

Growth Opportunities: Equipment manufacturers' views

The power equipment industry is witnessing accelerated growth, driven by the rapid scale-up of renewables, grid modernisation efforts and a stronger focus on sustainability. Demand for high-capacity transmission lines, digital substations and advanced technologies is reshaping the sector's priorities towards efficiency and resilience. At the same time, challenges around clearances, supply chains and renewable integration remain. Against this backdrop, industry leaders share their views on the key growth drivers and emerging opportunities in the sector...



Manish Agrawal

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What is your assessment of the current state of the power sector?

Manish Agrawal

India's power sector reflects an integrated journey from generation to distribution, with each link playing a critical role in delivering reliable electricity to end-consumers. On the generation side, the addition of multiple sources from conventional thermal and hydro to rapidly expanding solar, wind and nuclear power, is enhancing diversity but also placing greater demands on the grid. Strengthening transmission and distribution (T&D) networks, enhancing capacity and ampacity, and reducing losses are key to unlocking greater efficiency, while automation and debottlenecking help ensure dynamic grid management.

Speaking of the current state of the sector, driven by landmark achievements that have reshaped it, India's power sector is now at a crucial turning point, ready for the next stage of growth, expansion and modernisation.

What are the biggest unresolved challenges for the sector?

Manish Agrawal

While the sector has made remarkable progress, particularly in the T&D segment, the development of transmission lines and substations continues to fall short of planned targets. During 2017-22, only 81 per cent of planned

transmission line additions and 91 per cent of planned substation capacity additions were achieved. This shortfall has largely continued in recent years highlighting a persistent challenge in infrastructure expansion. In recent fiscal years, substation capacity additions achieved 96 per cent, 91 per cent and 7 per cent of the targets in FY 2023, FY 2024 and FY 2025 respectively. Transmission line additions followed a similar trend, achieving 100 per cent, 8 per cent and 58 per cent of the targets over the same period. The lag is typically attributed to delays in commissioning, land acquisition challenges, right-of-way issues, material supply constraints, and other operational issues. India has been driving notable momentum in energy transition; however, these lags underline a critical challenge – without matching transmission and substation growth, India risks bottlenecks in evacuating new capacity, particularly renewable power, and ensuring reliable, affordable and sustainable power at scale.

Discoms add another layer of strain. While Uttar Pradesh is often cited as an example of a state that has reduced transmission losses to just 3.2 per cent, many discoms across the country remain financially weak, burdened by cross-subsidies and delayed payments. At the same time, storage and flexibility remain key concerns. While the government has approved a 30 GWh battery energy storage scheme and launched initiatives to promote pumped hydro storage projects, this segment is still in its early stages of development.

Despite these challenges, India's power sector has achieved remarkable progress and stands well-positioned for the future. Addressing gaps in transmission capacity, accelerating storage solutions and restoring the financial sustainability of discoms will be critical to unlocking the next phase of growth and ensuring that the energy transition delivers reliable, affordable and clean power to all.

What is your policy wish list for the government?

Manish Agrawal

Aligned with APAR's commitment to delivering reliable and sustainable power for all, our policy recommendations focus on strengthening the industry and enhancing India's global competitiveness.

Capitalising on existing transmission lines via reconductoring: Capitalising on current transmission lines and leveraging the existing infrastructure through reconductoring with high ampacity and low-loss solutions can result in significant time and space savings, while enabling the faster integration of renewable energy into the grid. While the Central Electricity Authority (CEA) and Power Grid Corporation of India Limited are actively promoting and implementing reconductoring to enhance grid capacity, with the CEA publishing a base paper on the reconductoring of transmission lines in the interstate transmission system, there remains a need to formalise a national reconductoring plan to systematically boost efficiency and support renewable

integration across the network. With states adding large greenfield capacities, policy ensuring the optimal use of existing transmission corridors is vital to optimise resources, reduce environmental impact and speed up project execution. Such an approach would also help diminish the impact or rule out persistent RoW challenges.

Enhanced thrust on reconductoring and T&D projects under the Power System Development Fund (PSDF): The PSDF, managed by the Central Electricity Regulatory Commission, is a critical instrument for strengthening India's power infrastructure. It is imperative that the PSDF corpus is regularly replenished and progressively expanded to create a growing pool of resources for priority projects. A robust and expanding fund would accelerate initiatives such as reconductoring and broader T&D projects, improving grid reliability and facilitating the integration of increasing renewable capacity.

Fast-tracking free trade agreements (FTAs): While the Indian government has been actively advancing its trade agenda and recently concluded the UK FT, building on this momentum with similar deals with the EU and South America could further enhance market access and boost conductor industry competitiveness.

Enhancing export competitiveness through RoDTEP: While the Remission of Duties and Taxes on Exported Products (RoDTEP) scheme provides valuable support to exporters, the current rates are insufficient to fully offset the embedded taxes in India's value chain. Strengthening the scheme would help Indian conductor and cable manufacturers remain globally competitive, safeguard market share and boost export potential.

Strengthening Make in India and nation-building initiatives by enhancing the minimum local content: High temperature low sag (HTLS) conductor manufacturing is a highly specialised, technology-intensive process involving advanced materials and precision engineering. To support the Make in India initiative and contribute to nation-building, a focused and time-bound approach is recommended to enhance the minimum volume of local raw materials and components in the production of HTLS conductors.

Policy support for Indian producers and exporters: Supportive policies for downstream aluminium products such as conductors and cables is essential to offset cost disadvantages, ensure a level playing field and enhance competitiveness. Measures such as tax incentives, value added tax refunds and the creation of an Indian metal exchange can help provide cost-efficient access to aluminium. Currently, Chinese producers benefit from Shanghai Future Exchange prices, while Indian manufacturers rely on costlier London Metal Exchange rates with regional premiums, raising input costs.

Encouraging research and development (R&D) and technology adoption: There is a need to support R&D, and promote the adoption of advanced technologies.

through incentives to enhance indigenous product quality and global competitiveness.

What will be the key areas of opportunity over the next one to two years?

Manish Agrawal

The global push towards net zero, coupled with rising peak power demand, driving an urgent need to integrate renewable energy sources into the grid while upgrading and modernising existing overhead T&D infrastructure. These shifts are creating a strong demand for advanced transmission solutions capable of handling higher loads, improving efficiency and enabling digital smart grids.

Against this backdrop, there is significant scope for advanced conductor technologies such as APAR's high ampacity, low loss (HALL) covered conductor which, as the name suggests, are engineered for efficiency and reliability, and are designed to deliver higher current-carrying capacity with minimal transmission loss, thereby supporting a smarter, stronger and greener grid.

In addition, we foresee strong prospects for APAR's optical phase conductor (OPPC), which seamlessly integrate power transmission and optic communication to deliver both data and power through a single system. These are ideal in situations where ground wires are absent, such as medium voltage or distribution networks, or in urban and space-constrained corridors where adding an optical ground wire (OPGW) is not feasible. Another opportunity is OPGW fiberisation of existing transmission lines. While many utilities have already implemented fiberisation at the 132 kV level across numerous networks in India, there is substantial potential at 66 kV and higher voltages up to 765 kV. This can even be implemented on live lines, enabling utilities to strengthen communication networks without service interruptions, and will play a pivotal role in making the grid robust, future-ready and smart. With increasing telecommunication density, there is tremendous potential for deploying high-fibre OPGW solutions.