



**UNITED NATIONS ENVIRONMENT PROGRAMME**  
**INTERNATIONAL INSTITUTE OF REFRIGERATION**  
**AREA EUROPEAN RAC ASSOCIATION**  
**ASSOCIAZIONE TECNICI DEL FREDDO**  
**RENEWABLE ENERGY INSTITUTE**  
**CENTRO STUDI GALILEO**

## 20<sup>th</sup> EUROPEAN CONFERENCE

### THE LATEST TECHNOLOGIES IN REFRIGERATION AND AIR CONDITIONING

*REFRIGERANTS, HEAT PUMPS, COLD CHAIN, ENVIRONMENT, ENERGY, TRAINING, CERTIFICATION, LEGISLATION, STRANDARD, SAFETY*

8<sup>th</sup> – 9<sup>th</sup> June 2023

**Politecnico di Milano, De Donato Room**  
 Simultaneous translation: English - Italian

*In Association with Global Leading Researchers and Experts from:*  
**United Nations Environment Programme (UNEP)**  
**United Nations Industrial Development Organization (UNIDO)**  
**European Commission DG Clima**  
**International Institute of Refrigeration (IIR)**  
**Association Française du Froid (AFF)**  
**AREA - ASERCOM - ASHRAE - AHRI - EPEE**  
**Politecnico di Milano, Torino**  
**Universities of Ancona, Genova, Padova**  
**and all the AC&R European Associations**



**Politecnico di Milano**  
 Piazza Leonardo Da Vinci, 32 - Milano (Italia)

## General Introduction

**INTRODUCTION TO THE TOPICS OF THE CONFERENCE; EUROPEAN AND GLOBAL RAC SITUATION. THE COLD CHAIN FOR VACCINES. TECHNOLOGIES; EQUIPMENT AND COMPONENTS. F-GAS AND REFRIGERANTS. ENERGY EFFICIENCY AND RENEWABLES. POLICY AND REGULATIONS.**

**M. Buoni** Air Conditioning & Refrigeration Association – AREA  
**J. Curlin** United Nations Environment Programme – UNEP  
**D. Coulomb** International Institute of Refrigeration – IIR

## First Session

**NEW REFRIGERANTS AND FUTURE PERSPECTIVES IN REFERENCE TO EU 517/2014, F-GAS REGULATION, ENERGY SAVING**

**CHAIRPERSONS: A. Cavallini** Padova University – IIF-IIR,  
**D. Coulomb** IIF-IIR, **N. Kagawa** JSRAE, **W. Chakroun** ASHRAE,  
**C. Zilio** Padova University, **A. Hafner** NTNU

**New low GWP refrigerants. Developments, perspectives and forecasts on new alternative refrigerants. New synthetic and natural refrigerants, pure and mixtures HFC, R32, HFO-1234yf/ze/za, HFO mixtures, CO<sub>2</sub>, ammonia, hydrocarbons; secondary refrigerants; lubricants for synthetic refrigerants.**

**Speakers: D. Coulomb** IIR - **N. Kagawa** JSRAE - **W. Chakroun** ASHRAE - **A. Hafner** NTNU - **C. Zilio** Università di Padova – **S. Filippini** LU-VE Group - **S. Saab** Chemours - **C. Marotta** General Gas – **M. Lorusso** Nippon Gases Refrigerants

## Debate

With the participants in the conference

**Tentative timetable: 9 am – 1 pm / 2 pm – 6 pm**  
**Coffee break: 11-11.30 am – Lunch break: 1-2 pm**

## Second Session

**NEW COMPONENTS & EQUIPMENT WITH ALTERNATIVE REFRIGERANTS, CONSIDERING THEIR ENERGY EFFICIENCY AND ENVIRONMENTAL ISSUES, RESULTS AND UPDATES**

**CHAIRPERSONS: E. Macchi, G. Lozza** Polytechnic of Milan,  
**D. Del Col** Padova University, **S. Minetto** CNR Padova,  
**D. Coulomb** IIF-IIR, **C. van de Sande** AREA

**Energy issues in relation to the air conditioning and refrigeration components and plants optimization. Secondary refrigerant plants, CO<sub>2</sub>, HC systems. Compressors and systems. Energy optimization. New components for domestic, commercial, and industrial refrigeration and air conditioning. Process and design.**

**Speakers: D. Del Col** Università di Padova – **S. Minetto** CNR Padova - **S. Capanelli** Carel Industries - **G. Dorin** Officine Mario Dorin - **P. Trevisan** Bitzer - **B. Bella** Emerson - **K. Nourrice** Frascold - **M. Bassi** Embraco - **M. Barilari** Rivacold - **S. Pompeo** ERRECOM

## Debate

With the participants in the conference

### Conference Organizer & Secretariat

**CENTRO STUDI GALILEO &  
 ASSOCIAZIONE TECNICI DEL FREDDO**

**To participate, please get in touch with us:**  
[conference@centrogalileo.it](mailto:conference@centrogalileo.it) / +39 0142 452403

### Subscription fees to the conference:

- **Discounted early bird registration fee**  
**Euro 240 + VAT (22%) – until 31<sup>st</sup> Jan. 2023**
- **Standard participation fee**  
**Euro 450 + VAT (22%) – starting 1<sup>st</sup> Feb. 2023**

## PRESIDENTS & KEYNOTE SPEAKERS

**JIM CURLIN**, *Head of OzonAction, Law Division*  
United Nations Environment Programme – UNEP

**DIDIER COULOMB**, *Director General*  
**ALBERTO CAVALLINI**, *Honorary President*  
International Institute of Refrigeration – IIR

**OLE NIELSEN**, *MP Division Chief*  
United Nations Industrial Development Organization – UNIDO

**BENTE TRANHOLM-SCHWARZ**, *Deputy Head*  
European Commission, Climate Action DG Clima

**STEPHEN YUREK**, *President and CEO*  
Air Conditioning, Heating and Refrigeration Institute – AHRI

**FAROOQ MEHBOOB**, *President*  
American Society of Heating and Air-Conditioning Engineers – ASHRAE

**TBA**  
European Partnership for Energy and the Environment – EPEE

**NONORU KAGAWA**, *Board Member*  
Japan Society of Refrigerating and Air Conditioning Engineers – JSRAE

**COEN VAN DE SANDE**, *President*  
Air conditioning and Refrigeration European Association – AREA

**CLARE PERRY**, *Climate Campaign Leader*  
European Investigation Agency – EIA

**MARCO MASINI**, *President of the Association of European Refrigeration Component Manufacturers – ASERCOM*

**FRANCESCO SCUDERI**, *Secretary General*  
European Industry Association – Eurovent

**MADI SAKANDÉ**, *President of the Union of Associations of African Actors in Refrigeration and Air Conditioning – U-3ARC*

**GERALD CAVALIER**, *President*  
CEMAFROID | Association Française du Froid – AFF

**LUCA BINAGHI**, *President*  
Associazione costruttori sistemi climatizzazione – Assoclima

**FRANCESCO MASTRAPASQUA**, *President of Assocold*

**ENNIO MACCHI**, *Professor Emeritus at Politecnico di Milano*  
**GIOVANNI LOZZA**, *Professor Energy Dept at Politecnico di Milano*

**MARCO MASOERO**, *Director Energy Dept., Politecnico di Torino & Vice President, Associazione Tecnici del Freddo*

**FABIO POLONARA**, *Co-chair TEAP RTOC & Director Industrial Engineering Dept., Università Politecnica delle Marche*

**LUCA TAGLIAFICO**, *Professor at Università di Genova*

**SILVIA MINETTO**, *Researcher at ITC-CNR Padova*

**ARMIN HAFNER**, *Professor at Norwegian University NTNU*

**CLAUDIO ZILIO**, *Professor at Università di Padova*  
**DAVIDE DEL COL**, *Professor at Università di Padova*

9 am, Friday – 9<sup>th</sup> June 2023

## Third Session

**POLICY: GLOBAL F-GAS PHASE DOWN AND EU REGULATION REVIEW, TRAINING AND CERTIFICATION.**

**CHAIRPERSONS: J. Curlin** UNEP, **B. Tranholm-Schwarz** DG Clima, **TBA** EPEE, **C. Perry** EIA, **M. Masini** ASERCOM, **S. Yurek** AHRI, **F. Mastrapasqua** Assocold, **C. Van De Sande** AREA

**The Kigali Amendment: HFC Phase-down, flammable refrigerants' standards, illegal refrigerants, inspections, logbook, maintenance. Containment, recovery and recycling. Training and certification in Europe and Italy. Safety issues. Products and components' certification.**

**Speakers: B. Tranholm-Schwarz** EU Commission DG Clima - **TBA** EPEE - **M. Masini** ASERCOM - **F. Mastrapasqua** Assocold - **C. Perry** EIA - **J. Curlin** UNEP - **S. Yurek** AHRI - **C van de Sande** AREA - **K. Kelly** Business Edge

## Fourth Session

**GREEN COOLING, HEAT PUMPS AND ENERGY EFFICIENCY**

**CHAIRPERSONS: A. Cavallini** Padova University - IIF-IIR, **F. Scuderi** Eurovent, **L. Binaghi** Assoclima, **L. Tagliafico** Genova University, **F. Polonara** TEAP-RTOC

**European Green Deal, ecodesign. Energy efficiency in plants. Heat pumps, cooling with absorption and adsorption plants. Renewable energy and chemistry in air conditioning and refrigeration. Space cooling. Evaporative cooling, district cooling and magnetic cooling. Mobile air conditioning. LNG.**

**Speakers: M. Masoero** ATF & Politecnico di Torino - **D. Coulomb** IIR - **F. Scuderi** Eurovent - **L. Binaghi** Assoclima - **L. Tagliafico** Università di Genova - **F. Polonara** TEAP-RTOC - **C. Malvicino** Stellantis - **K. Berglöf** ClimaCheck - **T. Funder-Kristensen** Danfoss - **L. Rollino** C2R, Centro Studi Galileo - **G. Pellegrini** TEON

**Tentative timetable: 9 am – 1 pm / 2 pm – 6 pm**

**Coffee break: 11-11.30 am – Lunch break: 1-2 pm**

3.30 pm, Friday – 9<sup>th</sup> June 2023

## Fifth Session

**THE COLD CHAIN, FOOD AND VACCINES DISTRIBUTION AND CONSERVATION, COLD STORAGE AND TRANSPORT, CONTROLS AND DATA LOGGERS.**

**CHAIRPERSONS: M. Masoero** ATF & Poli Torino, **O. Nielsen** UNIDO, **M. Sakandé** U-3ARC, **G. Cavalier** AFF, **D. Coulomb** IIF-IIR

**New technology in the cold chain: vaccines and food preservation; vehicles, trains, ships, cold storages; applications in commercial and domestic refrigeration, supermarkets, hospitals, vaccination centres and industry. Energy saving optimization. Solar refrigeration. Insulation; environmental control in food processes, safety control in the cold chain ATP.**

**Speakers: O. Nielsen** UNIDO - **M. Sakandé** U-3ARC - **G. Cavalier** AFF - **D. Coulomb** IIR

## Debate

With the participants in the conference

## Conclusions and Recommendations

**D. Coulomb** International Institute of Refrigeration – IIR  
**J. Curlin** United Nations Environment Programme – UNEP  
**M. Buoni** Air Conditioning and Refrigeration Association – AREA

### Conference Organizer & Secretariat

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