RenewableWatch

Interview with Deepesh Nanda: “The renewable energy sector in India has experienced a remarkable upswing”

December 7, 2023

India’s renewable energy sector has witnessed various policy and market developments in 2023, which have created many opportunities for developers and manufacturers. One such company is Tata Power Renewable Energy Limited (TPREL), which has been proactive in both spaces. In an interview with Renewable Watch, Deepesh Nanda, chief executive officer and managing director, TPREL, talks about the key developments in the sector over the past year, technology trends and his views on gender equity within the industry and the organisation…

What have been the key hits in India’s renewable energy sector over the past year?

Over the course of the past year, the renewable energy sector in India has experienced a remarkable upswing, primarily driven by the dominance of solar power. As of September 2023, solar power commands a substantial 46.34 per cent share of the

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total renewable energy generation. This dedication to solar energy is underscored by the approval of 57 solar parks, boasting a cumulative capacity of 39.28 GW, reflecting a strategic emphasis on expanding solar infrastructure. In alignment with our solar initiatives, wind energy has also become a central focus. We have established a clear offshore target of 37 GW by 2030.

India has achieved a significant milestone by surpassing its Nationally Determined Contributions (NDC) target, reaching 40 per cent renewable capacity ahead of schedule. The country is currently aiming for an even higher target of 50 per cent by 2030. Tangible impacts are discernible in these capacity achievements, with the impressive addition of 6,972.62 MW during April-October 2023, which contributed to the cumulative achievement of 132,132.44 MW as of October 31, 2023. Behind these accomplishments lie a series of government initiatives actively promoting renewable energy. These encompass a spectrum of measures, including policies, financial incentives, subsidies and regulatory support. The proactive stance of the government is further highlighted by its commitment to sustained growth, as reflected in both the early NDC achievement and the formidable capacity goals set for the future. Even as we recognise these commendable achievements, strategic planning remains imperative, serving as the foundation for effectively addressing challenges and ensuring the sustained growth of the renewable energy sector.

What were the key achievements of the company over the past year?

TPREL surpassed a significant milestone by exceeding 1.4 GW of group captive project capacity in the last six months. This achievement has facilitated the successful execution of power delivery agreements with leading industrial entities, such as Tata Steel, Tata Motors, Mukand Limited and Supreme Petrochem Limited.

TPREL has positioned itself as a leading player in the solar sector, and is responsible for one of India’s largest upcoming greenfield solar cell and module manufacturing plants – a 4.3 GW project in Tirunelveli district in Tamil Nadu, India. furthermore, TPREL has secured a letter of approval for a 966 MW hybrid renewable energy project, seamlessly integrating solar and wind power.

What, according to you, are the current technology trends in the solar space?

Several advanced solar technologies have been gaining prominence in the renewable energy sector. For example, perovskite solar cells have emerged as a promising alternative to traditional silicon solar cells, offering potential improvements in both efficiency and cost. Another notable trend is the adoption of bifacial solar panels, which can capture sunlight on both sides, thereby increasing energy yield by harnessing the sunlight reflected from the ground on to the back of the panel.

Tunnel Oxide Passivated Contact (TOPCon) technology had been generating a buzz in the solar industry since 2016 and officially entered mass production in 2019. It is a cutting-edge cell technology that aims to surpass the limits of existing PERC cells, with

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manufacturers continually exploring alternative technologies for more efficient panels. Heterojunction solar cell technology has also revolutionised solar energy by combining crystalline silicon and amorphous thin-film silicon, offering the potential for increased efficiency and serving as a promising option for future developments such as tandem structures. We proudly lead in the realm of advanced technologies, and our Tirunelveli manufacturing plant is set to embrace these innovations. This strategic integration will enable the production of high wattage solar modules and cells, helping achieve industry-leading efficiencies.

Floating solar parks have introduced an innovative approach to solar panel deployment by allowing them to be installed on waterbodies. This approach brings several advantages, including reduced land requirements, minimised evaporation from water bodies and enhanced panel cooling, leading to improved overall efficiency. However, considerations related to water quality and impacts on the ecosystem are crucial in this context. We have set up India’s largest floating solar power project, with a capacity of 101.6 MWp, in Kayamkulam, Kerala, on a 350 acre waterbody, in the backwaters area. The project is equipped with CCTV surveillance, ensuring continuous monitoring for increased security and quick detection of malfunctions.

What impact do you feel renewable energy projects have on the community? How is your company promoting gender equity?

Renewable energy initiatives can often bring about positive socio-economic changes for people and communities, especially those residing in remote areas. While most of these populations often rely on conventional energy sources such as gas, firewood and kerosene, introducing them to renewable energy can enhance their quality of life.

- **Better job creation**: Renewable energy projects often generate jobs, during both the construction and maintenance phases. This can benefit the local economy and provide employment opportunities for the community.
- **Fosters the local economy**: These projects not only contribute to sustainable energy sources, but also help in the growth of the local economy by fostering the emergence of new businesses and investment opportunities. With the increased workforce participation, the local economy gets an additional boost.
- **Positive environmental impact**: The most common benefit of such renewable projects is the reduction of greenhouse gas emissions and other pollutants. This leads to improvements in the air and water quality, and can have long-term health benefits for the community people.

We have been committed to promoting gender diversity at all levels of the workplace. In the last few years, the participation of women in the workforce has increased in the renewable industry. To offer women employees a comfortable and safe space to work, we have introduced various initiatives such as:

- **Mentoring programme**: A 12-month programme for holistic training and

development of women employees with the help of senior leaders in the organisation.

- **Tata Group programmes**: Tata Power actively adopts Tata Group-level initiatives for diversity and inclusion.

Additionally, at our upcoming 4.3 GW solar cell and module manufacturing plant in Tirunelveli district, Tamil Nadu, we aim to hire a majority of women employees from local areas. This is an initiative to promote gender equity and contribute to a more inclusive and diverse workplace.

What are your targets for the company?

TPREL is committed to achieving sustainable growth and success. Our core objective is to deliver high quality services, foster innovation and strive for the betterment of the communities we work with. We always keep a positive outlook for growth, and we are confident of robust growth in the coming years.

We are currently working on numerous projects that are poised to reinforce our competitive advantage. These projects are strategically positioned to enhance our marketplace and ensure sustained competitiveness in the renewable industry.

What is your take on recent bidding activity and tariffs?

The bidding activity in the renewable energy sector, including in solar power, has been competitive, with the cost of solar energy decreasing over the years. Governments and organisations often use competitive bidding processes to secure the most cost-effective and efficient renewable energy projects.

Hybrid tariffs, which involve a combination of different renewable energy sources or a mix of renewable and conventional energy sources, can vary depending on the specific technologies involved and the conditions of the energy market. A comparison between solar power tariffs and hybrid tariffs would depend on factors such as the local energy mix, project scale and technological efficiency.

The outlook for renewable energy, including solar and hybrid projects, is generally positive. Many countries are committed to increasing the share of renewable energy in their energy portfolios to address environmental concerns and achieve sustainability goals. Additionally, advancements in technology and economies of scale have contributed to the decreasing cost of renewable energy, making it more competitive with traditional forms of energy.

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