



Phase-Out of HFC-134a in Mobile Air Conditioning in the largest car market of the world

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Outline

- Introduction: Deciding in the EU
- Main positions of the institutions
- Next steps
- Some global implications
- Conclusions

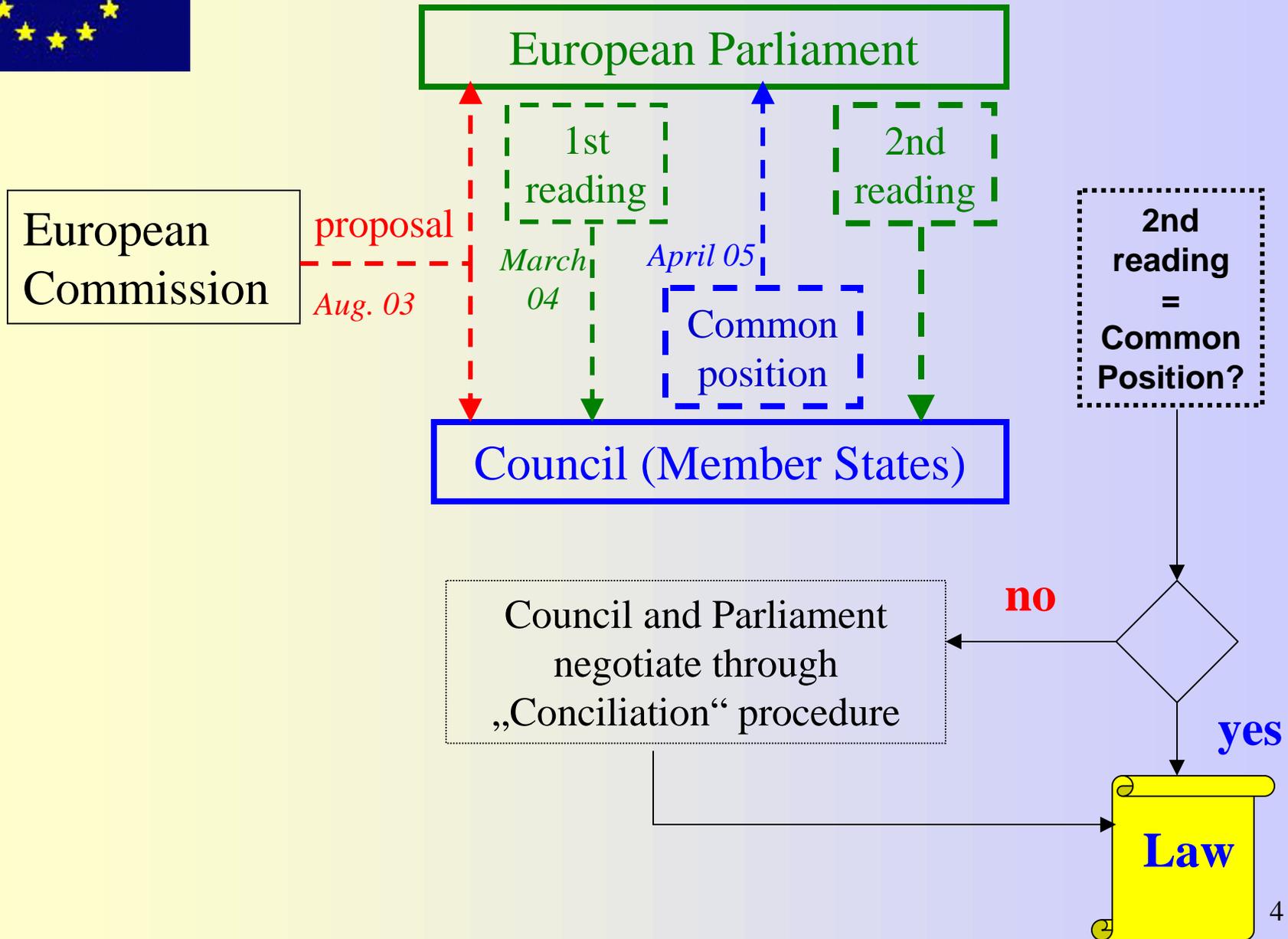


Why a proposal to reduce emissions of fluorinated gases?

- **Climate Change**
 - EU Kyoto commitments -8% reduction of GHG by 2010-2012 relative to 1990
 - Measures needed to reduce GHG emissions also after 2012
- **European Climate Change Programme**
 - Identified reduction of fluorinated gases as a cost-effective measure
 - Mobile air condition (MAC) included in the proposal for an overall legislative package of the Commission in August 2003



Deciding on the F-gas legislation in EU





European Commission's Proposal 2003

(Note: presentation covers only the MAC part)

- Based on extensive stakeholder consultation:
See **MAC SUMMIT 2003** at
<http://www.europa.eu.int/comm/environment/air/mac2003/index.htm>
- Proposed phase-out 2009-2013 using a flexible system of transferable quotas
- Proposed to include HFC-152a as an option
- Several technical requirements including leakage rate reduction up to 2009.
- *In 2003 award from EPA for “regulatory flexibility”*



Effects of the proposal

- Applies to the largest car market in the world
 - 17 million cars with 450 million people
 - Exports cars worth €66 billion every year
 - Imports cars worth €30 billion every year
- When fully implemented reduces fluorinated gas emissions by about 30 million tonnes of CO₂ eq per annum



European Parliament: First Reading March 2004

- Agreed that phase-out of HFC-134a needed
 - Disagreed with the flexible quota system
 - Proposed it to be based in the vehicle “type approval” system
 - see Directive 70/156/EEC and its amendments which is used for allowing placing new cars on the market in the EU

<http://europa.eu.int/comm/enterprise/automotive/pagesbackground/regulatoryframework.htm>

- Proposed to postponed dates to 2011-2014
- Wanted to exclude HFC-152a as an option



European Council: Political Agreement October 2004

Note: Political agreement is practically the same as the Common Position

- Agreed to phase-out of HFC-134a
- Based on the “type approval” system
- Proposed to change dates to 2011-2017
- Agreed on leakage requirement of HFC-134a
- Proposed to include HFC-152a as an option
- Made many technical amendments (*separate presentation!*)
 - Including leakage rate reduction <40 g/year for single evaporator and 60 g/year for dual evaporator systems



Two remaining issues

- End of phase out
 - Parliament suggested 2014, Council 2017
- Coverage
 - Include or exclude HFC-152a?



Commission's views on the Common Position

- In general supportive
- Supports inclusion of HFC-152a
- Can support 2011 as start date of phase out
- End date of 2017 more practical than 2014

Next Steps

- Formal Adoption of Common Position in April 2005
- “Second reading” by Parliament by September 2005
- In the unlikely event of disagreement: “Conciliation” between Parliament and Council by the end of 2005
- **Entry into force two years after approval**
 - late 2007 or early 2008



Possible global implications

- Exporters to the EU: need to meet the new requirements
 - “Type approval” system treats European and foreign produces equally!
- Importers of cars from the EU: standards are likely to change
 - Maintenance of alternative systems, in particular CO₂, is an issue
- Most car producers likely to offer CO₂ systems soon
 - CO₂ is a low cost (non-patented) refrigerant
- It could be that other phase-outs of HFC-134a following the EU
 - In particular signatories of the Kyoto Protocol
- Strategic choices for car manufacturers!



And what about fuel consumption?

- EU environment Council in 2000 asked the Commission to address GHG emissions from MACs – both HFC & CO₂
- Increasing penetration rate of MACs **and** auxiliary heaters
- Additional fuel consumption is due to:
 - Weight of the equipment
 - Use of the equipment
- Up to now, EU strategy on car fuel economy does not cover MACs: first need to define a test method to assess the energy efficiency of these equipment



Defining a test method for MACs' Fuel efficiency: the 2002-2003 study

- Conclusions of Commission's initial study:
 - Focus on MACs (and then simplify for aux. heaters)
 - Double test procedure (MAC on/off) for each vehicle would be costly
 - Need to define a cost-effective approach
- Preliminary “family approach” proposed:
 - Subsystem 1: power generation system
 - Sybsystem 2: air conditioner system
 - Sybsystem 3: vehicle's body & environment
- Additional FC would be derived from using the “family approach” and a “parent vehicle” for the fuel test



Defining a test method for MACs' Fuel efficiency: the 2004-2005 study

- Objectives of the Commission's second study:
 - Refine the family approach and carry out sensitivity analysis
 - Establish a detailed test protocol
 - Formulate policy proposals
- Possible options:
 - Include MAC FC information on cars' FC labels?
 - Amend EU test procedure to include MAC's FC?
 - Establish reference points/ranking for the EU market?
 - (...)?
- Preliminary results: development of family approach would need more support from industry and proves difficult; but a simplified test procedure could be established.
- Results awaited first-half 2005



Conclusions

- Leakage control and the phase-out of HFC-134a in MACs will contribute to meeting EU Kyoto objectives
- EU is the largest car market in the world
 - About 17 million vehicles produced every year
- Phase-out of HFC-134a will take start on 2011
 - About 2 million alternative MAC systems will enter EU market
 - After the completion of the phase-out over 15 million new alternative units will be in the market annually



Conclusions (cont.)

- Some details (HFC-152a and end date) to be determined
- Leakage test is under development (*separate presentation*)
- First step in regulating fluorinated gases
 - Eg. trucks and buses will be looked into
- No leaky HFC-134a MAC systems allowed in the EU from about 2008 onwards
- All MACs need aftermarket servicing and repair



Are you ready?

Thank you for your attention!