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SMARTER, ENERGY-EFFICIENT

ABB's AR Madhusudan on powering India's next-gen infrastructure with intelligent, energy-efficient HVAC solutions

With India's infrastructure rapidly expanding across sectors such as data centers, airports, and healthcare, the demand for energy-efficient HVAC systems is increasing. At ACREX India 2026, AR Madhusudan, Business Line Manager – Drive Products, ABB India, shares how ABB's drives, automation solutions and high-efficiency motors are enabling smarter, more efficient cooling for modern buildings.

AR Madhusudan

India is witnessing rapid infrastructure growth across sectors such as data centers, airports, healthcare facilities, and high-performance buildings. What are the key factors driving the expansion of the HVAC industry in India today?

Investments in several emerging sectors are growing much faster than traditional industries. While ABB has historically focused on heavy industries, we are now seeing strong expansion in areas such as data centers, semiconductors, and solar manufacturing. Across these segments, the demand for efficient and reliable cooling systems is rising sharply. Whether it involves chilled water systems, cold water circulation, or air-conditioning, these facilities require precise and energy-efficient HVAC operations. Data centers, in particular, are expanding at an exponential pace, which is creating significant demand for advanced cooling technologies. ABB supports this growth through its drives, automation and motor solutions. We primarily work with OEMs and collaborate with key industry players to introduce more advanced technologies. In addition to data centers, sectors such as hospitals and infrastructure are also expanding rapidly, increasing the need for reliable HVAC solutions.

How is ABB enabling smarter and more energy-efficient buildings through its automation and drive technologies?

Drives are essential for improving process efficiency and productivity. In HVAC systems today, the main focus is reducing energy consumption while maintaining reliable performance.

For example, data centers require compact and highly efficient drives. ABB has introduced wall-mounted drives that can be installed directly on chillers, eliminating the need for separate control panels. These drives are available from 250 kW to 355 kW and simplify installation while improving performance.

We also offer ultra-low harmonic drives that reduce electrical disturbances at the source. These drives ensure motors receive the required voltage and output power without compromising system efficiency. ABB has been among the early innovators in introducing such solutions to the HVAC industry.

How can HVAC systems become more energy efficient through application-specific drives?

HVAC is a focused market segment for ABB, and we have developed a dedicated portfolio of drives for it. Our ACH series addresses different performance and efficiency needs. The ACH180 is an entry-level drive that offers advanced features such as built-in EMC filters and integrated functionality. For more demanding applications, the ACH580 is a premium solution with application-specific macros and built-in filters.

We also provide ultra-low harmonic (ULH) drives such as the AC580-31 series, which can reduce harmonic distortion to just 3% at the source.

Beyond drives, ABB offers automation solutions that further enhance efficiency. These include PLC-based chiller management systems and energy management systems for data centers and other facilities. Together, these technologies help optimize HVAC operations and reduce energy consumption.

What roles do ultra-low harmonic drives play in improving power quality in modern buildings?

Harmonics occur when drives switch and modulate their output power, creating disturbances in the electrical network. In conventional drives, harmonic levels can reach around 30–35%.

While this may be acceptable in some industries, facilities such as data centers, hospitals, and airports require much lower harmonic distortion because the equipment used there is highly sensitive.

Ultra-low harmonic drives address this issue by reducing harmonics directly at the source. Instead of installing additional external filters – which increase complexity and energy losses – these drives integrate harmonic mitigation within the system. This approach improves power quality, reduces energy waste, and creates a more compact solution. It also supports sustainability by improving overall system efficiency.

What makes ABB's HVAC solutions particularly relevant for India's expanding infrastructure ecosystem?

ABB offers a broad portfolio designed to serve multiple market segments. For example, the ACH531 drive provides essential HVAC features at a competitive price, while the ACH580 caters to premium requirements with advanced capabilities. On the automation side, ABB offers the AC500 PLC platform for high-end applications, as well as AC300 and CP300 PLCs and HMIs for entry-level systems. This allows us to address requirements ranging from basic energy-saving systems to advanced infrastructure projects.

We also work with more than 100 partners across India who specialize in HVAC applications. These partners support retrofit projects and energy efficiency upgrades, including replacing motors with higher-efficiency models such as moving from IE3 to IE5.

Recently, we completed a project in Andhra Pradesh where a chiller system was upgraded using ultra-low harmonic drives, high-efficiency motors, and an integrated PLC platform – delivering a complete ecosystem solution.

What are the key highlights of ABB's booth at ACREX India 2026?

At ACREX India 2026, we are showcasing high-efficiency motors, including ABB's Baldor-Reliance direct drive cooling tower motors that eliminate the need for gearboxes, reducing maintenance, improving efficiency, and enhancing overall system reliability. Our display also includes permanent magnet motors and exterior rotor motors.

We are also presenting packaged drive solutions called PDR (Packaged Drive), which integrates fuses, switches, protection systems, displays, and communication interfaces – eliminating the need for separate panel building.

Another highlight is our solar-powered solution that allows compressors used in chillers to run using energy from solar panels. We are also displaying IP55-rated drives designed for outdoor installations such as rooftops.

WATCH: https://bit.ly/abb-acrex26

SWELECT Energy's 2026 outlook

On the sidelines of The Smarter E India 2026 in Gandhinagar, Gujarat, SWELECT Energy Systems outlined its strategic transformation following a major rebranding, while detailing its growth outlook for 2026 and beyond. With a legacy of over four decades, is repositioning itself to align with changing customer expectations and the rapidly evolving dynamics of India's solar energy market.

Speaking to mojo4industry, Vikash Kumar Upadhyay, Vice President – Sales, said the rebranding reflects a deeper shift toward accountability. While the company has long been known for delivering renewable energy solutions, customers today are increasingly looking for partners who take ownership not just of delivery but also of long-term performance and service. Reflecting this shift, the company has adopted the new tagline "Powering The World Responsibly," signaling a broader commitment to sustainable and accountable growth.

Elaborating on what differentiates the company in a crowded market, he pointed to a combination of financial and technical expertise, strong manufacturing capabilities, and a legacy of long-term partnerships. The company supports clients across the project lifecycle, including feasibility assessment, design optimization, storage integration, and financial evaluation such as IRR calculations. Its in-house manufacturing ecosystem, covering modules as well as key electrical components, allows it to maintain quality control and offer integrated solutions. At the same time, its long-standing presence and public listing history reinforce its credibility as a dependable partner for long-term projects.

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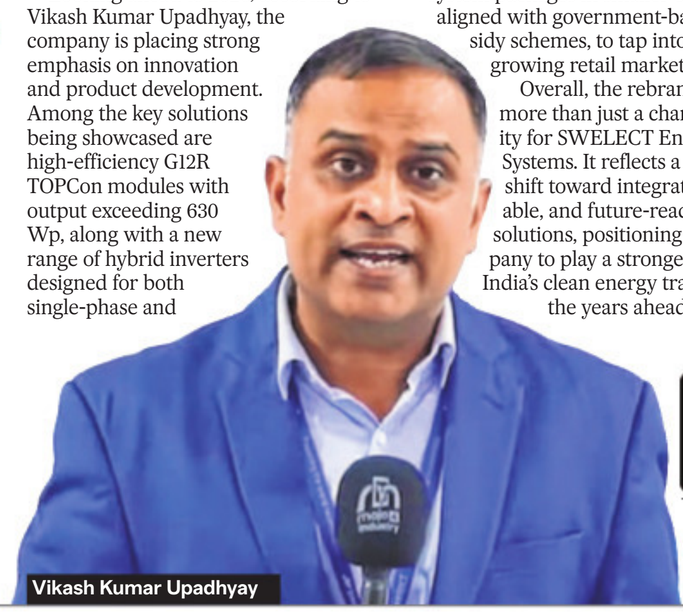
On the demand side, the company is witnessing a clear shift across segments. In the commercial and industrial space, there is growing interest in solutions such as peak load shifting and energy storage. Utility-scale projects are also gaining traction, particularly in the form of round-the-clock and firm renewable energy models. Meanwhile, the residential segment is emerging as a key growth driver, supported by policy initiatives like PM Surya Ghar Yojana, which are accelerating rooftop solar adoption across the country.

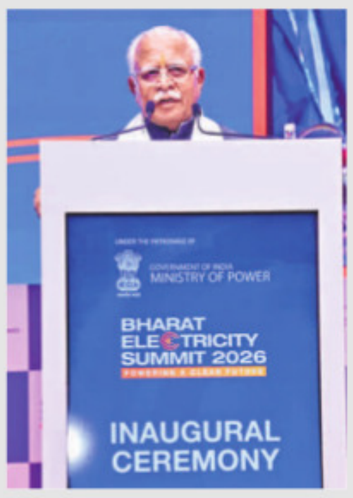
Looking ahead to 2026, according to Vikash Kumar Upadhyay, the company is placing strong emphasis on innovation and product development. Among the key solutions being showcased are high-efficiency G12R TOPCon modules with output exceeding 630 Wp, along with a new range of hybrid inverters designed for both single-phase and three-phase applications. The company is also expanding its energy storage offerings to cater to residential as well as commercial and industrial users. In addition, it is rolling out rooftop solar system packages in smaller capacities, aligned with government-backed subsidy schemes, to tap into the fast-growing retail market.

Overall, the rebranding marks more than just a change in identity for SWELECT Energy Systems. It reflects a strategic shift toward integrated, accountable, and future-ready energy solutions, positioning the company to play a stronger role in India's clean energy transition in the years ahead.


Vikash Kumar Upadhyay

WATCH: https://bit.ly/swelect-m4i

Power Minister inaugurates Bharat Electricity Summit



Union Minister of Power and Housing & Urban Affairs Manohar Lal Khattar inaugurated 'Bharat Electricity Summit 2026', a four-day global Conference-cum-Exhibition for the power sector, being held under the patronage of Ministry of Power from 19-22 March 2026 at Yashobhoomi, New Delhi. Pralhad Joshi, Minister of New and Renewable Energy and Consumer Affairs, Food and Public Distribution; Shripad Naik, Minister of State for Power and New & Renewable Energy; Pankaj Agarwal, Secretary, Ministry of Power; Ghanshyam Prasad, Chairperson, Central Electricity Authority (CEA) were also present during inauguration.

While hailing achievements such as achieving its Nationally Determined Contribution (NDC) target of 50% cumulative non-fossil electric capacity nearly five years ahead of schedule, the SHANTI Act 2025, PM Surya Ghar Muft Bijli Yojana, transition from power deficit to a power surplus nation, exponential growth in solar energy capacity from 2.8 GW solar capacity to over 143 GW today, Power Minister Manohar Lal Khattar underscored the unprecedented investment opportunities of approx. Rs. 200 lakh crore over the next two decades in India's power sector. In his keynote address, the Minister also highlighted India's remarkable progress with a 72% expansion in transmission infrastructure to over 5 lakh circuit kilometers, meeting 250 GW peak demand in 2024-25 and being fully prepared to meet peak demand of 270 GW and beyond, while positioning itself as a future global exporter of affordable energy as the backbone of India's vision to become a developed nation by 2047, he also outlined initiatives such as cross-border energy connectivity, undersea transmission networks.

He further added, "Today is not just another day, it is a day of resolve for India's energy transformation. From relying on conventional resources to now returning to the power of the sun, we are completing a full circle. Energy is at the heart of development, and as India moves towards becoming a developed nation by 2047, our focus is on innovation, affordability, and global collaboration. This 'Conference of Light' is not just an event, but a movement to take India's energy leadership to the world."

READ: https://bit.ly/BES26-M4I

MNRE Minister Pralhad Joshi emphasized that while thermal power will continue to serve as the backbone of the energy system, renewable energy represents the only sustainable long-term pathway, underscoring the need for a balanced transition driven by scale, speed, and skill.

Complementing this vision, Minister of State for Power and New & Renewable Energy Shripad Naik highlighted that India's installed power capacity has more than doubled since 2014, with renewable energy witnessing exponential growth, from 2.8 GW solar capacity to over 143 GW today. He emphasized that over 32 lakh households and 23 lakh farmers are already contributing to clean energy generation, reflecting a shift towards a participative energy economy.

Adding to this, Power Secretary Pankaj Agarwal stated that India now operates one of the world's largest synchronised grids, supported by advanced balancing systems, large-scale smart meter deployment and strong policy frameworks.

He further added, "India's power sector transformation over the past decade offers a strong global model, driven by policy clarity, scale, and innovation. From near-zero peak deficits to one of the world's largest synchronized grids, and from falling solar tariffs to smart infrastructure rollout, we are building a system that is efficient, reliable, and investment-ready. The next phase will be defined by technology, data, and global partnerships."

During the inaugural session, the Ministry of Power released key strategic reports including the National Resource Adequacy Plan, outlining a comprehensive roadmap to meet India's growing electricity demand through a balanced energy mix, and the Transmission Plan for Integration of over 900 GW Non-Fossil Fuel Capacity by 2035-36. The transmission blueprint envisages the development of 1,37,500 circuit kilometers of transmission lines and 8,27,600 MVA substation capacity, with an estimated investment of ₹7.93 lakh crore, ensuring seamless evacuation of renewable energy and strengthening grid resilience.

The Bharat Electricity Summit 2026 is a Ministry of Power and industry-led initiative. The summit will host more than 100 high-level conference sessions featuring over 300 speakers, representatives from more than 80 countries, over 500 exhibitors including over 100 startups and more than 25,000 visitors, making it one of the largest electricity-focused platforms globally.

DhaSh PV's solar innovation strategy for 2026

At the Smarter E India Exhibition held in Gandhinagar, Gujarat, DhaSh PV Technologies Limited unveiled its roadmap for 2026, highlighting a strong focus on innovation, backward integration, and global expansion in the solar component manufacturing sector. In an exclusive interaction with mojo4industry, Founder and Managing Director Manjunath Reddy outlined the company's journey since its inception in 2017. Established with a vision to manufacture photovoltaic junction boxes, DhaSh PV has evolved into a comprehensive solutions provider, offering design, development, and manufacturing services aimed at delivering high-quality, cost-competitive products.

Reddy emphasized that the company was among the first in India to manufacture products compliant with both IEC and US Standards. Today, its portfolio includes advanced offerings such as 35-ampere junction boxes and 2000-volt DC junction boxes and connectors – products aligned with next-generation solar module requirements. A key milestone for the company has been scaling its manufacturing capacity to 63 gigawatts, enabling it to cater to a significant portion of domestic demand. Looking ahead, DhaSh PV aims to become a billion-dollar enterprise in the renewable energy component space while strengthening its presence in global markets.

WATCH: https://bit.ly/DhaShPV

Speaking on the company's technological edge, Anamitra Ganguly, Sr. Manager Technology & Innovation highlighted DhaSh PV's continuous investment in backward integration. The company has developed in-house capabilities across injection molding, DC cable manufacturing, and critical component production for junction boxes—an approach that differentiates it from competitors.


Anamitra Ganguly


Manjunath Reddy

DhaSh PV has also expanded its innovation pipeline with products such as composite frames for solar PV modules, designed specifically for harsh environments like coastal and saline regions. Additionally, the company has ventured into manufacturing solar PV ribbons and interconnect busbars, further enhancing value for module manufacturers.

Safety and reliability remain central to DhaSh PV's strategy. The company maintains a fully in-house design and development process, ensuring stringent quality control. Special emphasis is placed on minimizing contact resistance in junction boxes and connectors, thereby reducing power losses in solar modules.

With compliance across key global standards and a structured focus on innovation and quality, the company is positioning itself as a significant contributor to India's growing solar infrastructure and a competitive player in international markets.

Ganguly noted that material selection, particularly engineering plastics, plays a critical role in ensuring durability under varying environmental and electrical conditions. He added that DhaSh PV stands out as the only Indian manufacturer with dual IEC and UL certification for its products, supported by extended testing protocols for long-term performance.

As part of its future-ready approach, DhaSh PV is aligning its solutions with emerging high-voltage requirements, including 2000-volt DC systems. With compliance across key global standards and a structured focus on innovation and quality, the company is positioning itself as a significant contributor to India's growing solar infrastructure and a competitive player in international markets.

With its 2026 strategy centered on scale, technology, and global reach, DhaSh PV Technologies is poised to play a pivotal role in advancing reliable and efficient solar energy solutions.

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