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(Energy Conservation : It Doesn't Cost. It saves)

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Surplus TN allows generators to sell power outside state

Times of India: June 6, 2016

With the power situation improving in the state, the Tamil Nadu government has allowed private power companies to sell electricity to other states by lifting Section 11 of the Electricity Act 2003.

An order to this effect was issued by the government on May 31. The last time the government withdrew the section was in 2014 but within a few months, it re-imposed the section due to shortage. According to the order, there is surplus power to the extent of 300 MW. Along with Kudankulam unit 2, the surplus may increase in the coming months.

In addition to the above, there's some 430MW of standby power from independent power producers as well as 500MW from long term sources. So even if there is a surge in demand up to 1,000MW, Tamil Nadu will be comfortably placed to handle it, said a senior official. "The power companies, including wind generators, can now sell power to other states or private companies by using the grid and they will have to pay user charges (wheeling charges).

Even if the demand touches 17,500MW we will be able to meet it without any problem as we have many standby sources," he said. Last year some wind power companies went to the court seeking an order to the government to lift the section. "It is a great decision. Now we will be able to sell power generated to other states which have shortage.

It is only between May and September we generate power but at times TNEB would not evacuate the power and it would go waste," said a wind power generator. With a small capacity of 3MW, the generator is hopeful of selling power generated through the power exchange. So far one company has come forward to sell power to other states.

TNEB hopes to review the situation in September and take a call on whether to bring back the section.

Eastern region to face 10% power deficit: CEA

Business Standard: June 3, 2016

Nationwide power requirement pegged at 12,14,642 mn units in FY17 against 12,27,895 available mn units

The country's eastern region is projected to face average power shortfall of 10.1% in the current fiscal but would have a peak surplus of 4.9%. The country as a whole, will have surplus power of 1.1%.

Nationwide power requirement is pegged at 12,14,642 million units (MU) in FY17 against which the availability is 12,27,895 MU, says the Load Generation Balance Report (LGBR) for 2016-17 by the Central Electricity Authority (CEA).

The northern region is tipped to face average power deficit of 1.8% and peak power shortfall of 1.6% in this fiscal. For the north-eastern region, the deficit is pegged at 8.3% and 3.8% respectively. On the contrary, western and southern regions would be in a position of surplus power both during peak and non-peak hours.



"The assessment of the anticipated power supply position in the country during the year 2016-17 has been made taking into consideration the power availability from various stations in operation, including non-conventional energy sources, fuel availability, and anticipated water availability at hydro electric stations.

A capacity addition of 16,654.5 Mw during the year 2016-17 comprising 13,440.5 Mw of thermal, 1,714 Mw of hydro and 1,500 Mw of nuclear power stations has been considered. The gross energy generation in the country has been assessed as 1,178 BU from the conventional power plants in operation and those expected to be commissioned during the year", said the CEA report.

During 2015-16, all regions of the country continued to experience energy as well as peak power shortage of varying magnitude on an overall basis, although there were short-term surpluses depending on the season or time of day. The surplus power was sold to deficit states or consumers either through bilateral contracts, power exchanges or traders. The energy shortage varied from 0.2% in the western region to 5.2% in the north-eastern region.

(Please visit TECA Website <http://www.tecaonline.in> Encyclopedia to view the CEA Load Generation Balance Report 2016-17)

Green Ministry wants to build 10,000 local grids powered by renewable

Business Line: June 2, 2016

For the first time in history, India will not have power deficit situation in FY17 India has, for the first time in history, declared that it will not have a power deficit this year, a situation officials say is an outcome of the current government's initiatives to resolve burning issues like fuel scarcity. The country will have a surplus of 3.1% during peak hours and 1.1% during non-peak hours during 2016-17, latest data from the Central Electricity Authority shows.

This is the first time that the country has declared a year of no shortage though many regions have had power surplus for shorter periods. In 2015-16, the peak hour deficit stood at -3.2% while non-peak hour deficit was at -2.1%. The deficit was as high as 13% about a decade ago.

The data, based on gap between demand raised and demand met, shows that June onwards the country will have more electricity than required. Half of the states will be surplus, while others may face shortage in varying degrees.

The NDA government says power surplus scenario as one of its big achievements. Coal output, which was stagnant for years, has increased significantly, helping many stranded power plants start generating electricity. The government has also launched a high-profile scheme to reform state distribution companies, which are a vital link between power plants and customers.

Experts said that the surplus power situation is an average for the entire country although some regions would still face a small deficit. Also, the surplus indicates that the power demanded by state utilities is being met.

It hides the fact that these state utilities often choose to black out areas to reduce their losses, or due to technical failure. Congress leaders also seek credit for increased supply

Charging up the power sector

Business Line: June 6, 2016

The Centre has set the reform process in motion. This has already made a difference but the full impact will be felt only in the long run



The Indian power sector has been a hotbed of activity since the NDA government took over the reins two years ago.

From providing a lifeline to the ailing state-owned power distribution utilities (discoms) in the form of UDAY (Ujwal DISCOM Assurance Yojana) to ramping up the country's traditionally neglected transmission network to boosting domestic coal supply, providing subsidised gas to stranded fuel-starved plants and introducing e-auctions for short-term power purchases by discoms, many initiatives have been introduced.

But are these measures enough to shore up the fortunes of the struggling power sector? We take stock of some of these developments.

All is not well

Today, even though domestic coal supply has improved and international coal prices have fallen, the country's power generation hasn't shown drastic improvement. Thermal power (coal and gas-based), which accounts for 70 per cent of the country's power generation, rose to 943 billion units in 2015-16, up only 5.5 per cent from the previous year. This was preceded by 8.6 per cent growth in 2014-15 and 6 per cent in 2013-14.

The country's thermal power capacity, on the other hand, has grown at a much faster clip during this period. From 1,51,490 MW, three years ago, the capacity had expanded to 2,10,675 MW by March 2016, an average 11 per cent growth every year.

This has led to falling capacity utilisation levels at power plants — the all-India thermal plant load factor has gone down from 65.6 per cent in 2013-14 to 62.3 per cent in 2015-16.

This can be seen at the company level too. Take, NTPC, for instance, which is the country's largest power producer. During 2015-16, the company produced 242 billion units of power, almost the same as in the year before. This was preceded by 3.4 per cent growth in generation in 2014-15. The company's generation capacity has been expanding but its plant load factor has been falling — it came down to 78.6 per cent in 2015-16 from 81.5 per cent in 2013-14.

So, what is holding up power generation? Insufficient purchasing power of the financially strapped state discoms.

Years of inefficiencies and subsidised tariffs have led to a situation where the discoms have accumulated loss of ₹3.8 lakh crore (as of March 2015). Given the state of affairs, the state discoms are in no position to buy electricity beyond a point and have instead been resorting to load shedding.

By lifting out the discoms from their financial mess, UDAY (discussed below) will help spur the country's electricity demand. A lot, however, hinges on the extent to which the discoms adhere to the efficiency parameters laid out under UDAY.

Apart from that, a sustained pick-up in industrial and commercial (shopping malls, theatres and big offices) growth too is equally critical. It is this segment which pays higher power tariffs and cross-subsidises the cheaper household tariffs.

A new dawn

The single biggest initiative, UDAY, the Centre's financial restructuring package for state discoms, has attracted the most publicity and rightly so since its launch in November.

States that sign up for UDAY will take over 75 per cent (50 per cent in 2015-16 and 25 per cent in 2016-17) of their discoms' debt and issue bonds to banks and other financial institutions to raise money to pay it off. The remaining 25 per cent debt will continue as a loan but with a cap on interest rates. This will bring in immediate interest cost relief to the discoms and, to that extent, improve their cash flows. ICRA estimates that this could take



away interest burden of ₹30,000 crore from the books of the discoms, assuming all States except Tamil Nadu join the scheme.

In return for the financial assistance, discoms have to meet certain efficiency parameters through installation of smart meters and upgrading of transmission infrastructure and also undertake periodic tariff hikes.

To incentivise the States to join UDAY, the scheme provides for additional funding from the Centre and additional coal supplies. So far, 18 States have signed agreements or have agreed to join the scheme.

As the discoms' finances mend, they can increase their power purchases, thereby boosting power demand and the capacity utilisation levels of power generation companies. Today, 20,000 MW of generation capacity is lying idle for want of power purchase agreements with discoms.

Strengthening network

Distribution apart, the government has been working on bolstering the historically ignored power transmission sector too. Data shows that there has been an addition of about 84,000 circuit km (cKm) of transmission lines during 2012-16, the highest ever in any Five Year Plan.

According to the set target, the transmission line network will be expanded to a further 3,64,900 cKm by March 2017. Likewise, the addition of 2,49,400 MVA transformation capacity during 2012-16, too, has been the highest ever.

With the commissioning of 765 kV of transmission lines since July 2014, the power transfer capacity to the southern grid has increased from 3,450 MW to 5,900 MW. The plan is to raise it further to 18,000 MW by 2020.

Higher investments in the transmission sector should benefit Power Grid Corporation of India, the country's principal transmission utility and also other private sector players bidding for transmission projects.

Clarity on coal

After growing at a very slow pace, coal supply to the power sector rose 12.5 per cent to 388 million tonnes in 2013-14. From there, the coal supply expanded further to 455 million tonnes by 2015-16.

Expansion in the capacity of the existing mines, faster government approvals, higher railway rake availability and improved rail connectivity in coal-rich Jharkhand, Odisha and Chhattishgarh have helped Coal India, the country's largest coal miner, to ramp up production.

Coal-based power accounts for 62 per cent of the country's total electricity generation.

Apart from taking steps to boost domestic coal production, one of the major initiatives by the government was the introduction of the Coal Mines (Special Provisions) Ordinance, later replaced by an Act, to bring in the much needed transparency in the sector.

The Ordinance detailed the process of auctioning/allocating coal mines, the original allocations of which were cancelled by the Supreme Court in 2014 on account of irregularities.

Nine coal mines have been auctioned to the private power sector and the winners include Essar Power, JP Power Ventures, Adani Power and CESC.

While companies have managed to bag mines, the viability of the power produced from the aggressively-bid-for mines remains to be seen.



Additionally, the government also allocated mines (as provided under the Act) to central and state public sector companies, including NTPC, Karnataka Power Corporation, West Bengal Power Development Corporation, Odisha Coal and Power and Damodar Valley Corporation.

Most recently, the Cabinet's nod for flexibility on utilisation of domestic coal by power plants bodes well for the sector. While the details are still awaited, the proposal is to allow flexibility in the use of coal among different generating stations of a power company.

This is expected to promote efficient utilisation of coal, thereby bringing down thermal power costs.

Firing up gas plants

Apart from efforts at improving the domestic supply of coal, gas (re-gassified LNG) auctions conducted by the government have helped fire up many stranded gas-based plants. So far, three auctions have been conducted.

During 2014-15, over 50 per cent of the country's gas-based capacity had no supply of domestic gas.

Under the auctions, the government has been importing RLNG for supply at subsidised rates to gas-based plants operating at very low capacity.

At the auctions, the companies asking for the lowest subsidy from the government for supplying power to the discoms are allocated gas.

During June 2015-March 2016, 16 billion units of power were generated for supply to power discoms at ₹4.7 (or below) a unit. Another 6.8 billion units will be produced during the six-month period ending September 2016.

Twenty-nine power plants, including those of Gujarat State Electricity, Essar Power, Torrent Power and GMR, were eligible for participation in these auctions.

Take the case of Torrent Power, which runs over 80 per cent of its power generation capacity on gas.

Helped by the supply from the RLNG auctions, three of the company's plants generated close to 7,000 million units of power in 2015-16, about 2.5 times more than in the year-ago period. This helped the company grow its revenue and operating profit at 12 per cent and 42 per cent, respectively, in 2015-16.

With international LNG prices having eased considerably, some companies may now be in a position to source imported gas for their plants.

More transparency

Another recent government initiative has been the launch of 'DEEP' — Discovery of Efficient Electricity Price — portal for compulsory purchase of short-term power (for a period of more than a day to a year) by state discoms through reverse e-auctions. Today, short-term power trades, which happen either on power exchanges or bilaterally (directly between a discom and a power producer), account for about 10 per cent of the country's power generation.

Since April 2016, all bilateral trades are being conducted on the newly launched e-auction platform.

Participation from a much wider network of players (as compared to bilateral trades) on this platform via a reverse auction methodology is expected to bring in greater transparency and thereby bring down tariffs.



This is already evident from the average winning bid tariff quoted in the auctions held for procurement of short-term power by the distribution utilities of Bihar, Kerala and Uttarakhand.

These were in the range of Rs 2.59/unit– Rs. 3.54/unit in most cases. This was lower than the average tariff of around ₹4/ unit for short-term procurement under the earlier bilateral route over the past 2-3 years.

According to estimates from ICRA, assuming that 10 per cent of the power procurement of a discom is from short-term trades, it can bring down retail power tariffs by 4-5 paise/unit.

Can UDAY overcome challenges, provide affordable power to all?- R.N. Nayak

Financial Express: June 7, 2016

The real challenge for the scheme lies in making it sustainable through operational turnaround

In order to ensure that these numbers are correct and authentic, meters are to be in place as envisaged in UDAY, i.e. all feeders by June 30 and DTs by June 30 of next year, respectively.

The central government came out with a comprehensive reform programme called the Ujwal Discom Assurance Yojana (UDAY) in November 2015, for the financial and operational turnaround of electricity distribution companies (discoms). The scheme is beneficial because it provides for affordable power to all, financial turnaround of discoms and also increases renewable energy penetration.

Until the end of FY16, as many as 10 states have signed MoUs, which constitute about 45% of total debt. The scheme makes a clear distinction in its responsibilities between state governments, discoms and the Centre. State governments have committed to take over future losses from 5% to 50% progressively from FY18 to FY21. The Centre has committed additional benefits such as priority funding through Deen Dayal Upadhyaya Gram Jyoti Yojana, Integrated Power Development Scheme, Power System Development Fund and cheap power from NTPC/other CPSUs, higher coal allocation/linkages, etc.

Of the 10 states that have signed MoUs, eight states have taken over 50% of the debt amounting to ₹1 lakh crore, of which a major portion (90%) is from the northern states of Uttar Pradesh, Rajasthan, Haryana and Punjab. Therefore, the success of UDAY for the first phase shall rest with the success of the northern states.

The real challenge for the scheme lies in making it sustainable through operational turnaround. Now, there are seven principles of operational turnaround.

Loss reduction

Aggregate technical and commercial (AT&C) losses have two components.

w Technical losses are generally transformation losses and losses occurring on flow of current through conductors/cables.

w Commercial losses are basically the difference between the total input energy and the total energy billed after taking out technical losses.

AT&C loss reduction, as claimed by various states, varies from 11% to 71%, with a national average of 22% for FY14. The determination of AT&C losses is not currently determined through measurement as all feeders, distribution transformers (DTs) and consumers do not have metering facilities. Thus, most of the time AT&C loss is worked out with an estimated number. In order to ensure that these numbers are correct and authentic, meters are to be in place as envisaged in UDAY, i.e. all feeders by June 30 and DTs by June 30 of next year,



respectively. So, all losses will be determined through measurement. Further, each DT will be monitored by energy sent out and sum of all energy bills of consumers on that DT.

Technology penetration

Development of distribution network characteristics differs from state to state. Distribution voltage levels are distinguished as LV (400V), MV (up to 33kV) and HV (up to or above 66kV). HV network is generally meshed and not planned with redundancies, such as transmission. Monitoring and automation are unsatisfactory, making it difficult to supervise and control the HV network from a control centre. On the other hand, MV distribution networks significantly differ in characteristics in case of urban and rural. Mostly meshed but many states operate radial. The MV network with remote monitoring, control and automation with protection/fault sectionalisation is currently very low. LV networks are usually radially operated. Monitoring and control is non-existent. Measurement usually relies on aggregated information from substation and is only available with a significant time lag. More and more HV distribution systems, cables and automation needs to be installed to arrest losses.

Optimised power procurement

Power purchase costs are 80-85% of the cost of power supply. So, economical procurement is a key factor to reduce the cost of power. Earlier, the practice was to buy total power—even if it was required for a few hours—and pay a fixed cost for 25 years. Now, various power products are available in addition to long-term measures, such as medium-term, short-term, day-ahead, intra-day, etc. Power exchanges are functioning well and an e-bidding platform has been introduced by the central government. Each discom has to procure its power requirement scientifically, depending upon the load curve, season and cost.

This shall be more complex with penetration of renewable energy including distributed generation in the absence of real-time distribution system operations and will need accurate load forecasting, renewable energy forecasting and real-time distribution supply management like the transmission system operation. UDAY has started yielding results by reducing NTPC generation cost by around 15%.

Smart metering, billing and collection

This is the most crucial area of distribution system. UDAY envisages installation of smart meters for consumers of 500 units and 200 units per month by 2017 and 2019, respectively. The most important issues that need to be addressed are (1) cheaper communication from smart meters to a control centre and cyber-security for automatic reading; (2) complete automation from metering to collection and acknowledgement by customers; and (3) open protocol for communication to integrate meters of various manufacturers.

Reliable distribution service

The reliability of distribution service has been poor due to power outages and interruptions in the distribution system. This is primarily due to low investment in capex, operational expenditure and low level of technology penetration, including monitoring and control. In fact, a study has highlighted that the distribution charges per consumer of private discoms are about twice that of state-owned discoms, whereas state discoms' opex per consumer should be more in order to provide reliable services, considering large geography and dispersed load.

Human resources



The management being deployed needs to be professional/specialised, as one needs more turnaround specialists than business-as-usual managers. They have to be kept for a longer period, say 4 years, so that they are accountable for the decision taken. Further, introduction of new technology and renewable energy penetration in distribution would need new skillsets to trigger new business models and regulatory framework.

Intensive monitoring

This programme needs to be monitored intensively and bottlenecks have to be addressed then and there. This has to be done by an independent agency, to get feedback from grassroots level.

It is said that "well begun is half done." Financial engineering has taken off well and we have to take up operational turnaround aggressively on a Mission Mode. If UDAY is left to business-as-usual, this shall negatively affect state finances and all stakeholders badly. Stakes are much higher this time around.

(The author is former chairman and MD of Power Grid Corporation of India Ltd)

Big hydro power units may come under renewable energy

The Hindu : June 3, 2016

The Centre has begun studies to decide whether to include big hydro power plants under the ambit of renewable energy, Piyush Goyal, Minister of State (Independent Charge) for Power, Coal and New & Renewable Energy said on 03-06-2016.

"We are having a rethink of how we are treating big hydro power plants and whether we should include it in the ambit of renewable energy. We are studying what is the international pattern and then we will take a final call," said Goyal while releasing a coffee-table book by NTPC on bio-diversity ahead of World Environment Day.

The Minister, who planted a sapling at NTPC Power Management Institute, also said that the government will aim to get the Compensatory Afforestation Fund Bill cleared in the next session of Parliament.

"The Bill got passed in Lok Sabha and we expect it to be passed in the Rajya Sabha in the next session...If we had support from the opposition four months could have been saved and more trees could have been planted," said Goyal.

Only 16 of 29 state regulators have issued tariff orders so far: ICRA

Live Mint: June 2, 2016

Nearly half of all the state electricity regulatory commissions (SERCs) have failed to issue tariff orders for FY17 while state-run power distribution companies in big states such as Rajasthan, Tamil Nadu and West Bengal are yet to file tariff petition with the regulators for the current fiscal, ratings agency Icria said in a report.

Among the 16 discoms that have secured tariff orders from the regulators, the average hike has been a modest 5% as against proposed tariff revision of 5-33% in petitions filed by utilities.

As per a judgment by the appellate tribunal for electricity (APTEL) in 2011, the state utilities must file tariff petition for upcoming fiscal year petition by November. The respective state regulators must issue tariff orders before the close of fiscal. The judgment also recommended that regulators can take suo motu action in determining tariff revision if utilities fail to file the same within the stipulated time.



"The delay can be attributed to the proposed implementation of the UDAY, which resulted in some uncertainty about quantifying the impact of the scheme on the cost structures of discoms and hence on tariff requirements," Sabyasachi Majumdar, senior vice-president, Icra Ratings, said. He added that the recently held Assembly elections could also have led to delay in the tariff determination process for FY2017 in the states of Assam, Kerala, Tamil Nadu and West Bengal.

The ratings agency said the limited tariff hike has been accompanied by higher subsidy dependence for utilities in Bihar and Karnataka. The overall subsidy dependence for FY17 for the distribution utilities at all-India level is estimated at '75,700 crore, an increase of 7% against the previous fiscal. This is estimated to account for nearly 19% of the revenue requirement approved for the utilities for the current fiscal.

The increase in subsidy can be mainly attributed to the increase in subsidy for the discoms in Bihar, Karnataka and Maharashtra, Icra said. It added that subsidy dependence in other states such as Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu, Telangana and UP continues to remain significant owing to the highly subsidised or free power supply scheme to agriculture consumers and to some sections of domestic consumers in these states.

Save Energy. Save Money. Save the Planet

(Please visit our website www.tecaonline.in to view the previous News Clippings)