

EPR

electrical & power review



PEEPING INTO INDIA'S POWER PLANTS

INSIDE

⚡ **Solar-powered irrigation system**

⚡ **Conserving water in cooling towers**

⚡ **High-end vibration analysis in wind turbines**

Toshiba's advanced end-to-end Energy solutions for a new day

“Toshiba is a world leader in Energy sector and we have established India as a global manufacturing base and export hub for power & electrical equipment. We are committed to support India in its ‘Power for All’ objective and ensure stable power supply with advanced and sustainable technologies”

Significant growth in power sector has given a huge fillip to India's unprecedented economic growth. The Government of India (GoI) is focusing on attaining 'Power for all', which has accelerated capacity addition in the country. With total installed capacity of power stations in India at 349.28 Gigawatt (GW) in January, India is now the world's third largest producer of electricity, after China and the US, and is pegged to become a power surplus country. India has also become one of the world's leading countries in renewable energy development. By 2022, a total capacity addition of 58.38 GW from conventional energy sources is estimated while the renewable energy capacity is expected to be ramped up to 175 GW. Owing to this remarkable progress, electricity demand in India is expected to almost triple between 2018 and 2040.

Realizing early on the huge potential and challenges of the Indian energy sector, Toshiba introduced complete energy solutions – from generation to T&D and storage, vital for India's energy security. Toshiba invested heavily in establishing manufacturing facilities in India for thermal and hydro energy generation equipment, and transmission and distribution equipment. In thermal sector, Toshiba offers comprehensive one-stop solutions that cover Engineering, Manufacturing, Procurement, Construction and Service (EMPCS). In hydropower systems, Toshiba offers a complete range of solutions ranging from small to large capacity and advanced technologies like adjustable speed pumped storage system.

To ensure last mile connectivity of uninterrupted power supply, a huge network of efficient energy transmission & distribution (T&D) is vital. In the FY12-17 period, India added 1.1 lakh circuit kilometre of transmission lines. With estimated capacity augmentation of about 480.4 GW by FY22-end, additional 1.1 lakh circuit kilometres of transmission lines are required to make the infrastructure more flexible to accommodate the evolving trends in power consumption. Toshiba, through its subsidiary Toshiba Transmission and Distribution Systems (India) Pvt. Ltd (TTDI) offers wide range of high efficiency T&D equipments like small, medium and ultra high voltage transformers up to 1200kV, distribution transformers

and Gas-insulated switchgear. TTDI also contributes significantly to the renewable sector by supply of inverter duty transformers to the solar sector and offering skid mount solutions for wind sector to the growing renewable sector demand.

All this energy infrastructure augmentation comes at an environmental cost. India today emits over 3bn tonnes of carbon dioxide (CO₂). But India's commitments under the Paris Climate Agreement are leading the transformation in power generation mix by focusing on clean energy generation. India has proposed incentives worth ₹835 billion to encourage power plants to install equipment to curb sulphur emissions from power plants. Hydrogen based energy solution like Toshiba's H2One™ technology can be a game-changer for India's future energy. H2One™ is a hydrogen-based autonomous energy supply system housed in a single container that combines renewable energy unit, storage batteries, hydrogen-producing water electrolysis equipment, hydrogen & water storage tanks, and fuel cells. Its mobility and stackability makes it a preferred choice for remote / disaster hit areas requiring crucial immediate power. As India's energy dependence on renewable sources grow, Toshiba's SCiB™ batteries distinguished by its long-life and excellent performance with a high level of reliability and safety, can prevent instability in the power grid resulting from this feed-in.

India is already working towards methodological scientific framework to arrive at realistic integrated solutions to complex energy problems, by adopting a holistic systems-based approach. We at Toshiba, stand committed for the development of Indian Power sector through our Japanese technology and expertise, and to contribute to the growth of industries FOR THE NEXT INDIA. ⚡

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