

Atmosphere 2010



Brussels, BELGIQUE
September 27-28, 2010

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International Institute of Refrigeration (IIR) - www.iifiir.org

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Refrigeration



Mission of the IIR

The International Institute of Refrigeration (IIR) is the only independent intergovernmental organization which promotes knowledge of refrigeration and associated technologies that are necessary for life in a science-based, cost-effective and environmentally sustainable manner including:

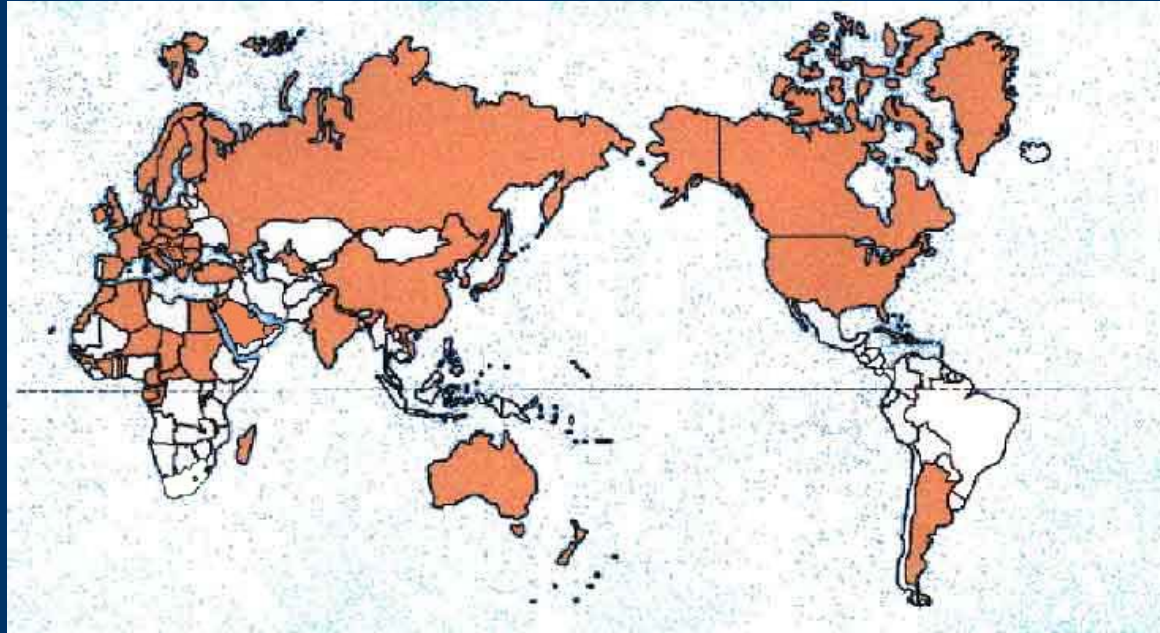
- Food quality and safety from farm to consumer
- Comfort in homes and commercial buildings
- Health products and services
- Low temperatures and liquefied gas technologies
- Energy efficiency
- Use of non-ozone depleting and low global warming refrigerants in a safe manner

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The IIR - Members

- 62 Member Countries
Developed and developing countries



- Commission Members (nominated by countries)
- Corporate and Private Members
 - Private companies (equipment, utilities, food and health products,...), Consultants, Universities,...
 - For a valuable and updated information

Tools (1)

- Selection of scientific, technical and economical articles from all over the world, in various languages, included in a database:
Fridoc
 - 87 000 entries, 3 000 keywords, 50 000 authors
- Periodicals
 - International Journal of Refrigeration (IJR) for scientific articles with peer-review. The best impact factor in its field.
 - Newsletter
 - Bulletin
- Books, guides:
Technical books, brochures, diagrams...
Ex.: Guide on Ammonia (English, French, Spanish versions),
Bibliography on CO₂
- Reference documents

Tools (2)

- Training courses
- International standards
- Review articles
- Informatory notes

Natural refrigerants are the most numerous subjects of research articles, proposed and selected in the IIR network.

✓ See publications on the IIR stand

- Statements prepared for international events:

- Montreal Protocol on ozone depletion:

The next one: MOP22 (Kanpala, Uganda, 2010)

- Mitigation of Global Warming and Kyoto Protocol:

The next one: COP-16/CMP-6 (Cancun, Mexico, 2010)

Tools (3)

- **Conferences**

- 3-6 IIR Conferences per year and
- 8-15 IIR co-sponsored Conferences per year on an average

Particularly:

- **ATMOsphere 2010**, Brussels, Belgium, September 27-28, 2010

- **Ammonia Refrigeration Technology**, Ohrid, Macedonia (FYROM), April 14-16, 2011

**23rd IIR International Congress of Refrigeration:
Refrigeration for Sustainable Development
Prague, Czech Republic, August 21-26, 2011**

- **10th IIR-Gustav Lorentzen Conference on Natural Working Fluids (GL2012)**
Delft, Netherlands, June 25-27, 2012

✓ IIR Conference Proceedings on sale

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The environmental issue is a major subject of these publications and conferences:

- For sustainable development: use of refrigeration equipment is necessary for life and will continue to expand fast particularly in emerging and developing countries
- Reducing the energy consumption (the main impact factor of refrigerating systems on global warming): indirect emissions
- Reducing refrigerant charges and losses, for environmental (direct emissions) and safety issues
- Promoting non-ozone depleting and low-global warming refrigerants
 - Exchange of information
 - Improving technologies
 - Adapting them to various climate conditions, for developing and developed countries all over the world

Natural refrigerants can be a good solution in most cases.

The most important markets are:

- **In Europe or Japan:** taking into account current constraints, natural refrigerants are already a well-known and promoted option for new equipment. The most important competitors will be HFOs. The mobile air conditioning market is lost. However, natural refrigerants took the lead in other markets. Safety obstacles seem to be overcome (cf ammonia in France,...).
- **In the USA:** a key issue, the authorization of hydrocarbons for domestic refrigeration. The competition with HFOs will focus on safety and efficiency. Good information is required (IIR conferences,...).

- **In emerging countries:** certain countries consider that current solutions are not adapted to their climates and are costly. However, universities of these countries attend our conferences, present papers and we shall promote them. A key issue will be the possibility or not to develop refrigerants with intermediate GWPs (cf TEAP proposal).

Less costly (initial cost) solutions shall be developed in the near future.

Projects with international funding should promote natural refrigerants to a greater extent, taking into account investment and operating costs.

Emerging countries will be the dominant market. Convincing emerging countries is also necessary in order to develop international regulations.

CONCLUSION

Global warming is a huge challenge for the future, for all countries. The global warming potential of refrigerants is a major issue.

Natural refrigerants are already an efficient, cost-effective and safe solution in many applications in refrigeration and air conditioning, including in developing countries and warm countries, even if solutions must be adapted.

They often require different equipment than « chemical » refrigerants (CFCs, HCFCs, HFCs) for technical and safety reasons.

They should be better promoted for new equipment and the replacement of old equipment.

They still require improvements, research and development in various applications and we are working on these improvements.

Have a fruitful conference. Thank you.

See our Web site: www.iifiir.org

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on these major issues**

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