



European Commission

Enterprise and Industry
Directorate-General

The Regulatory Approach to MACs in the European Union

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MACs – EU Policies

Two sources of greenhouse gas emissions:

- 1) Direct greenhouse gas emissions from MACs
(refrigerants)**
- 2) Indirect greenhouse gas emissions from MACs
(increase of fuel consumption / CO₂ emissions)**

MACs direct emissions - regulatory acts

3 legal acts

- 1) **Directive 2006/40/EC** relating to emissions from air-conditioning systems in motor vehicles
- 2) **Commission Regulation (EC) No 706/2007** laying down administrative provisions for the EC type-approval of vehicles, and a harmonised test for measuring leakages from certain air conditioning systems
- 3) **Commission Directive 2007/37/EC** amending Annexes I and III to Council Directive 70/156/EEC

MACs direct emissions – control of leakage

1st STEP

Control of leakage of certain fluorinated greenhouse gases with a global warming potential (GWP) > 150 in MACs

MANDATORY as from:

21 June 2008 for new types of vehicles

21 June 2009 for all new vehicles

MACs direct emissions – phase-out

2nd STEP

The prohibition of MACs using F-Gases with GWP>150

as from:

1 January 2011 for new types of vehicles

1 January 2017 for all new vehicles

MACs direct emissions – dates

- Dates for the control of leakage (2008/2009) and for the phase-out of MACs using F-Gases with GWP>150 (2011/2017) are set in the legislation adopted by the European Parliament and the Council and therefore existing binding law
- Sole power of launching legal amendments lies with the European Commission (“right of initiative”)
- The European Commission has no intention to propose a change of these dates

MAC direct emissions -

Training programmes for personnel

Regulation (EC) No 842/2006

- F-gases (also in mobile equipment) shall, to the extent that it is technically feasible and does not entail disproportionate cost, be recovered by appropriately qualified personnel, to ensure their recycling, reclamation or destruction
- Rules on appropriate qualification of personnel recovering F-gases from MACs established by Commission Regulation (EC) No 307/2008 of 2 April 2008
- Minimum requirements for training programmes of personnel
- Conditions for mutual recognition

MAC indirect emissions - CO₂ Communication

Communication from the Commission (7.02.2007) on the review of the Community Strategy to reduce CO₂ emissions from cars

Average new car fleet will have to reduce emissions to no more than **130 g/km** CO₂ through powertrain technology (that is relevant for emissions on the test cycle)

Additional **10 g/km** by other technological improvements and increased use of bio-fuels

These **complementary measures** include efficiency improvements for certain vehicle aspects with a high impact on CO₂ emissions:

- **Efficiency requirements for air-conditioning systems**
- Tyre pressure monitoring systems
- Low rolling resistance tyres
- Gear shift indicators
- Mandatory fuel efficiency targets for light commercial vehicles (vans)

MAC indirect emissions - CO₂ Strategy

1st step

- Regulation 443/2009/EC setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles published on 23 April 2009

- This Regulation implements part of the integrated approach by establishing emission performance standards for new passenger cars

Next steps

- Complementary measures

MAC indirect emissions - Test Procedure

Test procedure - physical (and virtual?) testing

- Draft MAC test procedure currently being developed
- Implementation as part of existing CO₂ measurement procedures
- Minimum MAC performance requirements possible at a later stage
- The enforcement of the legislation to attain the reduction of the **10g/km** of CO₂ emission target by different administrative measures

MAC indirect emissions - Test Procedure

Test procedure - physical (and virtual?) testing

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MAC indirect emissions - Test Procedure

- Cost-efficient
- Should incentivise reduction of emissions resulting from MAC use in real driving:
 - No “academic” exercise trying to provide the best possible accuracy for environmental impact of MAC use
 - But designed such that technical measures reducing/not-reducing “MAC emissions” established by the test procedure reduce/do-not-reduce “MAC emissions” in real driving
- Suitability for “virtual testing”, which may be developed in parallel or at a latter stage (i.e. availability of virtual testing is no condition for future legislation!)
- Assessment of the whole vehicle, including the impact of non-MAC components such as glazing or insulation

MAC indirect emissions - Test Procedure

- Consortium of contractors led by TNO, including partners like TUG and the JRC
- Wide participation of stakeholders: Member State experts, vehicle manufacturers, relevant suppliers, consumer organisations (automobile clubs etc.),...
- Draft MAC test procedure should be available by August 2010
- Detailed state of play of test procedure to be presented separately



Thank you!

Thank you for your attention!

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More information: http://ec.europa.eu/enterprise/sectors/automotive/environment/macs/index_en.htm