



Photo left: Representatives of Manik Engineers in Pune, India, show the company's electronic control systems for ammonia refrigeration. Photo right: Visitors to the LG stand watch a presentation in 3-D on the company's VRF products showing their incorporation into new high-rise offices dotting India's urban centers. Photo below: Enrico Chiabrera describes Italian firm P3's preinsulated panels. "They promote healthy environments, are easy to install, and their manufacture helps reduce the carbon footprint," he says.

## India Shows Green Growth

### *ACREX 2013 Emphasizes Commitment to Sustainability*

MUMBAI, India—While analysts predict global demand for HVAC equipment will rise 6.2% this year and next, they say India's will range from 14% to 20%—for each of the next five years. Increased disposable income, constant flow of foreign investment and technology innovation will drive purchasing, say the experts. And whether the sector is retail, hospitality, health care, pharmaceutical, IT, transportation, commercial, or residential, the story is the same: growth. According to the Indian government, there is a need for more than 26 million homes in India. Add to those projections that India's population will increase from its current 1.2 billion to 1.6 billion by 2050, and you begin to appreciate the market potential.

Projections for growth in the cold chain industry parallel those for HVAC. While annual growth is forecasted at 2% to 3% in the rest of world, India should experience 25%. More than 50% of India's work force is directly involved in growing food, and the country ranks as the second largest producer of fruit and vegetables in the world.

With this backdrop, the aisles of the 14th edition of ACREX India 2013, a trade fair for air-conditioning, refrigeration and building services, were jammed with about 40,000 visitors. The show, held here March 7–9, included more than 1,000 companies, domestic and global.

The phrase most often seen in company literature and stand signs at ACREX was "eco-friendly." India is a country acutely

aware of the need to not waste resources on inefficient systems. The market for green buildings is exploding, reaching an estimated value of \$50 billion by 2015. The India Green Building Council says it has more than one billion square feet of green building footprint with more than 1,500 registered buildings. Proponents of green building design cite the long history of construction in India that relied upon natural resources for the sustainable operation of buildings.

The temples of Rajasthan employ water harvesting, and natural lighting is a common feature in the royal palaces. The reasoning is simple. India relies on imports for its fossil fuel. The government recognizes that if new construction is not environmentally sensitive, the economic impact of fuel costs, pressure on water resources, and degradation of air quality will be overwhelming for a country focused on raising the standard of living.

Examples of products to address these needs were abundant on the show floor.

ZECO Aircon's booth included news articles about the millions of Indians who have died because of poor indoor air quality. Siddharth Jain, director of marketing for PureAir by ZECO, explained that the PureAir system sends ionized oxidizers into rooms for countering pollutants

at the source. The system uses hydroperoxides.

"Just a few years ago, very few people demanded filtered water. Now, it is common. No one drinks unpurified water. The same is becoming true for air," Jain said.

The company exhibited the PureAir Plug In Air Purification System for residential applications. It can be used in any room, even if there is no air conditioning.

LG featured one of the largest stands at ACREX 2013. Included



was a 3-D display of its VRF unit, Multi V-IV combination heating and cooling unit, viewable with special glasses. The Multi V-IV offers a 4.78 COP for cooling and a 5.2 COP for heating, according to M.P. Agarwal, LG Electronics' vice president-system air conditioners.

"We have found that everybody here is

concerned about saving energy and selecting an eco-friendly system," said Agarwal.

The P3ductal panel offered by P3 Pre-insulated Panels Systems has a sandwich design made up of an insulating core in rigid polyurethane foam covering on both sides with an 80 µm sheet of embossed aluminum. Enrico Chiabrera, sales ex-

ecutive of P3, said the global warming potential of the panel is zero through the use of water in the expansion process of the polyurethane foam. Chiabrera said the ACREX attendees have expressed much interest in the panels, especially after it won an ACREX award of excellence in the indoor air quality category. P3 is exploring an introduction of the panels into the North American marketplace.

Port-A-Cool exhibited its portable evaporative cooling units, available in sizes of 16 in. (0.4 m) to 48 in. (1.2 m) and the new Hurricane unit, announced at AHR Expo in Dallas. Robert J. Mangiaforte, director of international sales, said the Hurricane cools up to 3,500 ft<sup>2</sup> (325 m<sup>2</sup>) and reduces the temperature by 30°F (17°C). The HURRICANE 3600 has a digital control panel, 67 gallon (254 L) water capacity and 14,500 cfm (24,635 m<sup>3</sup>/h) airflow. Mangiaforte said he also was interested in developing new sales channels for a growing India marketplace.

"I am looking for potential Port-A-Cool distributors for India," Mangiaforte said. "I think having a local distributor will help us in this growing market."

Among Indian companies exhibiting was Spirotech, manufacturer of fin and tube type cooling and condensing coils, that exports 75% of its products to the U.S.

"One of our biggest strengths is a new highly integrated state-of-the-art manufacturing facility located close to New Delhi," said Rajeshwar Malhotra, managing director. "We have a capacity for producing over one and a half million coils per year and the plant also offers the advantage of scalability, handling small lots as well as large consignments with equal ease. The coils we produce there are UL Certified for safety and are leak tested, dehydrated, pressure charged, and ready to use, saving production time and costs." Spirotech only uses eco-friendly evaporative lubricants, which are compatible with modern CFC-free refrigerants.

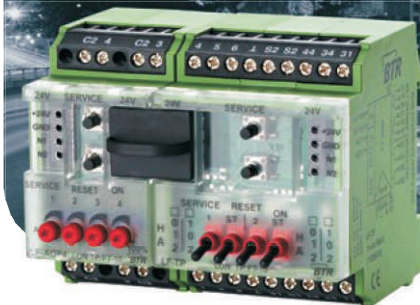
Manik Engineers India manufactures controls equipment for ammonia refrigeration and is a major OEM supplier in India for such multinational companies as York, Grasso, Frick and Voltas.

"We have been in the business for 34 years," said the company's Anand Joshi.



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## INDUSTRY NEWS

"We export to Asia and to the Middle East and we also are a major supplier to the OEM market in India, companies like Frick and Grasso." Joshi says his company's success is based on quality and cost. "Our prices are 35% to 40% lower compared to some competitors because we own the manufacturing processes that create our products. And we offer our backup support for service and engineering."

The company exhibited new electronic control systems with mobile applications.

Bry-Air exhibited dehumidifiers for humidity control and media for removing gas phase contamination to eliminate corrosive and toxic gases in industrial and commercial environments. Its BrySorb media combines activated carbon and activated alumina impregnated with proprietary chemicals that destroy gaseous contaminants like  $H_2S$ ,  $SO_2$ ,  $Cl_2$ , and  $NH_3$ . At ACREX, company representatives drew attention to a new purifier, which serves the data center market. Bry-Air dehumidifiers are used in all industries. Bry-Air supplied 13 dehumidifiers to Don Bosco Center for Indigenous Cultures in Shillong, India, where they are helping to preserve the paintings, handicrafts, costumes, musical instruments and statues important to Indian culture. Along with India, Bry-Air has manufacturing plants in China, Malaysia, Germany, Switzerland, the U.S. and Brazil.

SAGICOFIM is an Italian company specializing in the HVAC sector, with main focus on air filtration. The company was present at ACREX exhibition in Mumbai as an air filter supplier to the Indian Market. SAGICOFIM plays a major role in the most critical industrial sectors, such as pharmaceutical, microelectronic, food and beverage and health care. All the absolute filters are produced and packaged in a cleanroom and tested according to the EN 1822 standard. Besides quality and reliability, energy savings is one of the goals the company is focused on providing. A range of low-pressure drop filters is available to support the customers in reducing both their HVAC energy cost and  $CO_2$  emission.

Supreme showed its INSU range of products used for thermal and acoustic insulation. Among them is Insuboard, a closed cell rigid extruded polystyrene board that was named grand-prize winner of the ACREX Awards in the green and eco-friendly category. The continuous skin surface makes it impervious to moisture absorption under varying ambient temperature conditions. The closed cell structure and uniform surfaces combined with its light weight support critical floor applications. The low thermal conductivity of the product offers energy savings, comfort for building occupants, and durability. The company also offers INSUshield, FR, closed cell, chemically crosslinked polyethylene foam or thermal insulation; INSUreflector, radiant heat reflective insulation; INSUflex, FR, elastomeric Nitrile foam tubing for pipe insulation; and INSUmelfoam, Melamine foam for acoustic insulation.

DRI exhibited fresh air ventilation and green building products to help maintain IAQ requirements and recover energy from exhaust air, resulting in reduction in installed tonnage and utility bills. They also assist in enhancing IAQ, maintaining desired temperature and humidity and increasing productivity.

The next ACREX takes place in Delhi, March 1–3, 2014. ■

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