

HMX's Approach for Thoughtful Sustainable Cooling Solutions

Introduction: As India undergoes a period of rapid urbanization and massive infrastructure expansion — from industrial corridors to new metro networks — the demand for energy-intensive cooling is skyrocketing. However, the path to Net Zero requires a shift away from traditional, high-energy consumption methods. In the interaction with Supriya Oundhakar, **Abhijit Kulkarni – President, HMX Sales and Marketing** shares how indirect-direct evaporative cooling is emerging as a sustainable powerhouse. By focusing on the intersection of human health by proving better indoor air quality (IAQ), coupled with energy savings of up to 60%, HMX is positioning its “Made in India” solutions as the future for climate control for both the people and the planet.



Q: India has set an ambitious target for Net Zero by 2070. Since the HVAC sector is one of the most energy-intensive, how are you aligning your products to help achieve that goal?

A: India's growth is happening very rapidly through urbanization, metros, and industrial corridors, which means we are consuming far more energy than ever before. To fuel this growth sustainably, we must move toward low-energy solutions. HMX indirect-direct evaporative cooling systems, can save up to 60% in energy costs compared to traditional air conditioning systems for comfort cooling applications. This provides a very strong leverage for the industry to reach Net Zero targets while supporting rapid infrastructure development.

Q: Data center is a booming sector. Do you have specific products planned for this market?

A: Our current focus spans commercial spaces, industrial corridors, and retail environment. HMX cooling solutions prioritize four key aspects: better indoor air quality (IAQ), human comfort, enhanced productivity, and reduced electricity consumption. In data centers, the requirement for high level fresh air isn't as critical as it is for human health and comfort. That said, we are actively engaging with stakeholders and industry leaders in the data center domain to evaluate how HMX technologies can be adapted to meet their specific sustainability and efficiency needs. We see strong potential and look forward to introducing appropriate solutions in the near future.

Q: Do you face any regulatory, financial, or technical challenges in manufacturing these sustainable solutions?

A: We don't face regulatory issues; however, the biggest challenge lies in creating awareness in the industry. While this technology is well-established and scientifically proven, it is not an “off-the-shelf” solution. It requires teamwork across multiple stakeholders - from understanding the cooling space layout, heat load, and designing the correct solutions from our team followed by right execution and maintenance. Ensuring the industry

understands and experiences that this is a highly workable, sustainable and better alternative compared to existing traditional cooling solutions is our prime focus.

Q: With ‘Make in India’ initiative, are you manufacturing your products locally?

A: Yes, we are almost 100% localized. While we may have to import a few critical components based on customer's specifications, all our products are assembled and manufactured at our facility in Ahmedabad, Gujarat. This localization strengthens supply-chain resilience and aligns closely with the Government of India's *Make in India* vision.

Q: How do currency volatility and geopolitical tensions affect your business?

A: We are somewhat shielded because of our high level of localization. However, we do face challenges from geopolitical uncertainty, which causes supply chain restrictions and delays in shipments. Additionally, fluctuations in oil prices can affect the cost of certain materials and transportation costs. While these create temporary blips, our localized manufacturing base helps us manage these risks effectively.

Q: AI is an emerging force. Have you incorporated these technological advancements into your products?

A: We have launched two significant digital tools. First is our online intelligent product configurator, ‘HMX calX.’ It uses our database of past projects to allow us to analyze customer or project inputs and arrive at calculated proposed machine specifications with speed and accuracy.

Second, we have integrated IoT into our products for predictive maintenance and operational efficiency. By analyzing common faults from past data and our experience whether due to age, use, or environment - the software monitors the health of the machine. It alerts users in advance for troubleshooting to reduce the downtime and improve the total life cycle cost.

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Q: What is your outlook for the HVAC and cooling market for FY 2026-27?

A: We expect double-digit growth in the market to continue. As COVID-19 taught us, IAQ is vital for human comfort, health, and wellbeing. Our HMX indirect-direct evaporative cooling systems maintain 100% fresh air, higher oxygen levels, ensure human comfort, and boosts productivity. We are seeing a massive surge in inquiries from every sector (Industrial, commercial and retail)

Q: Are you looking beyond the Indian market?

A: Absolutely. We are already exporting to 12 plus countries with 120 million CFM installed across the globe, 24 million sq. feet area cooled with 550 plus happy customers worldwide using our sustainable cooling solutions. While the Middle East is currently experiencing some geopolitical disruptions, it remains one of the biggest markets for us. With global temperatures rising, the demand for sustainable, high-efficiency cooling will only continue to grow in the coming years. ❁

Sustainable Cooling: Paharpur's Decarbonization Roadmap

Introduction: As industrial growth accelerates, **Kanad Banerjee, Business Head, Special Products, Paharpur Cooling Towers** highlights the urgent shift toward water-efficient technologies. By leveraging adiabatic systems and IoT-driven predictive maintenance, the company is slashing water demand by up to 90%, providing a high-performance, sustainable cooling blueprint for India's Net Zero future.



Q: Cooling infrastructure plays a crucial role in industrial operations. How do you see sustainable cooling technologies contributing to global decarbonization efforts?

Cooling is an extremely important contributor to the overall industrial energy consumption. As industries and urban infrastructure expand, cooling demand is growing rapidly across different sectors such as manufacturing, data centers, power generation, and commercial HVAC.

Sustainable cooling technologies play a critical role in global decarbonization because they help to reduce both energy consumption and water usage, which directly lowers the carbon footprint of industrial operations. High-efficiency heat rejection systems, hybrid cooling technologies, and intelligent system controls enable industries to achieve the required thermal performance while consuming significantly less energy and water. As a result, cooling technologies are becoming an important lever in helping industries transition toward lower-carbon and more resource-efficient operations.

Q: With countries like India committing to long-term climate targets, what role can efficient cooling systems play in supporting these ambitions?

A: Efficient cooling systems will be central to achieving long-term climate goals. In India, cooling demand is expected to grow significantly over the next few years, due

to rapid urbanization, industrialization, and rising living standards.

If this demand is met using conventional technologies, it will place enormous pressure on the power grid and increase emissions. However, by adopting high-efficiency cooling solutions such as advanced adiabatic coolers, hybrid dry-wet technologies, and smart monitoring systems, we can substantially reduce electricity consumption and the water usage.

By improving cooling efficiency across industries, India can significantly reduce peak electricity demand and lower its carbon footprint, making cooling infrastructure an important part of the country's energy transition and climate strategy. The innovative adiabatic cooling technologies help in reducing the net annual water demand by 80-90% and therefore, help in making a step forward to a more sustainable future.

Q: Water scarcity is becoming a major concern for industries. How is Paharpur Cooling Towers Ltd. innovating to reduce water consumption in cooling processes?

A: At Paharpur Cooling Towers, we have been actively developing technologies that significantly reduce water dependency without compromising the thermal performance.

Our innovations include adiabatic cooling systems, closed-circuit fluid coolers, and hybrid cooling solutions