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Revolution in U.S. heating market

It is hoped that the large U.S. heating market, which has relied on fossil fuels until now, will also steer toward heat pump heating under the environmental policies implemented by the Biden administration introduced earlier.

Proposals worth US\$ 520 million approved for PLI in India

The Government of India announced on November 5 that 26 air conditioner manufacturers have been selected under the performance linked incentive (PLI) scheme, with a total committed investment of 39 billion Indian rupee (INR) or about US\$ 523 million. Leading manufacturers have said that the PLI scheme would help provide a level-playing field to domestic manufacturers and create an enabling environment for the industry to compete globally

Emerson and NevadaNano to partner on refrigerant leak detection

Emerson is teaming up with NevadaNano, a leader in gas detection sensor technology, to develop products specifically designed to detect refrigerant leaks. NevadaNano has patented Molecular Property Spectrometer (MPS) technology able to be programmed to detect lower flammable (A1), mildly flammable (A2L), and higher flammable (A3) refrigerant gases, which will be combined with Emerson's heating, ventilation, air conditioning, and refrigeration (HVAC&R) gas sensing products to create solutions for the federal hydrofluorocarbon (HFC) phasedown mandated by the AIM Act.

Global Air-conditioner market 2021

Preliminary statistics show that the global air-conditioning market has seen a slight increase compared with the previous year. The market growth in the United States and even the entire Americas has been particularly significant, with the Americas experiencing rare double-digit growth. Both the European and Asian markets have seen a slight change. India has recovered quickly, but the major Southeast Asian countries are recovered only slowly.

Women in RACHP



Refrigeration, air-conditioning, and Heat-pumps (RACHP) are crucial for our health, nutrition, comfort, and well-being. It is one of the sectors that crosscuts many of the UN sustainable development goals and

can contribute significantly to safeguard the environment, advance welfare of humanity and support the growth of employment and economics worldwide.

Women engagement in this sector is either under-represented or un-recognized around the globe despite of the high potential that can be unleashed by encouraging women to pursue education and job opportunities in RACHP.

The International Institute of Refrigeration (IIR) and the OzonAction of UN Environment Programme (UNEP) in cooperation with several partners are undertaking this survey to better understand the background, motivation, challenges, and opportunities faced by women working in the in refrigeration, air-conditioning and heat pumps sector.

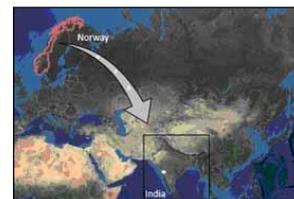
Norwegian R744 condensing units arrived in India for educational purposes



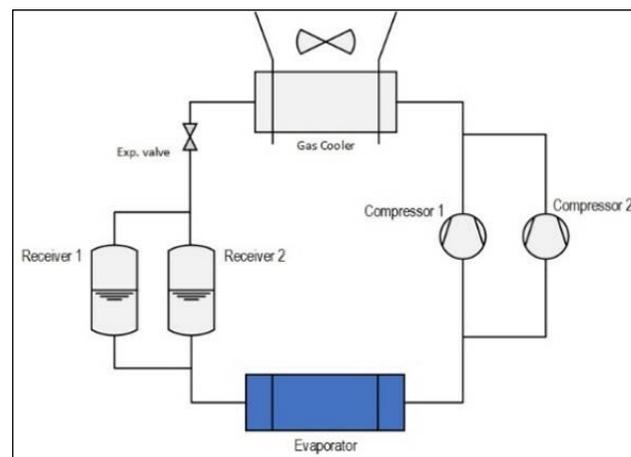
Three R744 condensing units were sent to India by Prof. Armin Hafner NTNU, to educate Indian institutions, end-users and vendors on clean cooling technologies, with the aim of helping India meet

global environmental targets.

Recently, within the framework of *INDEE+ project* and the *Intpart EduCool project* supporting the Indian refrigeration and Air Conditioning sector in the transition towards more sustainable and cleaner cooling solutions, three R744 condensing units were shipped from Norway to the three Indian institutions taking part in the cooperation Pileri, IISC Bangalore and CIFT.



Schematic of the R744 condensing unit (original, to be



adapted)



Pictures of the major components installed in the system (Receivers, Condenser fan, Compressors).

The aim of this cooperation and INDEE+ is to demonstrate the CO₂ refrigeration technology in India for high energy

demanding sectors (supermarkets, hotels and fish processing industry), which have to cope with high ambient temperatures in India. To support the transition towards clean cooling technology, the cooperation projects enable knowledge transfer between Norwegian and Indian institutions, end-users, and vendors. This helps India to achieve the climate and environmental goals by applying such environmentally friendly and clean cooling solutions in the future. Within each R744 condensing unit sent to India, the evaporators and system configurations will be adapted and redesigned to handle the various educational approaches and local ambient temperatures. Once the design is completed, the units will be available for educational lectures and external training at the partner institutions.

The newly hired INDEE+ Ph.Ds and postdoc candidates have been assigned the design task with the support of the whole team.

Reduce refrigerant leaks in supermarkets

Refrigerant leaks are a recurring problem, particularly in the commercial refrigeration sector. An American initiative aims to identify the main causes of leaks and to propose solutions to reduce them.

Takes effect to promote the development of the AC industry in Asia

The East Asia Regional Comprehensive Economic Partnership Agreement (RCEP), where Japan, China, South Korea, and ASEAN participated, came into effect on January 1, 2022. The enormous economic circle that accounts for about 30 % of the world's total GDP has also been born. According to JARN's estimation, the AC market in East Asia in 2021 has been approximately 71.6 million units, more than half of the world's. This region is not only a large market but also a major production base in the world. The proportion of young people in the Asia-Pacific region is high, economic development is accelerating, and hot climate factors make it a huge potential market for AC demand. After experiencing the pandemic, the entry into force of the RCEP agreement will not only drive the market but will also become a good opportunity to accelerate the optimization of the regional supply chain.

Mitsubishi Electric investing in its HP factory in Scotland

Mitsubishi Electric Air Conditioning Systems Europe is investing £15.3 million (about US\$ 20.3 million) in its Livingston manufacturing facility to increase its productivity, efficiency, and research and development (R&D) capabilities to meet increasing European and UK demand for its low carbon heat pumps that tackle climate change.

Biden Admin. submits Kigali Amendment for ratification by Congress

On November 16, the Biden administration officially sent the Kigali Amendment to the Montreal Protocol to the U.S. Senate for ratification. In September, the U.S. Environmental Protection Agency (EPA) finalized a rule to phase down the production and use of HFCs by 85% over

the next 15 years, which is in line with the provisions of the Kigali Amendment. The EPA rule was mandated by the Innovation and Manufacturing Act (AIM Act), which passed with bipartisan support in 2020.

Sifa Invigorates HVAC&R Sector in Paris

Sifa, Interprofessional Exhibition of Refrigeration and its Applications, was successfully held as a face-to-face event in Paris, France, from November 16 to 18, 2021. The expo venue was bustling with about 120 exhibitors, and more than 3,700 visitors flocked to the three-day event.

Scroll compressor exports up by 33% from January to September in China

According to China IOL statistics, scroll compressors have seen their cumulative sales volume increase to 2.18 million units from January to September, 2021, indicating a 7.8% year-on-year growth rate; the cumulative domestic sales volume came to 1.68 million units, with a 2.2% year on year growth rate; and the cumulative export volume came to 492,000 units, growing by 33% year on year. Similar to air conditioner exports, China has seen strong performance in scroll compressor exports.

Transport AC is a little different from building AC

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Haier starts production in its refrigerator plant in Romania:

Haier announced that its first cooling factory in the European Union, Haier Tech Romania, has started production. The facility manufactures best-in-class refrigerators, both built-in and freestanding, for the three brands of Haier Europe – Candy, Hoover, and Haier. Haier Tech is located in the Allianso Industrial Park at Aricestii Rahtivani, near Ploiești, about 70 km from Bucharest, and started earlier this year the production of best-in-class refrigerators with a focus on connectivity, preservation, and reduced energy consumption.

Building energy efficiency drives China's smart building market:

The total energy consumption of buildings in China is constantly increasing, and it is very urgent to take stronger energy-saving and emission-reduction measures. Energy decarbonization is mainly achieved through increased building electrification (cooking, domestic hot water, heating). It is reported that the three core measures are to greatly

improve the energy efficiency of new buildings in urban and rural areas, to promote energy-saving renovation of existing buildings, and to apply building photovoltaics. For the digital intelligent building market, a rare opportunity has arisen.