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

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TNERC cuts Tangedco's long-term power cost by 7%

The Hindu : October 6, 2017

No immediate need for high-cost power: research firm

Tamil Nadu Electricity Regulatory Commission (TNERC) has fixed the pooled cost of power purchases, or the average price at which it buys power from various sources, at ₹3.70 per unit for financial year 2017-18. The amount fixed is 7% lower than the cost of ₹3.96 per unit set last year.

The tariff is made effective from April 1, 2017.

TNERC also clarified that the pooled cost of the power is ₹3.70 per unit or 75% of the preferential tariff it fixes for procurement of power for conventional and other non conventional sources like wind and solar. Preferential tariff is the rate at which the State prefers to sign power purchase agreement and can be much lower than the general tariff fixed by the regulator.

According to research firm Mercom Capital, the pooled cost of Tangedco has fluctuated over the past three fiscal years. In FY 2015-16 it was ₹3.35 per unit, rising to ₹3.96 per unit in FY 2016-17, then falling to ₹3.70 (~\$0.056)/kWh this fiscal year.

Tangedco has been buying more of low-cost power and at the same time demand has not increased much and there is no immediate requirement to buy high-cost power, the firm said. Tangedco recently signed power purchase agreement to procure 1500 MW of solar power at the rate of ₹3.47 per unit. Wind tariff hit a low of ₹3.42 per unit in Tamil Nadu's first ever competitive auction for procuring 500 MW of wind power.

Tamil Nadu power plants in crisis mode; state wants Centre to bring relief

Financial Express : October 13, 2017

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In a memorandum to Union minister of state for power RK Singh, Tamil Nadu electricity minister P Thangamani has sought the Centre's intervention to instruct Coal India and railway authorities to supply 100% of the linkage quantity of domestic coal from the coal companies to Tangedco.

"Due to less realisation from the coal companies, out of the 12 Tangedco 210-MW units, six-seven units have been under shutdown and the current average coal stock at Tangedco's thermal power stations is only 3.3 days' requirement as on October 11 against the normal level of 30 days' stock," he said.



He further said the Tamil Nadu chief minister had sent a letter to the Union minister for railways and coal to advise the coal and railway authorities to allocate around 72,000 tonnes of coal per day by allotting 20 rakes to Tangedco to manage the current critical coal and power situation.

However, despite all this, the average despatch of rakes from the coal companies during September was only 9 rakes per day and the same in October (up to October 10) was only 9.5 rakes per day.

Consortium moves HC over rejection of bid in wind auction

The Hindu : October 12, 2017

Price quoted was less than winning bid'

Evergreen Renewables Private Limited, an arm of US-based Evergreen Solutions, has moved the Madras High Court against Tangedco's rejection of its bid in the recent auction to procure 500 MW of wind power.

The firm, part of a consortium, had bid at Rs. 3.34 per unit, which it said was 2.34% lower than the winning bid price of Rs. 3.42 per unit in the wind power procurement tender held in August.

Tamil Nadu was the first State to go for competitive auction for wind power. In its petition, the consortium said the reason cited by Tangedco for rejection of its bid was on grounds that it did not meet the net worth criteria and submitted the price bid along with the technical bid. "The present writ petition is being filed challenging the arbitrary and illegal action of the respondent [Tangedco] in rejecting the bid of the petitioner's consortium under the Reverse Bidding process tender with respect to establishment of Wind Power Generating Plants in Tamil Nadu for a total of 500 MW on wholly untenable grounds and contrary to the terms of the tender," it said.

'Against public interest'

The effect of such rejection, done without proper application of mind, had the direct effect of being contrary to public interest as the petitioner had quoted a price less than the rate at which the Tangedco was seeking to finalise the tenders, it added.

The firm had developed and financed over 3,000 MW of wind and solar projects in the United States since 1999 and was actively developing 350 MW of solar and wind projects in the U.S. It had commissioned the first solar project in India in April 2016, of 11.5MW in Telangana. In the wind sector, it was developing 550 MW projects in the pipeline in Tamil Nadu, Gujarat, Karnataka and Madhya Pradesh, the petitioner said.

The consortium had bid aggressively due to the advantages it had by way of equipment procurement and vast experience in the field, the petitioner said seeking a stay on the tender process pending disposal of the case.

No Salvation In Sight For Gas-Based Power Plants – India Ratings

India Ratings, a Fitch company, said it sees no chance for a revival in the fortunes of natural gas-based power generation plants in India.

The country saw the setting up of several such plants, especially in Andhra Pradesh, at the turn of the century on expectations of a gas boom from the Krishna Godavari basin in the Bay of Bengal.

However, the KG D6 block — which was supposed to produce at 80-100 MMSCMD — effectively doubling the production of the fuel in India — has seen output fall to single digits due to various reasons.



This has created a belt of 'stranded' gas plants in Andhra Pradesh which are too far in land to be serviced easily by ships.

Utilization levels at private plants have fallen to 14.4% last year from 70.5% six years ago.

The government tried to revive these plants last year by asking utilities to buy power from them at Rs 4.7 per kWh.

However, points out India Ratings, the current tariffs for electricity in India are around half of that level, and it would be very difficult to get state utilities to buy power at Rs 4.7 per unit.

"Distribution companies' appetite to buy power at INR4.7/unit would remain low, considering their weak financial health and access to cheaper alternatives," it said.

It pointed out that the cost producing electricity from imported gas cannot be less than Rs 2.84 per unit, even if the LNG price is just \$5 per million btu.

Even at such low LNG prices, gas power cannot compete with coal power at Rs 1.92 and imported coal at Rs 2.68.

The possibility of gas projects selling their power through exchanges to meet short-term demand is also low as short-term power prices have reduced to around Rs 2.5 per kWh, "which would not even cover the variable cost of generation."

Wind power auction sees low bid of Rs 2.64 per unit

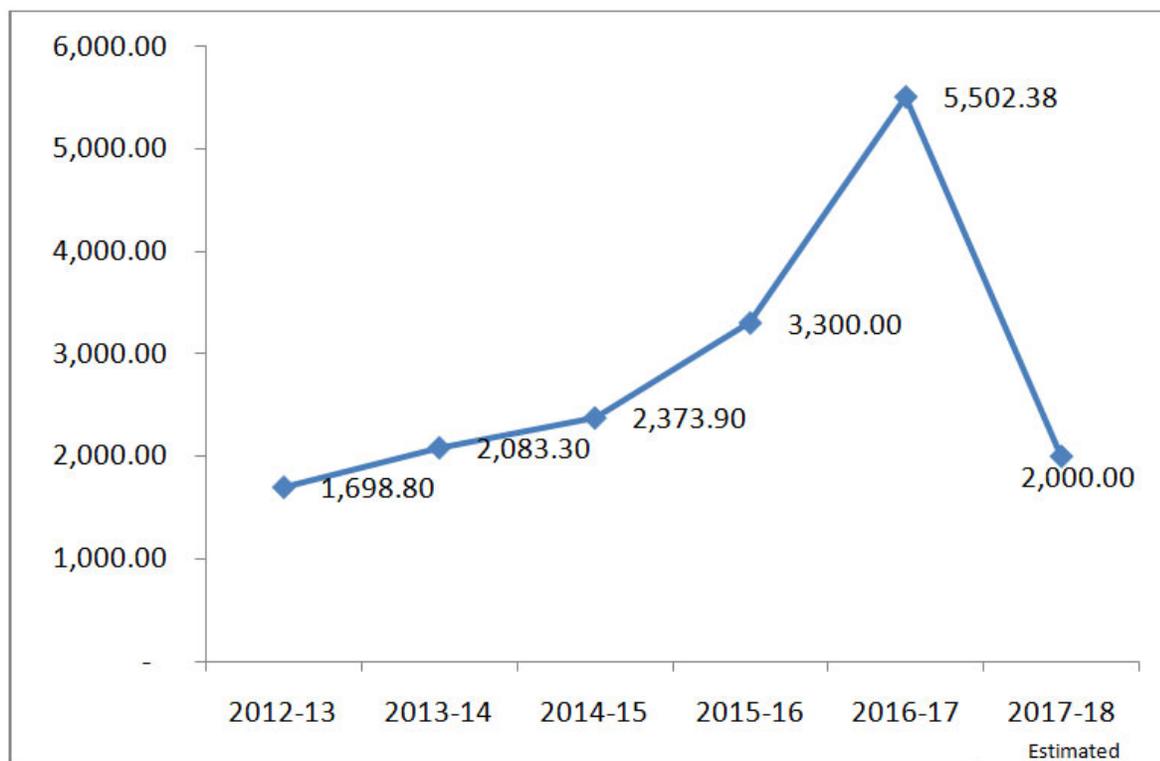
Down to Earth : October 10, 2017

The Solar Energy Corporation of India (SECI) conducted a second bid for 1,000 mega-watts (MW) for wind power projects. Nine companies won the bids—ReNew Power (250 MW), Orange Sironj (200 MW), Inox Wind (250 MW), Green Infra (250 MW) and Adani Green (50 MW). The lowest tariff that won the bid was by Renew Power and Orange Sirong, quoting Rs 2.64 per unit. The remaining bids were of Rs 2.65 per unit. All the proposed tariffs lower than tariff of Rs 3.46 per unit that was lowest bid in the last 1,000 MW auction earlier in the year in February and Rs 4.5 per unit in the auctions before that. It is remarkable step for wind sector since now wind tariffs are lower than the average price for power from NTPC is Rs 3.20 per unit.

Reasons for low tariffs

The tender was an attempt on the part of SECI to help non-windy states to install wind capacity. It was linking the wind installation to inter-state transmission system. There have been questions that reducing solar tariffs were a result of declining prices of solar modules and anticipation of them falling further in the coming year. However, this is not the case for wind turbines, but they are increasing in efficiency and that might help in tariff reductions.

There is also speculation that some companies like Renew Power have gained access to loans at lower rates of interest because of the power purchase agreement (PPA) would be a centrally-owned public sector undertaking and not with a state (which is the case for most wind projects). Another advantage that wind developers had was that they were open to choose any site under these SECI auctions and it would be near a transmission system. Wind sector has been plagued with evacuation issues and this closeness to the grid would ensure less curtailment or at least that is the hope for the developers.



Capacity addition in wind sector (Source: Ministry of New and Renewable Energy)

Unintended consequences

Many analysts fear that the low tariffs would result in small players being pushed out of the market. Low bids depend on having access to low cost of finance that small companies would not be able to acquire. Moreover, wind sector has also seen that the installations every year have been going down (Refer to Figure: Capacity addition in wind sector), which means that the few opportunities that exist would be taken over by few companies that can compete at these prices.

Very similar to the trends in the solar sector, many state governments are now attempting to renegotiate wind tariffs for already signed PPAs because of the low bid price of Rs 3.46 per unit in February. The lower tariff of Rs 2.64 would only make things worse. Tamil Nadu and Karnataka have started to get the tariff of Rs 4.4 per unit and Rs 4.5 per unit reduce down to Rs 3.4 per unit and Rs 3.75 per unit respectively.

The government has accomplished grid parity both in cases of wind and solar power against the great ambition of 100,000 and 60,000 MW targets respectively. But it has to ensure that these projects get installed and start feeding power into the grid before starting celebrations.

Are low wind power tariffs sustainable?

Live Mint : October 6, 2017

The drop in wind power tariff to record lows may seem like a positive, but industry insiders feel it may do more harm than good to the sector

While the drop in wind power tariff to Rs2.64 per unit, at an auction conducted by Solar Energy Corp. of India Ltd on Thursday, may seem like a great positive, industry insiders feel it is likely to do more harm than good to the sector.

For starters, several state governments are already pressurizing renewable power producers to renegotiate existing deals at a lower price, and the new record low tariff for wind power is



only likely to embolden them further. Tamil Nadu, for instance, has been trying to renegotiate agreements at Rs3.4 per unit as compared to Rs4.4 per unit that it has signed for. Karnataka, similarly, is vying for Rs3.75 per unit as against Rs4.5 per unit.

“Renegotiation of contracts is bound to dent the very little confidence that is left in India’s infrastructure sector. These all-time lows are bound to have a knock-on effect on thermal plants and while it may sound good in the short term, it will kill competition and finally leave the industry with just a few players. The natural consequence of that will be fewer bidders in subsequent rounds and prices will go up,” Sujjain Talwar, partner at law firm Economic Laws Practice, said.

Aaron Solomon of Solomon & Co., however, while acknowledging the fact that several state governments are trying to renegotiate existing power purchase agreements (PPAs), is of the opinion that implementing the same won’t be easy. “Once the government signs a PPA, it is committed to make payment of tariffs at the rates set out in the agreement. Hence, even though the government may be inclined to renegotiate the rate of tariffs, it may be unable to do so for the period the tariffs are fixed under existing PPAs,” Solomon said.

Sandeep Upadhyay, managing director and chief executive officer of Centrum Infrastructure Advisory Ltd, said wind turbine prices haven’t dropped enough to justify such low bids. “While some of the larger players like ReNew Power Ventures Pvt. Ltd have got the cheap capital (to operate at such lower rates), the repercussion this has on the industry is not that positive,” he said.

Echoing similar sentiments, Somesh Kumar, partner & leader, power and utilities, EY India, said, “As opposed to solar wherein module prices have really come down, I am not sure if wind turbine prices have dropped so much to justify such low bids.”

India has a target of installing 175,000MW of renewable energy by 2022. Of this, 100,000MW is to be generated by solar projects and 60,000MW by wind projects.

**Why India's largest smart meter rollout may not be very smart
This technology may not be the most suited for India, which has poor mobile and data connectivity: Experts
Business Standard : October 12, 2017**

Energy Efficiency Services Ltd (EESL), a joint venture between several public-sector enterprises helmed by the ministry of power, invited bids to procure 5 million ‘smart’ meters to be deployed in Uttar Pradesh and Haryana in August 2017. However, in this first large-scale rollout of smart meters, EESL may not have chosen the smartest technology, IndiaSpend analysis shows.

Unlike traditional meters that only record energy consumption, a smart meter is capable of two-way communication to also send information back to the electricity provider. In choosing GPRS (General Packet Radio Service that most mobile communications use today) over other technologies, EESL wants to use the existing telecom network to transmit data from smart meters, obviating the need for building a communication network from scratch and reducing upfront cost.

However, experts have told **IndiaSpend**, this technology may not be the most suited for India, which has poor mobile and data connectivity not only in remote and rural areas but even in large cities. Although EESL would avoid having to pay for installing new infrastructure, new meters may be obsolete every time 5G (fifth-generation) or newer technology comes in, requiring fresh expenditure. Also, GPRS-based meters would have monthly recurrent costs to be paid to telecom companies.



The government's leading electricity advisory, the Central Electricity Authority, finds GPRS less suitable for Indian conditions, and experts say a mix of technologies is the way forward.

A 'smart' meter

Smart meters use modern computer technology to enable a two-way flow of electricity and information, unlike traditional meters that only record energy consumption and can only be used for billing purposes. Deploying a smart, automated metering system would reduce meter-reading and data-entry errors and costs by removing the need for manual meter reading.

These meters would also estimate consumer demand, letting utilities forecast and contract power requirements more accurately, according to a 2017 analysis by the India Smart Grid Forum (ISGF), a public-private partnership helmed by the ministry of power. This is also essential for integrating renewable energy into the grid.

Smart metering is among the measures proposed under the Ujwal DISCOM Assurance Yojana (UDAY) to improve the financial health of power distribution companies (discoms), which would together cut aggregate technical and commercial (AT&C) losses from about 22% to 15%, and close the gap between the average cost of supply and the average revenue for DISCOMs by 2018-19, as **IndiaSpend** reported on April 13, 2017.

As per the power ministry's strategy to roll out 'advanced metering infrastructure', smart meters are to be installed in phases, with those consuming 500 kWh (kilowatt-hour or unit) or more to be provided with smart meters by the end of 2017, those consuming over 200 units by December 2019, and all consumers getting smart meters by 2027. There are currently 52 million meters in India that consume over 200 units of power, of a total customer base of 250 million, according to ISGF estimates.

In October 2016, the CEA revised its guidelines to suggest that metering infrastructure be rolled out by area and by feeder (a wire that carries electricity from a sub-station to a transformer for further distribution to the consumer), with high-loss pockets taken up first.

Consumers are not to be charged for smart meters, and financially stressed power utilities have been unable to pay either. As a result, only 3% of the more than 5 million meters (5,011,620) recording consumption of over 500 units had been changed to smart meters by September 2017.

Therefore, EESL announced a smart meter bid in August 2017 for the states of Uttar Pradesh and Haryana. "These states grapple with huge aggregate technical and commercial losses, with latest figures for both states coming to an average of 39.35%," EESL said in a statement to **IndiaSpend**.

EESL will make the upfront investment, and discoms will gradually pay it back from their cost savings. "The smart meters will help these states in not only significantly reducing their AT&C losses by way of increased billing efficiency, but will completely change the way in which electrical energy is presently being consumed and paid for by the consumers," the statement added. AT&C losses include losses during transmission and due to theft and deficiencies in metering.

EESL will procure meters operating on the GPRS communication system using 3G (third generation) telecommunications technology, as used in cellular or mobile phones. However, this technology may not provide complete coverage, especially in rural and other areas with low connectivity, and may not bring all the benefits expected, an **IndiaSpend** analysis has found.



Less efficient technology

To function efficiently, a smart meter must reliably send data back to the server, and information technology (IT) systems should be able to pull these data out and process them.

"The trickiest part is communication between the meter and the control centre; that is the challenge," Reji Pillai, president of the ISGF, told **IndiaSpend**.

Several competing technologies could be used for this communication, including GPRS, which uses a SIM card within the meter to send data to the server and is the one that EESL has chosen for the current procurement exercise. The others are radio frequency mesh (RF mesh) technology, which uses radio waves to communicate among groups of meters that send the data to a data concentrator unit (DCU) for further transmission to the server; and power-line carrier communication, which uses existing power lines to transmit data.

In an RF mesh network, about 200 meters send data to a data concentrator unit, which has a SIM card that sends this data through the telecom network to the server. This unit with a SIM card can be installed in an area with good telecom connectivity, and even optical fibres can be used to transmit data.

In a GPRS-based network, however, every single meter needs a SIM card to communicate with the server. All meters may not be located in areas with reliable, round-the-clock connectivity, leading to patchy data collection. In many cases, meters are installed in basements, where there is no connectivity.

The power line-based technology, on the other hand, enables the grid to transmit data on its own power lines. In practice, however, the network has shown poor results while wireless technologies have become cheaper and more reliable. In Indian conditions, where connections are constantly being added and power lines upgraded, the power line model is not ideal.

The CEA's technical specifications say smart meters can use any of these technologies or their combination.

While EESL has chosen GPRS, private companies are going in for RF mesh, Jayanta Chatterjee, who has worked in managerial capacities at private distribution companies Calcutta Electric Supply Corporation (CESC) and Tata Power Delhi Distribution, told **IndiaSpend**. Tata Power is installing 250,000 meters using RF-mesh technology while CESC is running a large pilot in two localities in Kolkata, with 25,000 meters each, and will also replace 200,000 meters in Kota and 50,000 in Bharatpur with RF mesh-based meters, he said.

For efficient functioning, information from smart meters must be provided to the IT system at frequent intervals, but data transmission with GPRS technology is not fast enough when used for hundreds of thousands of meters, Chatterjee added.

Renewables to account for 40 per cent of India's energy mix by 2030: Power Minister R K Singh

The Economic Times : October 12, 2017

Renewable energy sources – including solar and wind power – currently account for around 16.10 per cent of the energy basket.

India's energy consumption is set to double over the next 6-7 years while the share of renewables in the country's energy supply is likely to rise to 40 per cent by 2030, power and renewable energy minister R K Singh said here.



Renewable energy sources – including solar and wind power – currently account for around 16.10 per cent of the energy basket. Speaking at the curtain raiser ceremony of the second edition of the Global Renewable Energy (RE) Investors Meet and Expo (RE-Invest2017), Singh noted that India would continue to grow at a brisk pace and at the same time decrease its carbon footprint.

“India invites all nations to partner in the endeavour to harness clean energy and save the planet. Investing in the renewable energy sector not only helps in reduction of global carbon footprint but also turns out to be more economical,” Singh said. He was speaking at the second edition of the Global Renewable Energy Investors Meet and Expo (RE-Invest 2017).

Also present on the occasion was Ruateki Tekaiara, the minister for infrastructure and sustainable development of the Republic of Kiribati, who signed the framework agreement of the International Solar Alliance (ISA). Kiribati became the 41st country to sign the agreement.

India will also host RE-Invest 2017 between 7 December and 9 December 2017 with France as the partner country for the event. Secretary of Ministry of New and Renewable Energy (MNRE) Anand Kumar, who was also present on the occasion, informed that event will be inaugurated by Prime Minister Narendra Modi.

The event will witness deliberation on strategies for development of renewable energy sources and new areas of interest for foreign investors including electric mobility, electricity storage solutions and green energy corridors. The event will be attended by the heads of international agencies including the International Energy Agency (IEA), International Renewable Energy Agency (IRENA) apart from multilateral financing institutions.

During RE-Invest 2017, the government will review the commitments made in RE-Invest 2015 by the industry, banks and manufacturers. The industry had committed 293 Gigawatt of renewables in 2015 and against this, 39.3 GW capacity is commissioned or is under implementation, according to MNRE.

Speaking at the same event, French Ambassador Alexandre Ziegler said French companies are eager to invest in the Indian RE sector. “ISA has been conceived as an action-oriented organization and it brings together countries with rich solar potential to aggregate demand for solar energy globally, thereby reducing prices, facilitating the deployment of existing solar technologies at scale, and promoting collaborative solar R&D and capacity,” he said.

ISA’s Interim Director General Upendra Tripathi was also present on the occasion. He informed ISA Agreement has so far been signed by 40 countries and 10 of them have deposited instruments of ratification while five more countries have confirmed ratification.

Like solar, wind power is now cheaper than coal-based electricity in India

After a steep fall in solar power prices in India, it is now the turn of wind energy.

During an auction conducted last week by the state-run Solar Energy Corporation of India (SECI) for 1,000 megawatts (MW) of wind power installations, tariffs fell to a new low of Rs2.64 per unit, down 24% from even the previous low of Rs3.46. The prices are now competitive with the solar energy segment which hit a record-low of Rs2.44 per unit in May, also during auctions conducted by SECI. Renewable energy in India is now cheaper than coal-based power, which costs around Rs3.20 per unit.

Earlier this year, the Narendra Modi government had amended the method to determine wind energy tariffs, allowing the market to fix prices rather than having a regulator do it. This new system has led to a slide in prices. “The main reason is simply increased competition,” renewable energy consultancy Bridge to India (BTI) said in a note referring to the price wars.



This tariff crash comes at a time when India's wind energy sector is already in the doldrums.

Following the introduction of the new tariff-determination system, the central and state governments—at least until last week—hadn't conducted any wind farm auctions, leaving companies without a pipeline of projects to work on. Energy distribution firms have also wanted to pull out of previously-signed power purchase agreements (PPAs), instead pressuring power firms to sell at the newly-discovered low rates for renewable energy. As a result, the sector has seen a sharp fall in new capacity additions in 2017 compared to the previous year.

The slowdown has also driven down wind turbine costs and lowered the expectations of return on investments, resulting in tariff reduction, Sunil Jain, CEO of Hero Future Energies, told Quartz. Based in New Delhi, Jain's wind farm company has around 500MW of installed capacity. The availability of more efficient and advanced wind turbines has also helped, Jain added.

While falling tariffs make renewable power more attractive to consumers, it creates risks for investors and lenders, BTI said. Energy distribution companies, which have already signed PPAs at higher rates, will also take a hit. "We believe that the new wind tariffs are too aggressive," BTI said.

"The viability of these projects would depend on the project execution capability of the firms involved," CARE Ratings said in a note. "This includes land acquisition to set up projects in areas with grid connectivity."

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