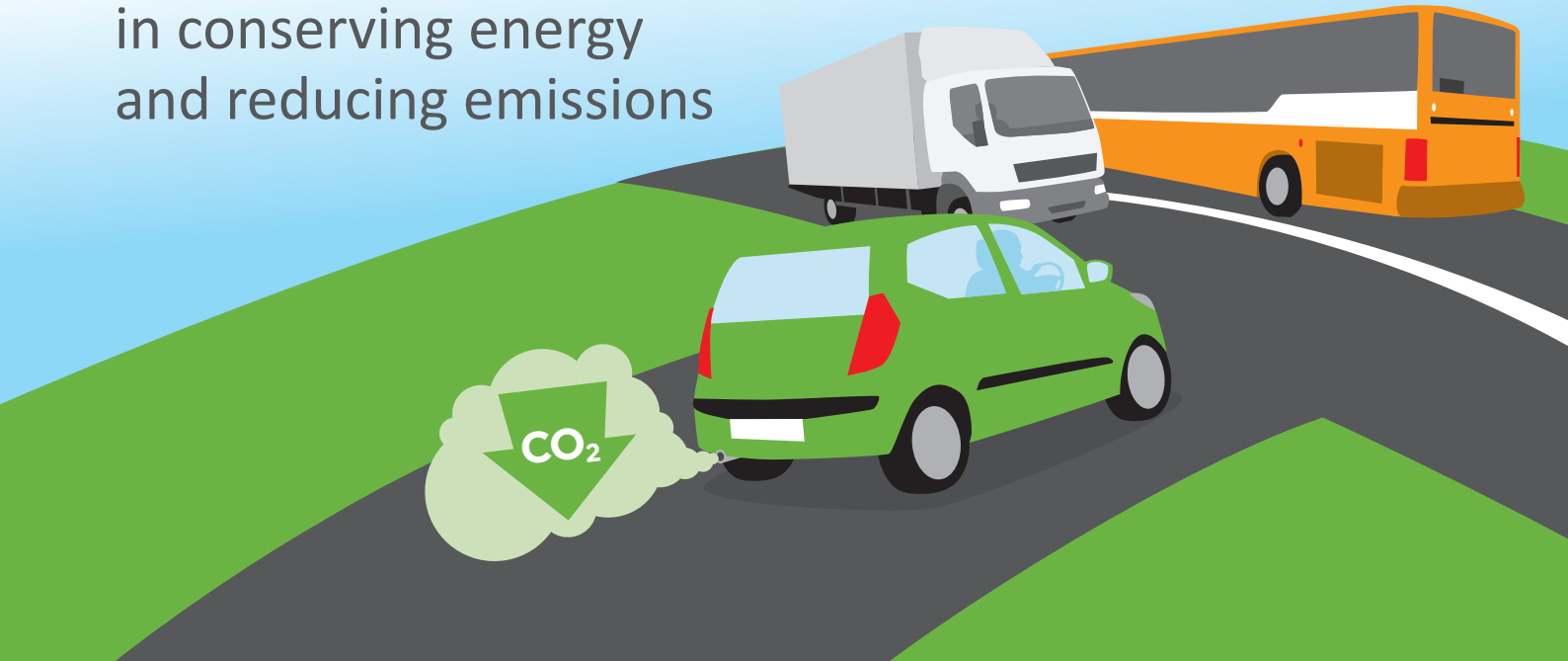
ecoDriver

Supporting the driver
in conserving energy
and reducing emissions



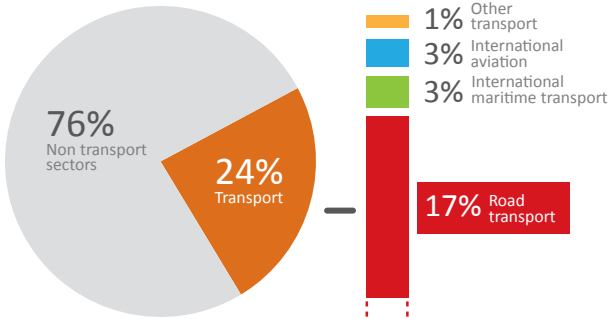
Supporting the driver in conserving energy and reducing emissions

Environmentally friendly driving, or eco-driving, is becoming an increasingly important topic among the intelligent transport systems community because it can make a real contribution to energy savings and reduction of carbon emissions.

But drivers are often not aware they have a major influence on their car's fuel consumption, potentially leading to significant unnecessary emissions. The goal of eco driving is to optimize drivers' behaviour in order to maximise energy efficiency and improve traffic flows without compromising safety.

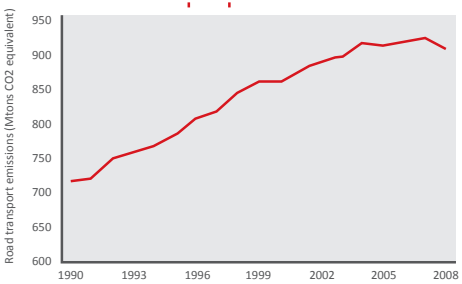
Transport sector contribution to total greenhouse gas emissions in the European Union (2009).

Source: European Environment Agency (2011). TERM 2011: Transport indicators tracking progress towards environmental targets in Europe.



Trends in road transport greenhouse gas emissions in the European Union (2009).

Source: European Environment Agency (2011). Annual European Union greenhouse gas inventory 1990–2009.



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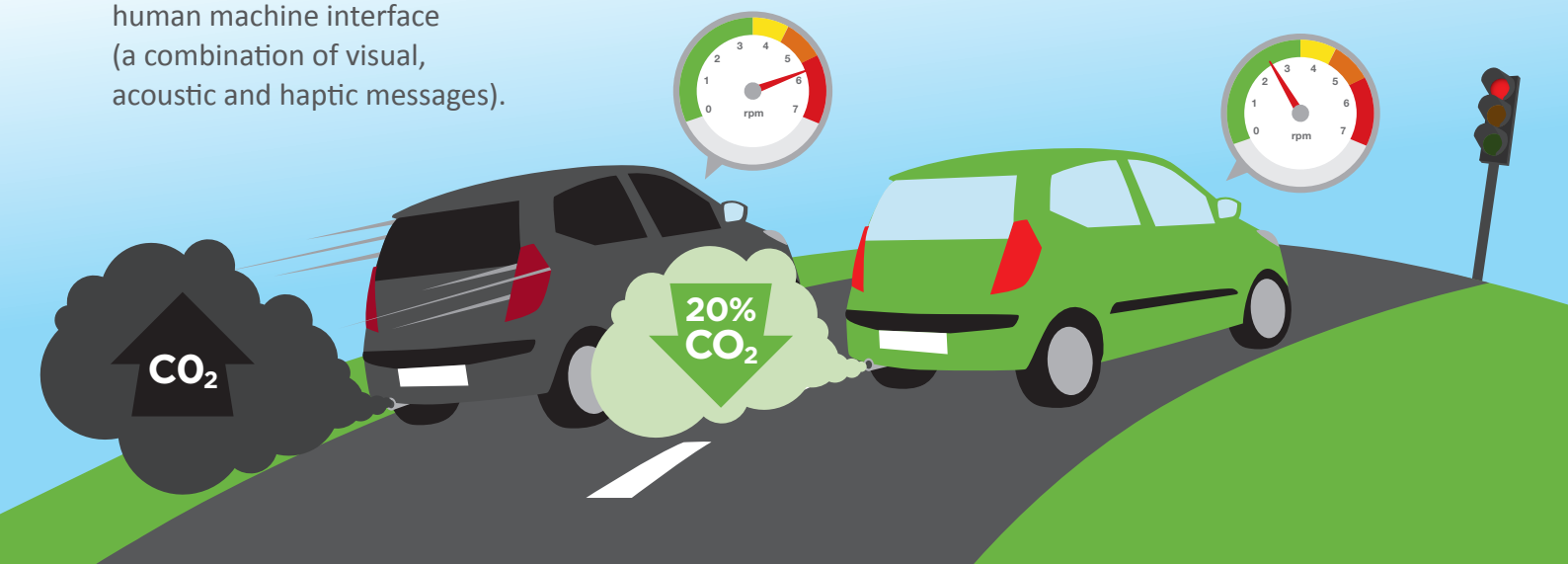
ecoDriver targets a 20% reduction of CO_2 emissions and fuel consumption in road transport by encouraging the adoption of green driving through a dedicated multimodal human machine interface (a combination of visual, acoustic and haptic messages).

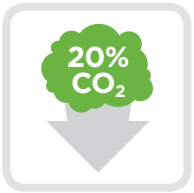
Drivers can prepare their trip in advance and chose a fuel saving route. While in-trip, they receive eco-driving recommendations adapted to the driving style and to the vehicle characteristics in order to maximise user acceptance.

After the trip, drivers are informed about their performance and receive further advice. Through different means, the system will continuously encourage drivers to improve their behaviour.



ecoDriver goals

ecoDriver aims to…



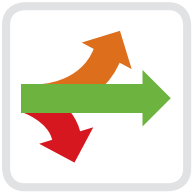
1. **Achieve a 20% reduction of CO_2** emissions and fuel consumption in road transport by delivering effective green driving advice and feedback.

2. **Maximise system effectiveness and acceptance** by adapting the eco-driving human-machine interfaces to the driving style, traffic conditions, powertrain and vehicle type.

3. Test and compare the **effectiveness of nomadic and built-in navigation systems** in encouraging green driving.

4. Maintain or even **enhance driver safety** while providing eco-driving support.

5. **Scale-up the results** obtained from test trials to Europe, and carry out a social cost-benefit analysis to assess the economical feasibility of a potential market deployment of the ecoDriver system.



6. Explore how eco-driving related CO_2 reductions might be affected by **different future technological, political, and lifestyle scenarios**.

Providing the right feedback at the right moment

As the driver is entering a hill on a motorway, he receives visual advice to reduce the speed from 120 to 100 km/h.

A voice message instructs a truck driver on a motorway to turn on cruise control and to set it at 80 km/h.

A driver is accelerating harshly as a traffic light turned green. The pedal, however, is becoming stiffer, encouraging a softer and more ecological acceleration.

Few people drive in an efficient manner. Some might accelerate in spite of approaching a red traffic light; others insist on keeping a low gear to profit from a more responsive engine; the majority of us ignore the most efficient speed when driving uphill. These examples have one thing in common: they represent unnecessary CO_2 emissions and a waste of fuel.

ecoDriver will support drivers in achieving a more efficient and environmentally friendly driving style. For a particular circumstance, the ecoDriver system will deliver the most appropriate feedback – whether it is visual, acoustic, haptic, or a combination of them.

Consortium partners

ITS University of Leeds

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BMW Group Research and Technology

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CTAG Centro Tecnológico de Automoción de Galicia

TomTom

ika Institut für Kraftfahrzeuge RWTH Aachen University

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Duration: 48 months (1 October 2011 - 30 September 2015)
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EU contribution: €10.7 Million
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