



CHANGER

Greenhouse gas Calculator

**Calculator for Harmonised Assessment
and Normalisation of Greenhouse gas
Emissions for Roads**

Time for Changer

The Path to Climate Neutral Roads

INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE



www.irfnet.org | www.irfghg.org

Time for Changer

Our world is changing, our climate is changing.

Industry too is changing to meet the new social, environmental and economic challenges of our times.

Already, the road sector has taken a decisive lead in this respect - transforming its practices and adopting new, more eco-friendly techniques and technologies.



CHANGER is the latest flagship project in this evolution - the sign of an industry committed to the green economy, and at the forefront of efforts to stimulate change for the better.

Who is it for?

CHANGER is a user-friendly software tool designed to meet the demands of modern industry and today's complex business world. It will be of invaluable assistance to:

- road construction companies
- consultant engineering firms
- road administrations
- donor agencies and financial institutions
- environmental protection and monitoring agencies

CHANGER is fully compatible with Inter - governmental Panel on Climate Change (IPCC) recommendations, and is based on data drawn from 188 countries, covering all global regions and economic groupings.

How does it work?

Fast and easy to use, **CHANGER** adopts a comprehensive input-output modelling approach to ensure a reliable standard methodology for estimating greenhouse gas emissions from road projects. The calculation model is based on a set of equations that enable accurate assessment of overall emissions (output) generated by each source that has been identified and quantified (input).

CHANGER provides a structured hierarchy for entering and managing data. Dropdown menus and data entry wizards are designed to enhance user-friendliness at every stage.

The Path to Climate Neutral Roads

" Climate change is happening now. It affects every sector of society as we know it. It is costing the earth ... and it is costing business. "

No industry can afford to ignore its impact on the environment and on climate change. Keen to contribute dynamically to the growing awareness of road practitioners of the ecological repercussions of their activities, the International Road Federation (IRF) has designed a greenhouse gas calculator - **CHANGER** - specifically tailored to road infrastructure projects.

CHANGER enables road construction and engineering companies to act both responsibly and proactively by constituting their own greenhouse gas inventories in advance of mandatory national regulations.

As international financial institutions are progressively including compulsory environmental assessment of road construction projects in their tendering procedures, **CHANGER** becomes an irreplaceable tool for undertaking any major road project.

Participation in independent offsetting programmes made possible by **CHANGER** will enable the road sector to be part of a new heritage for the planet by directly involving communities in global efforts to combat climate change.

Emissions sources

CHANGER enables calculation of emissions by reference to the different phases of a construction project. Its database covers a comprehensive range of construction processes and materials, including impacts from:

Pre-Construction

Clearing, piling, cut transport, fill transport

On-Site

use of electricity and fuel

Materials

Construction materials, transport of materials

Machinery

Excavators, pavers, rollers, etc.

Flexibility

The flexibility of the system corresponds to a wide variety of user needs - from pre-project phase estimations, right through to comprehensive end-project assessments. In each case, **CHANGER** automatically generates full or partial reports that can be exported to Excel, Word, PDF and HTML format.

Emissions results are expressed in metric tonnes of CO₂ equivalent.

Further specifications are available on the dedicated website at

www.irfghg.org

Benefits

CHANGER will notably:

- Stimulate environmental awareness and best practice throughout the road sector
- Enhance competitive advantage
- Provide an authoritative reference for comparing methods, technologies and materials
- Highlight potential for significant financial economies on material costs and energy consumption
- Offer a universal benchmark for the industry to "reduce what it can, offset what it can't" in order to achieve tangible benefits for people, planet and prosperity
- Give the sector a lead by establishing a credible and transparent methodology ahead of mandatory regulations

CHANGER has been developed by IRF with assistance from a wide range of technical partners and has been independently validated by the Swiss Federal Institute of Technology (EPFL).

For more information:



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Visit CHANGER website at
www.irfghg.org

How to order?

Simply register and complete an order form on-line at www.irfghg.org. Your CHANGER software will be promptly delivered by postal mail on a CD-ROM ready for installation on your computer.



Software Price

IRF Members:

Single-user License	EUR 2,000
Multi-user License (5 users)	EUR 4,200

Non-IRF Members:

Single-user License	EUR 4,000
Multi-user License (5 users)	EUR 6,000

The single-user license enables CHANGER to be installed in 1 stand-alone computer. The multi-user license is for companies or organisations with multiple staff involved in the planning and development process. The multi-user license enables CHANGER to be installed in 5 stand-alone computers.

CHANGER is fully compatible with Windows, XP, Vista and Windows 7.

Programme updates are free for registered users and may be downloaded from the CHANGER website. A free technical support area can also be accessed through the website.

New versions of CHANGER containing additional modules are foreseen in due course. Registered users will be notified by e-mail when new versions are released.

Resale Agents

Find out how to become an official CHANGER sales agent at www.irfghg.org and earn a sales commission by software purchase by promoting CHANGER to firms and organisations in your country.