INSTITUT INTERNATIONAL DU FROID
Organisation intergouvernementale pour le développement du froid

INTERNATIONAL INSTITUTE OF REFRIGERATION
Intergovernmental organization for the development of refrigeration

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Statement given by Didier Coulomb,
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Mr. President, Dear Delegates,

Refrigeration is at the core of two major threats to the environment: ozone depletion and global warming. Both these causes of concern have led to two different protocols, the Montreal and Kyoto protocols, and both should be treated with greater international coordination; both are related, and what is done to alleviate the one has repercussions on the other, for better or for worse.

Refrigeration impacts on both these phenomena in two ways:

- Refrigeration uses refrigerants, some of which have a negative effect on the environment when emitted in the atmosphere, if the equipment is not sufficiently tight or if the refrigerants are not properly recovered when disposal of the equipment takes place:
  – CFCs and, to a certain extent, HCFCs, contribute to the depletion of stratospheric ozone;
  – CFCs, HCFCs and HFCs are greenhouse gases.
  However, natural refrigerants, (ammonia, CO_2, hydrocarbons) that are gradually replacing them in many refrigeration units, do not have a significant direct impact.
- Refrigeration technologies are very energy-consuming, thus directly contributing to the emission of large amounts of CO_2. When including air conditioning, they account for about 15% of worldwide electricity use. Typically, over 80% of the global warming impact of refrigeration systems is due to this electricity use. Energy efficiency, which varies according to units and refrigerants used, is therefore an essential element to take into consideration.

The benefits of refrigeration to mankind are considerable:

- refrigeration already plays an essential part in food and health-related issues; it is to become even more indispensable, as is shown by the increasing demand for air conditioning, caused by global warming;
- besides, refrigeration technology is necessary for the implementation of many future energy sources: the liquefaction of natural gas and hydrogen or thermonuclear fusion in particular, not to mention the liquefaction of CO_2, in view of its storage.

In order to face increasing demand, while reducing its impact on the climate, stakeholders in the refrigeration field, and the International Institute of Refrigeration (IIR) in particular, are leading many actions:

- increasing research into refrigerants, in particular natural refrigerants;
- reducing refrigerant emissions thanks to better containment, reinforcing the monitoring of tightness, developing systems using less fluids;
- reducing the energy consumption of the units, with a view to bringing the figures down by a third before 2020;
- developing novel environmentally-friendly refrigeration technologies (magnetic refrigeration, solar-powered units in developing countries...).

The IIR is an intergovernmental organization. It brings together 61 developed and developing countries and countries with transition economies, which represent 80% of the global population. The IIR's mission is to promote and disseminate knowledge of refrigeration technology and all its applications. Thanks to the international scope of its network of experts, the IIR contributed to the success of the Montreal Protocol and is actively committed to the mitigation of global warming. A lot is still to be done for both these issues and the IIR invites all countries to join it in its task.