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ASHRAE Developing Economies Conference Targets Healthcare, Residential, District Energy

The Third ASHRAE Developing Economies Conference, held May 10–11, 2023, in Mumbai, India, held deliberations on challenges that global south countries face meeting the climate change commitments while focusing on their growth.

Conference Chair and Society Vice President Ashish Rakheja's opening remarks described the focus of the conference. "With 10 billion homes to be built in just India alone and the need for a resilient healthcare infrastructure highlighted by recent COVID-19 experience, it is important that both developing and developed countries share their experiences to learn from each other while keeping an eye on the larger threat of climate change, which concerns all."

In the Indian tradition, an auspicious start is provided to the event by invoking the gods of wisdom. This is done either by lighting an oil lamp or chanting. At the start of the event, plants were watered in respect for mother earth. In line with the sustainability theme for the conference, the event served as a message to attendees to preserve nature in these times of climate change.

New technologies and decarbonization were at the heart of discussions at the conference, and they were echoed in the keynote address by Anirban Ghosh, Mahindra University. "New technologies will make equipment planet-friendly and, not just more efficient, but with IoT we can see improvements of 70%." He said a large number of existing systems need to be replaced with efficient equipment, which should provide a payback in 2.5 years to suit business needs. He referenced their experience during development of a net-zero residential building in India and how lessons learned will be a trigger to achieve a commercial scale in the country. "There is no extra cost to build green anymore."

Bringing new technologies to market in developing economy countries was addressed in sessions on investment opportunities and pilot programs organized by the International Finance Corporation, a subsidiary of the World Bank Group. IFC helps development of new technologies, especially cooling, and incubates them to attract private sector investment. Currently in India, there are 20 pilot programs for emerging technology companies that are supported by 13 partners. "Climate change overlaps everything we do," said David Matthews, IFC. If developing economy countries do not come on board we will not meet goals for reducing GHG emissions, he said. "It has been shown that you can grow an economy in a sustainable way and still cut emissions."

The emerging technology of district cooling systems and barriers to its implementation was debated in a panel session. The panelists talked about the India Cooling Action Plan (ICAP) and the government focus on supporting implementation of district cooling. Some barriers identified were the expensive real estate requirement for installing the plant, investment money and the need to determine the factors for right sizing of the plant given the cultural practices where households prefer restricted use of air conditioners, said Rakheja.

A leading expert opined that district cooling is best implemented when both commercial and residential buildings can be coupled as shown in recent experiences of their implementation in India at educational and healthcare campuses.

In conclusion, the panelists unanimously felt that thermal comfort must be the main criterion in developing economies rather than blindly following cooling as a requirement if the climate change goals are to be achieved, which will require a change in the mindset.

The conference was attended by over 580 delegates. ■

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Industry Roundup

DOE Launches $4 Million Effort to Modernize Wood Heating

WASHINGTON, D.C.–The U.S. Department of Energy's Bioenergy Technologies Office announced the launch of a $4 million initiative that aims to accelerate wood heater innovation and support the development of the next generation of efficient and clean wood heaters. The DOE notes that approximately 11 million U.S. homes currently use cordwood or wood pellets for spacing heating. At least $4 million will be made available for the competitively selected CRADA call, and up to four projects will be selected to participate in the initiative, with a project duration of 12 to 18 months.

Source: Biomass Magazine

Demand Surges for Giant Heat Pumps as Europe Turns to District Heating

EUROPE–As climate and energy security concerns accelerate the shift away from fossil fuels, the demand for "giant" commercial heat pumps is surging across Europe. Thousands of times more powerful than their domestic kin, the mammoth commercial devices are increasingly on the radar of municipalities looking to end their dependence on fossil fuels, reports the British Broadcasting Corporation. A German firm has developed a 48-megawatt heat pump that exemplifies the immense scales on offer. Using a Montreal Protocol-compliant carbon dioxide refrigerant, the device can generate temperatures up to 150°C and is ideal for district heating systems, where one centralized energy source distributes heat to multiple buildings or structures.

Source: The Energy Mix

The Quest for the Smoke-Proof Building

NEW YORK CITY, N.Y.–Efforts to improve indoor air quality (IAQ) have taken on fresh urgency as more cities experience intense polluion from climate change-fueled wildfires. The still-burning fires, fueled by drought and high temperatures across Canada, also provided a stark new illustration of the importance of IAQ—an issue that rose to prominence during the COVID-19 pandemic amid new research on the poor quality of many indoor environments. The Centers for Disease Control has issued a new health-based standard for indoor clean air, while ASHRAE has in the past released a guideline for emergency air quality events. The full article discusses the impact of the fires on IAQ, occupant health and resiliency in the built environment.

Source: Bloomberg

Singapore Heats Up Data Centers With Operating Standards for Tropical Climates

SINGAPORE–Singapore has released operating standards that will optimize energy efficiency in data centers located in tropical climates. Developed by the Infocomm Media Development Authority (IMDA), the recommended standards offer a roadmap to increase data center operating temperatures to 26°C and above. These standards can potentially yield energy savings of between 2% and 5% for every 1°C increase in such environments, the government agency said.

Source: ZDNET

ASHRAE JOURNAL Podcast

Rachel Romero, P.E., Member ASHRAE; Theresa Weston, Ph.D., Member ASHRAE; and Philip W. Fairey, Life Member ASHRAE, discuss how Standard 90.2 will be the first building standard in the country to have a carbon rating requirement; crossover with indoor environmental quality and Standard 62.2; and ASHRAE's contributions to the residential space.

Scan the QR code or visit https://ashrae.org/podcast