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Meeting customer demand and reducing the environmental impact of Mobile Air Conditioning Systems - The responsibilities of car manufacturers

**Speech of Ivan Hodac, Secretary-General of ACEA, at the MAC Summit
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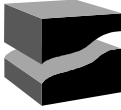
Misses Commissioner,

Ladies and Gentlemen,

it is a great pleasure for me to have the possibility to contribute to the opening of this conference. I appreciate very much the way the industry has been involved in all the discussions so far. I strongly believe that the expertise within the industry can be of great assistance to regulators to elaborate the most appropriate means to achieve the objectives set out by society.

Let me start by a few comments on the very subject of this conference: Mobile-Air-Conditioning systems.

Over the last two decades, consumer expectations with regard to the level of safety and comfort in their vehicles have increased significantly, fostering product innovation and competition among manufacturers. The remarkable improvements in comfort of interior climate in cars have been achieved by optimising existing systems, as well as by introducing additional systems. In recent years suppliers have spent a great amount of their engineering capacity to improve air conditioning



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sub-systems whilst Car Manufacturers have optimised the integration of these systems into the car.

In order to improve the climate comfort inside cars, efforts have been undertaken to distribute the conditioned air in the most effective and comfortable way. Intelligent systems are developed for temperature regulation and for efficient distribution of the conditioned air to where it is needed. Window glasses reflecting infrared radiation from sunlight have been developed and are becoming available for cars in the upper segments. This system for example would be available without any additional energy consumption. Developments do not just apply to cooling systems: more efficient technologies are being applied to car heating systems, with the waste heat from the engine being efficiently utilised to improve the comfort of passengers.

Car manufacturers understand the different needs of their customers in different countries. Preferences vary from market to market and manufacturers have developed products based on standardized technologies that can be adapted to local conditions and local marketing strategies. Customers base their decision to purchase a car on a wide range of car attributes. They want a car with high safety standards, good driving performances, high energy (fuel) efficiency, and a car that has the comfort standards that fits their specific needs. In the case of "Climate Comfort" customers simply expect from car manufacturers that the relevant systems are designed in a way which satisfies best their expectations within the cost bracket they see as reasonable. Therefore, it is both the responsibility and the interest of car manufacturers and car dealers to provide customers with the cars they ask for, and to give them necessary advice about how to use them in the most efficient way.



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For these reasons, European car manufacturers are of the opinion that any specific regulations on a single sub-system of cars would lead product development in a wrong direction and would implicitly compromise the development of other, more efficient alternatives. A regulation on a sub-system like air-conditioning - which has been discussed in the past - could distort the priority given to different technical strategies and therefore should be avoided, as it could end up in a situation where systems are developed to respect legislation only.

Car manufacturers are keen to discuss strategies to reduce non-transport-related energy consumption. While the transport-related energy consumption of a car depends on mileage and driving style, the non-transport consumption of comfort related systems depends strongly on the external climatic conditions and on individual preferences. Therefore we think, that the efficiency of systems like air conditioning should be identified by the amount of fuel used to operate the system over a period of time; a unit of measure could be litres [of fuel] per hour [of operation]. Such a measure would provide customer with the fuel consumption impact regardless of mileage driven and would be appropriate to systems which can be switched on and off at the driver's discretion. Taking into account the different climatic conditions in the European regions, this measurement system would provide a realistic view on the emission/consumption to be expected from the use of air-conditioning. Manufacturers could increase awareness regarding the fuel consumption and the CO₂ emissions of such systems in the car handbook or through the Internet.



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Let me also make a few remarks with regard to other main issue to be covered at this conference, the direct GHG emissions from air conditioning systems.

Losses of refrigerants from Air-Conditioning-Systems are considered to contribute directly to the global warming problem. Strategies have to be developed to minimize losses of refrigerants, which have a high global warming potential. Improving the air-conditioning system's 'tightness', i.e. minimizing refrigerant losses through design optimization, and improving servicing processes are to be strongly encouraged. Using alternative refrigerants with a lower global warming potential is also an option, which needs to be studied by manufacturers in the same way. The decision for either one or the other option needs to be based on a thorough cost/benefit analysis. The results of the assessment will depend on the specific circumstances in each country deriving from different climatic conditions and different economic backgrounds.

The automobile industry is firmly committed to continue researching alternative refrigerants with a view to reduce the overall impact of vehicle air conditioning. A holistic approach is necessary in order to properly assess the life-long environmental impact of alternative refrigerants, including the energy efficiency of systems using these gases. It is possible that long term an alternative refrigerant will emerge as a safe and cost-effective solution. For the time being, we have to recognize that alternative systems are still very expensive and that society has less costly options to avoid Greenhouse Gas emissions. The conventional systems using R-134a still provide the best cost-and-benefit performance.



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Pending the introduction of an alternative refrigerant, the industry continues to work, along with its suppliers, to improve the environmental performance of R-134a systems. The new generation of R-134a air conditioning systems and the adoption of improved working practices will result in substantial environmental benefits.

Areas where potential improvements have been identified include:

- Optimisation of AC system design to minimise total volume of refrigerant charge;
- Reduction of leakage rates through the utilisation of high quality components and improved technology. for example, hoses with lower permeation rates, reduced flexible hose lengths, improved connections, "hermetically sealed" designs, etc;
- Improved recovery and recycling of R-134a during servicing and vehicle disposal (ELV stage);
- Improved dealer practice and training for operators.

Recognizing the issue of fluorinated gases, the car manufacturing industry is fully committed to the responsible and appropriate use of R-134a in vehicle air conditioning systems. It must be emphasized that the industry accepts the need to reduce the emissions of greenhouse gases in a holistic approach and is prepared to work constructively with the European Commission to help formulating policy to that end.