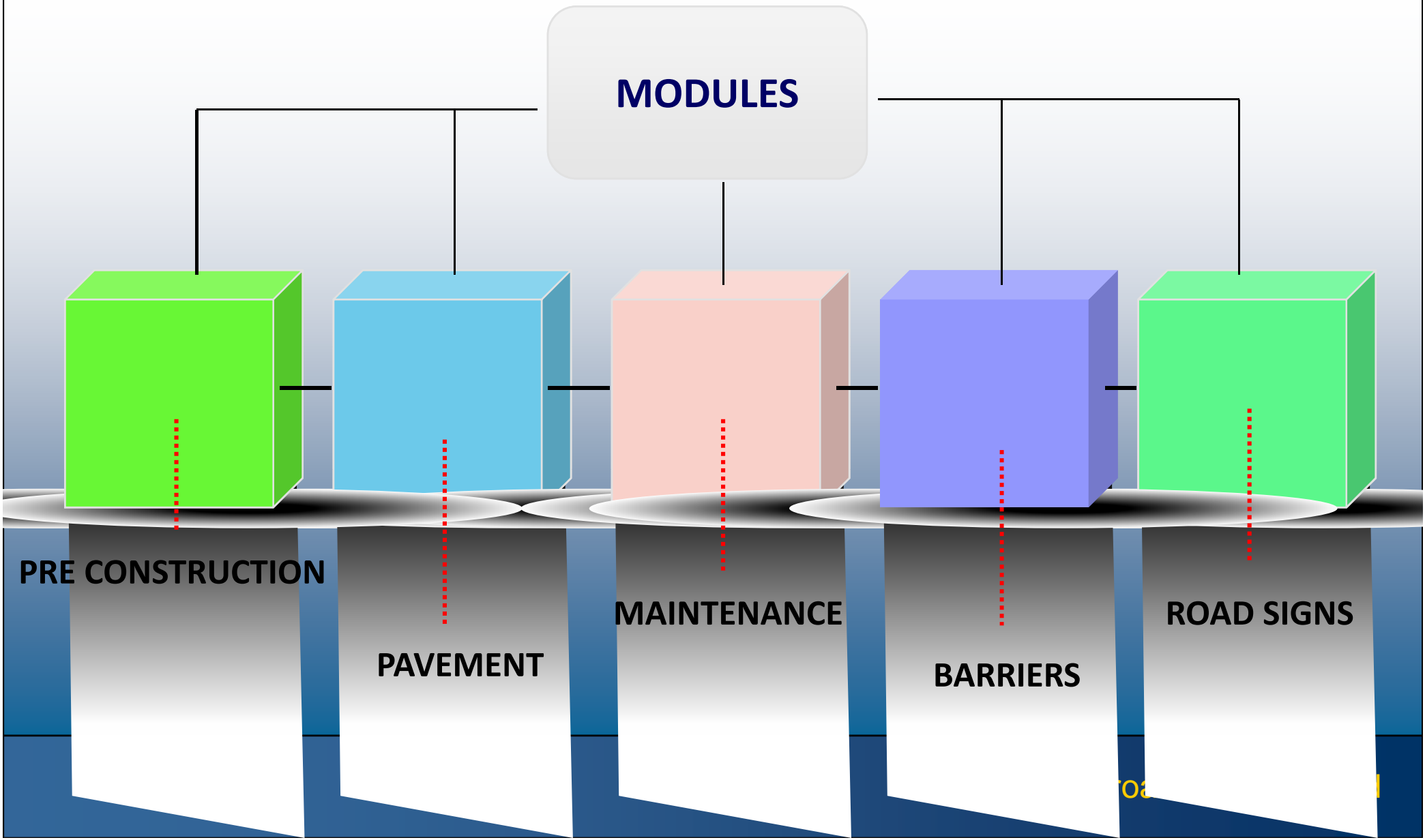
Provides a competitive edge

The advertisement features a central graphic of a speedometer with a needle pointing towards the green zone. The background is a vibrant green with abstract, flowing lines. Four rounded rectangular callouts are connected to the central graphic by thin lines, highlighting the tool's key features: 'Easy to Use', 'Fast', 'Reliable', and 'Provides a competitive edge'. The product name 'CHANGER' is written in large, bold, black letters, with 'Greenhouse gas Calculator' in a smaller font below it.

Better roads, better world



MODULES



PRE CONSTRUCTION

PAVEMENT

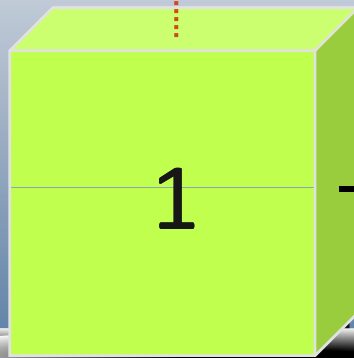
MAINTENANCE

BARRIERS

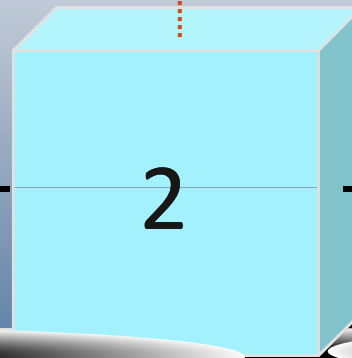
ROAD SIGNS

Modules' Structure

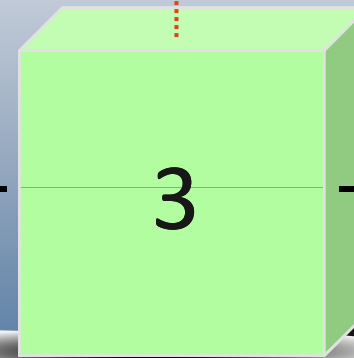
Project
Data



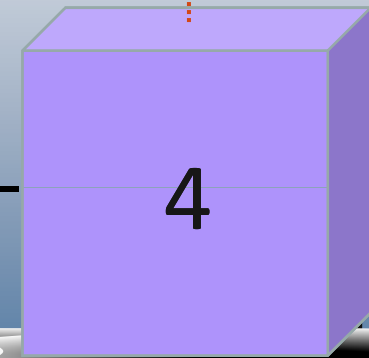
Materials
Transport
Machines



Calculation
Emission
factors

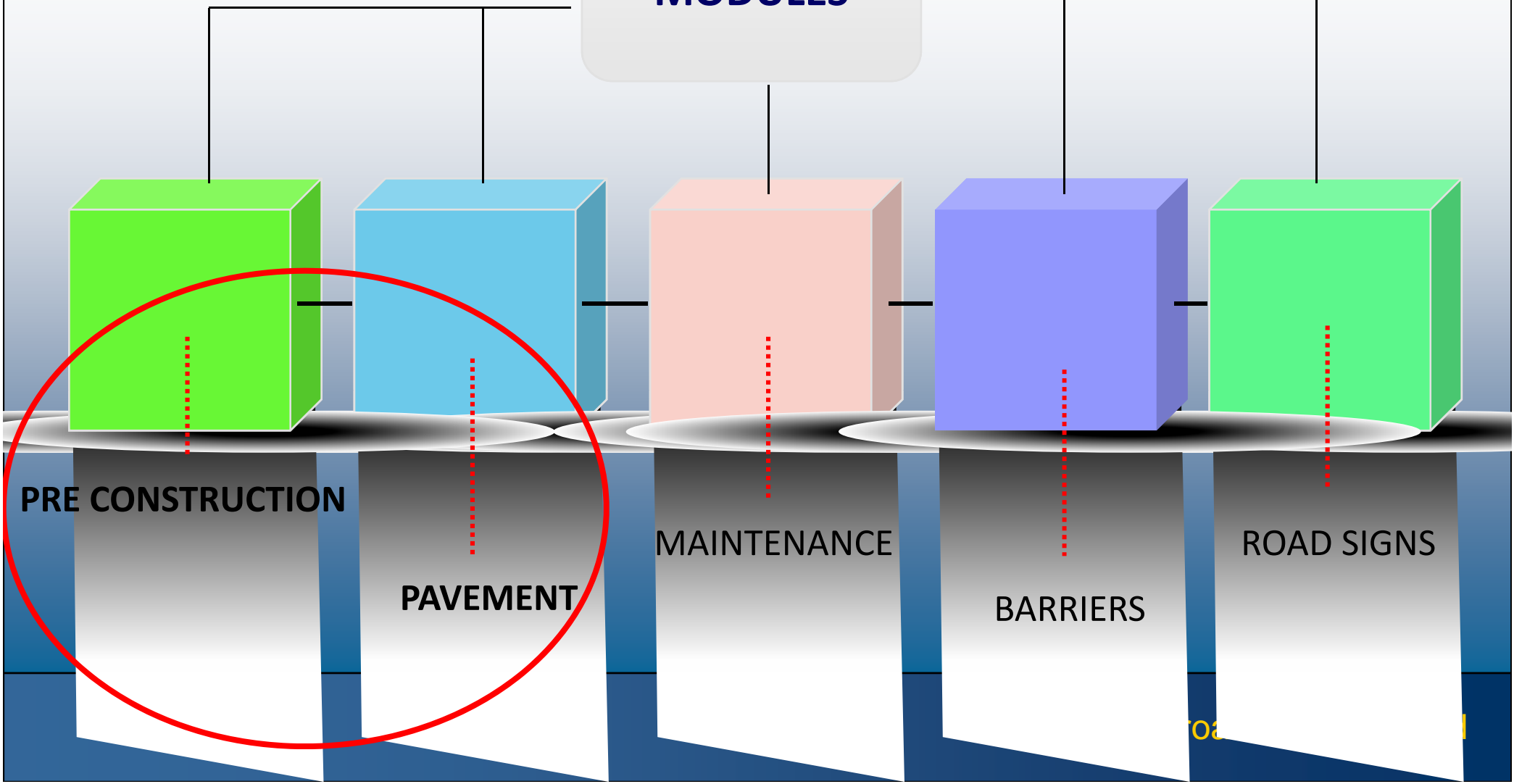


Results





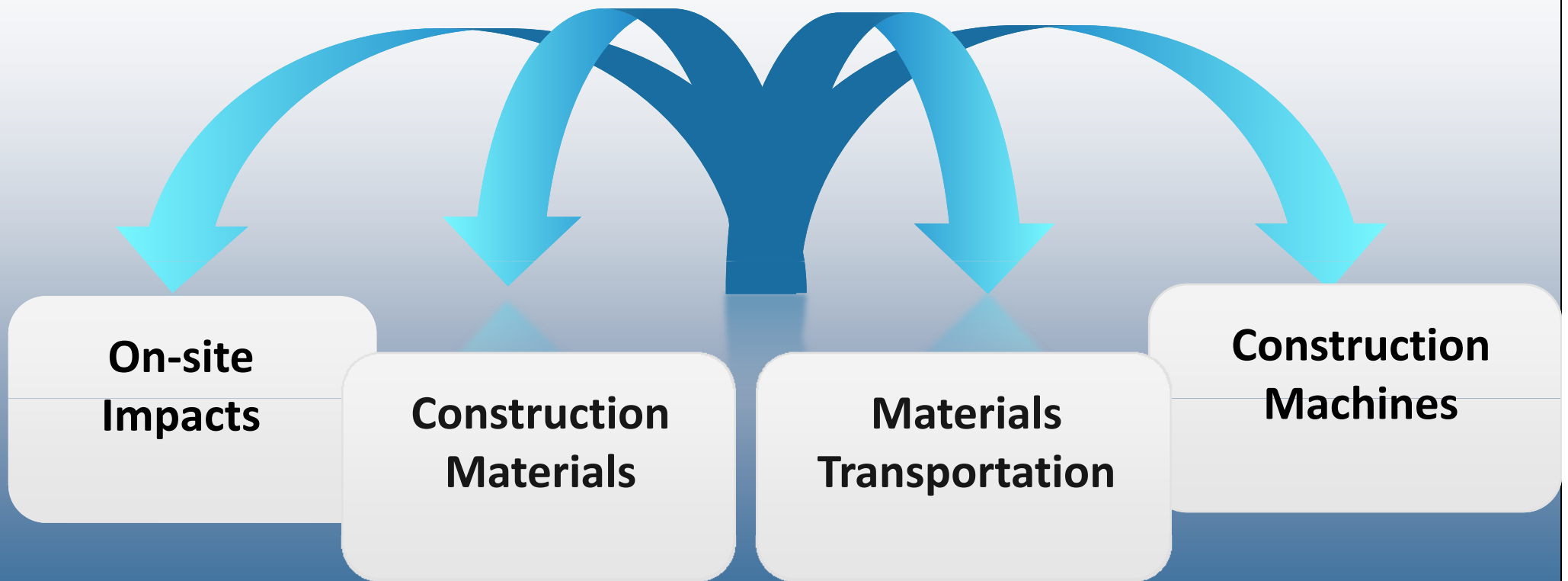
MODULES



PRE-CONSTRUCTION MODULE

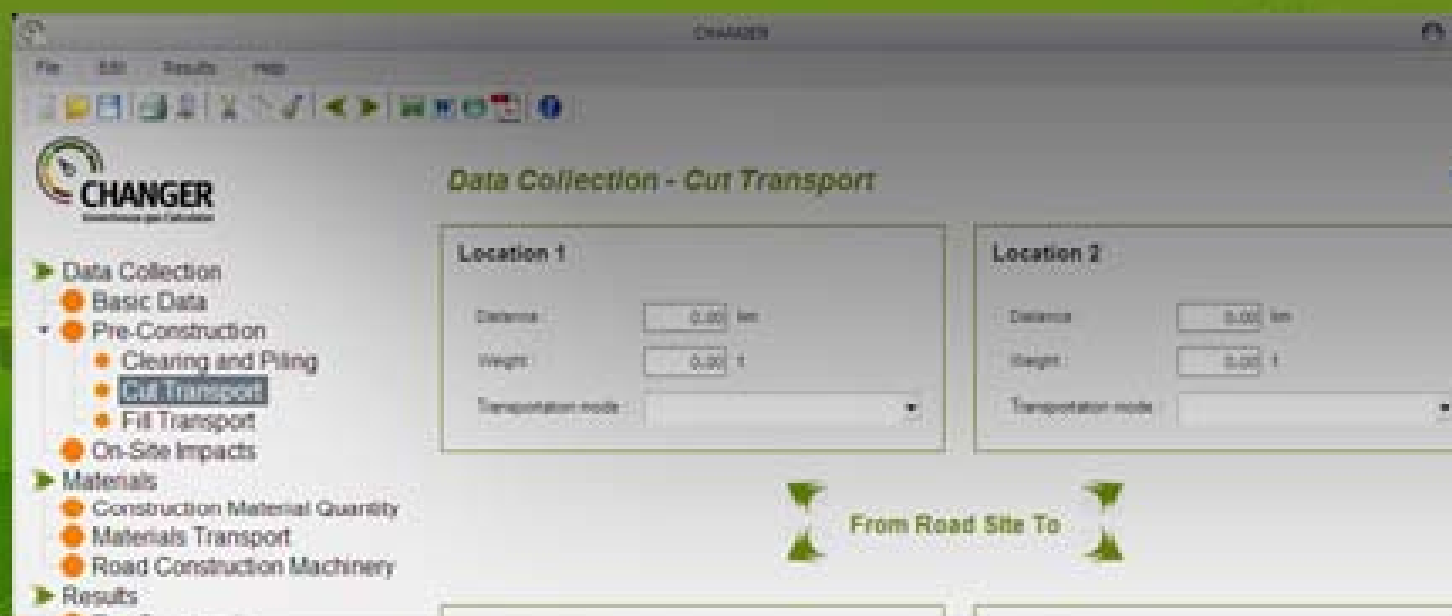


PAVEMENT





Step by step approach drop-down menus and diagrams to navigate easily



- Data Collection
 - Basic Data
 - ▣ ● Pre-Construction
 - Clearing and Piling
 - Cut Transport
 - Fill Transportation
 - On-Site Impacts
- Materials
 - Construction Material Quantity
 - Materials Transportation
 - Road Construction Machinery
- ▼ **Results**

Results



**Pre-Construction
Emission**



**Onsite Electricity
and Fuels**



**Construction
Materials**



**Materials
Transportation**



**Construction
Machines**



**Consolidated
Results**

A screenshot of the CHANGER software interface. The background shows a 'Materials - Materials Transport' workflow with orange boxes for ' Quarry', ' Refinery', and ' Quarry'. A menu overlay is positioned in the foreground, listing various functions: 'New Project', 'Open Project', 'Cut', 'Copy', 'Paste', 'Back', 'Export to HTML', and 'Export to Word'. The menu also includes 'File', 'Edit', 'Results', and 'Help' at the top. Red lines connect the menu items to their corresponding icons in the software's toolbar.

Fast calculation with options to export result to popular file formats.



**Saves your time and money by showing
where to improve performance and
puts you at the forefront of innovation.**

OUR TECHNICAL PARTNERS



VALIDATION



www.irfghg.org

The screenshot shows the website for the CHANGER GHG Calculator. The browser window title is "CHANGER - GHG Calculator | International Road Federation - Windows Internet Explorer". The address bar shows the URL "http://projects.digitalgrafis.com/irfnet/ghg/". The website header includes a navigation menu with links for Home, Features, About, License, Order, Register, FAQs, Help, and Supports. The main content area features the CHANGER logo and the text "Calculator for Harmonised Assessment and Normalisation of Greenhouse-Gas Emissions for Roads". A large green banner contains the headline "Easily calculate emissions and greenhouse-gasses of road construction!" and a yellow "ORDER NOW!" button. Below the banner, there are two columns of text: "A new road industry's tool to reduce climate change." and "Detailed environmental analysis of road projects." To the right, there is a "Demo & Screenshots" section with a small image of the software interface. The Windows taskbar at the bottom shows the start button, several application icons, and the system tray with the time 11:58.

Better roads, better world

Some considerations



- Every sector is coming under pressure to **reduce emissions**.
- Ways to include **compulsory GHG assessment** in tendering/lending procedures?
- Lack of a **common methodology** offering a credible and universally accepted system of measurement.



Thank you
www.irfnet.org