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Making the Energy Transition

Experts' perspective

Climate change mitigation and decarbonisation are the key focus areas in the power sector, and rightly so. India has announced goals to increase its reliance on renewables and reduce the carbon intensity of the economy at the 26th Conference of Parties (COP26) of the UN Framework Convention on Climate Change. The year also saw key developments in the distribution segment with the roll-out of the Revamped Distribution Sector Scheme (RDSS) and the Late Payment Surcharge Rules, both aimed at overhauling the ailing segment. *Power Line* invited industry experts to assess the sector's progress over the past year, and share their views on the challenges and the way forward...

What is your assessment of the power sector's progress during the past year?

Rohit Bajaj

India's power sector is transforming rapidly on all fronts, including generation, energy mix, transmission capacity and demand growth. We have witnessed significant electricity demand growth with the revival of economic activity and this is expected to continue as the GDP is expected to grow at 7-8 per cent in the next few years. This has been especially proven in the last year (2021-22) when power demand soared to new highs registering a 7.8 per cent year-on-year growth, after two years of slowdown.

India is the third-largest producer and consumer of electricity in the world. Even today, India consumes about 1,400 BUs of electricity on an annual basis. The short-term power market covers 12-13 per cent of India's power sector, accounting for over 180 BUs. As of June 30, 2022, the total installed power generation capacity in India stood at 404 GW. The renewable capacity at 161 GW contributes approximately 40 per cent to the installed capacity. The growing green power capacity is a precedent of the mass-energy transition that is under way, driven by the commitments made by the prime minister at the COP26 summit last year in Glasgow. Due to the increased industrial activity and a heatwave across the country, India witnessed the national peak demand for electricity growing to 212 GW, which is an 11 per cent year-on-year increase.

Given this trend, we are expecting that the power demand will see an increase of 7-8 per cent this year and a significant portion of that additional demand will come to the market. Further, a net zero emissions aspiration by the year 2070 sets the tone for the continued pursuit of sustainability- and renewables-led energy transition in the long term.

Pankaj Batra

The Indian power sector has been growing progressively. The electrical energy requirement increased from 1,275 BUs in 2020-21 to 1,380 BUs in 2021-22, a rise of 8 per cent, and peak demand increased from 190 GW in 2020-21 to 203 GW in 2021-22, a growth of 7 per cent. Demand further increased to 216 GW in April 2022 (from 183 GW in April 2021, a phenomenal rise of 23 per cent), which could not be met and a shortage of 4 per cent ensued. The electrical energy requirement in April 2022 stood at 135 BUs (up from 117 BUs in April 2021, a rise of 15 per cent), with a shortage of 2 per cent. This, of course, was from a low base due to the Covid-19 pandemic last year, and possibly a change in weather from rains in April 2021 to very scanty rainfall in April 2022. The peak demand dropped

Rohit Bajaj
Head, Business Development, Regulatory Affairs and Strategy, Indian Energy Exchange Limited

Pankaj Batra
Project Director, SARI/EI-Integrated Research and Action for Development, and ex-Chairperson, Central Electricity Authority

Arun Goyal
Member, Central Electricity Regulatory Commission

Amit Kapur
Joint Managing Partner, JSA, Advocates & Solicitors

Professor S.L. Rao
Former Chairperson, CERC, and Member, Advisory Board, Competition Commission of India

Prabhajit Kumar Sarkar
Managing Director and Chief Executive Officer, Power Exchange India Limited

Dr Rahul Tongia
Senior Fellow, Centre for Social and Economic Progress

sion budgets with requirements to get offset with credits backstopped by enforceable penalties, (iii) laying out the roadmap for a gradual, steady shift from voluntary to mandated emission reduction for various industries and GHGs, (iv) defining participants on the buy and sell side as well as rules governing the platforms and bilateral trades, and (v) establishing a mechanism that will enable the Indian industry and segments of the economy to harness the revenue potential of carbon credits linked to international markets. This would go a long way in attracting sustainable finance and technology to India.

Meanwhile, in the face of recent power shortages and the critical shortage of coal, NTPC has announced that it is reversing its much-lauded 2017 decision to phase out old, inefficient thermal plants. Simultaneously, with the Russia-Ukraine conflict and the resultant energy situation (vis-a-vis gas availability and price), several European countries are also reviving coal-fired plants, derailing their nationally determined contributions and energy transition plans. This is also likely to put an inflationary pressure on the import bill to meet India's energy needs.

Professor S.L. Rao

It is very difficult to identify any single major element of progress in the past one year. There has been considerable improvement in the availability of power, but there are major weaknesses in the distribution and pricing of power, and these need to be dealt with.

Over the years, the government has done a few things that might make the situation of energy suppliers a little better in terms of payment, etc. However, coal has not benefited a great deal from this. I am not too happy with the existing situation. It has something to do with the fundamentals of the system. The most important part of the system is the fact that India is a federation. Electricity is a concurrent subject and thus states have their own policies. My problem has been that there is no compulsion on state-owned electricity distribution companies to produce a surplus in their operations and this has been a problem for the past so many years. This is due to the fact that the state governments, to get close to the voting population, are inclined to offer subsidies. These subsidies are not reimbursed in time and sometimes not at all, leaving electricity distribution companies in bad shape in terms of their ability to pay.

There must be a compulsion for the state electricity regulatory commissions to oversee that the distribution companies are run either with a surplus, or are reimbursed without any delay with respect to any action that they undertake due to government directives, which results in them losing money. The situation has not changed. Unfortunately, the appellate tribunal created in 2003 also does not seem to have the authority to change this situation.

Prabhajit Kumar Sarkar

The power sector's performance acts as a leading indicator of the state of the economy. From an initial dip in demand in March/April 2020 to continuous highs, whether in terms of peak demand met and energy transacted, the power sector has shown positive signs of recovery and is on the path of continuous growth.

As the war in Ukraine and other geopolitical issues impacted the imported coal segment, there was a period when coal supplies got affected, leading to a scenario of high prices for a short while. However, that was successfully overcome in a matter of days with the coordinated efforts of the MoP along with coal and railway ministries as well as by immediate action by distribution companies and power generators spread across the country.

We have had the benefit of a highly dynamic and progressive policy environment where multiple issues related to payment security mechanisms, payment delays, coal availability, power transactions and development of markets have been quickly redressed.

Longer-term initiatives related to sectoral efficiencies such as the Electricity Amendment Act and the Energy Conservation Amendment Act have been taken up, with the latter already being notified.

In addition, the regulatory framework in our country has continued to evolve at a rapid pace with several key regulations being updated in the past one year. These modifications are comprehensive in nature and have accommodated the changes in the modes of transactions as well as a significant evolution that has taken place in the power sector. These include the power market regulations, the GNA, the grid code, regulations related to ancillary services and deviation settlement mechanism (DSM), etc.

During the year, PXIL enabled transactions in renewable energy by introducing GDAM and GTAM contracts. The green contracts have created market-based avenues for transaction in solar, wind, hydro and small-hydro power. This has expanded the role of the exchanges in providing signals for future capacity additions in the renewable space as well.

Dr Rahul Tongia

Mitigating climate change is a heavy factor through the power sector, more so for India. But this last one year has emphasised that there are multiple criteria and objectives when it comes to energy and electricity policy, not just climate change. The Ukraine crisis has brought energy security to the fore, not to mention concerns over affordability. Planning and policy always cycle between multiple objectives – it is only the emphasis and urgency that shift around.

Prime Minister Narendra Modi's Glasgow COP26 declarations emphasised not just net zero but also a shorter-term focus on the power sector. While the ambitions announced spoke of much higher renewable energy capacity targets, technically listed as non-fossil, the actual filing of India's international commitments, the Nationally Determined Contribution, was for 50 per cent non-fossil capacity. This still means a high renew-