

CASE STUDIES IN ENERGY EFFICIENT COOLING SYSTEMS

When: Wednesday 10th July 2024

6-8 pm

Where: Room 7-AB

Programme Objective:

To learn from positive case studies on maintaining high energy efficiency in cooling systems and to adopt practices that ensure sustained high energy efficiency (EE) throughout the lifespan of the equipment.

Presentations from Representatives of the industry and servicing sectors, international bodies and National Ozone Units (NOUs), Manufacturers engaged in training and servicing, Cooling system owners, Digital technology suppliers for cooling systems".

Side Event Agenda

- ❖ **Prof Fabio Polonara** - UNEP Technology and Economics Assessment Panel (TEAP-RTOC) – *Coordination - Introduction*
- ❖ **Yosr Allouche** - International Institute of Refrigeration (IIR) – *“Refrigeration and Sustainability: Pathways to Emissions Mitigation”*
- ❖ **Adlain Eyarmwen Nkie Akan** - Vice-President U-3arc Union of African Actors in refrigeration and air conditioning – AFRICA – *“Air Conditioner Split Systems in Africa”*
- ❖ **Marco Buoni** – Centro Studi Galileo and AREA Air conditioning and Refrigeration European Associations of contractors – EUROPE – *“Maintenance and Repair for the Optimization of Energy Efficiency in the Latest Technologies”*
- ❖ **National Ozone Units NOUs** from Africa, Europe and India - *tbc*
- ❖ **Rajendra Shende** – Green TERRE Foundation – INDIA – *Concluding Remarks & Looking Forward*



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Context:

Sustaining Energy Efficiency during life-long Operation of RAC sector is the first step to transition away from the fossil fuel.

"2023 was one of the hottest years on record in human history". On the positive side, 2024 stands to be a year of unprecedented opportunities for the Montreal Protocol to make substantial and measurable contributions to the Paris Climate Agreement, particularly in implementing the decisions made at COP28 in Dubai, such as the 'transition away from fossil fuels' and 'doubling energy efficiency by 2030'.

Background:

The extraordinary prospects and benefits can be derived not only from phasing down high-GWP HFC refrigerants but also, and more importantly, from designing and manufacturing cooling systems with enhanced energy efficiency, and most critically, from maintaining this efficiency throughout their lifetime. Sustained practices in servicing and maintenance to retain the initial energy efficiency will be a key area in implementing the Montreal Protocol and its Kigali Amendment.

The global demand for mechanical cooling is estimated to increase fivefold to tenfold in the next couple of decades. Most cooling systems manufactured globally operate at two to three times lower efficiencies than the best available models. Worse still, even the most efficient systems are not monitored to ensure their high energy performance is maintained over time. Therefore, 'Next Practices' that ensure enhanced energy efficiency during the operational lifetime of cooling systems will offer remarkable benefits to the Paris Climate Agreement.

According to the International Energy Agency's Net Zero Emissions by 2050 Scenario, the average efficiency rating of air conditioners sold would need to improve by at least 50% compared to the current installed efficiency by 2030 across all markets. This improvement aligns with the concept of energy efficiency and savings as the 'first fuel' in achieving net-zero emissions by 2050 and facilitating energy transitions.



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