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Tamil Nadu leads country with highest energy surplus

Deccan Chronicle: June 9, 2016

Tamil Nadu has not only transformed itself from a power deficit to surplus position but also emerged as the state with largest energy surplus of 11,649 million units in 2016-17 in the country.

As against the state's estimated energy requirement of 1,03,808 million units for the year 2016-17, the availability is 1,15,455 MU and hence the surplus will be 11,649 MU, according to the annual Load Generation Balance Report for 2016-17 published by the Central Electricity Authority (CEA) which estimates the anticipated power requirements and availability in the different states and also the demand and supply at peak load levels.

The "power surplus" Tamil Nadu is followed by Maharashtra (11,333 MU), Madhya Pradesh (8,853 MU), Delhi (5,774 MU), Gujarat (4,380 MU), and Karnataka (3,240 MU). In contrast, West Bengal faces the highest energy deficit of 7,257 MU in the country followed by Uttar Pradesh (7,044 MU) Bihar (6,656 MU) and Andhra Pradesh (4,136 MU), as per the report. The state has achieved power surplus status after eight years, says a senior Tangedco official.

The state has attained a surplus status four years after facing a massive deficit of 16,141 MU in 2012-13 when the districts faced a power cut for over 16 hours a day. Tangedco was able to supply power without enforcing scheduled power cuts since 2014 and industries were allowed to consume power without any restrictions since June last year.

"The state was able to achieve this turn around in the power supply position with the commissioning of new power projects and signing of long term and medium term power agreements. We will be able to remain power surplus till 2021 with several thermal power projects are planned to be executed," said the official. The annual growth in power requirement ranging from 600 mw to 1000 mw would be easily met, the official added.

With the state becoming power surplus, the government has lifted the ban on private generators including wind farms from selling power outside the state from June 1. "The private generators including wind mills are free to enter into contract with other discoms to sell power," the official said.

The state being a power surplus will have a substantial impact on the pace of industrial development and employment generation.

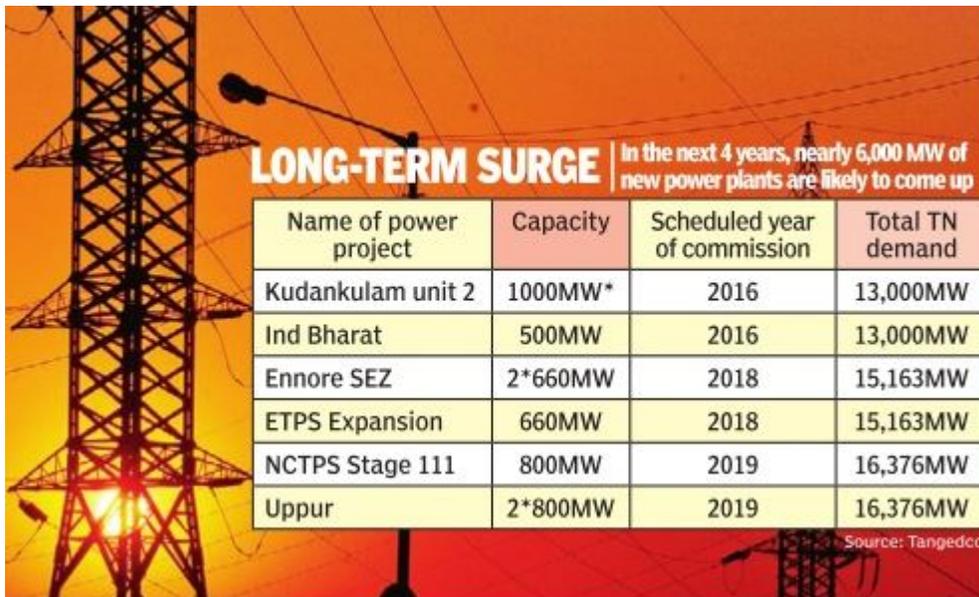
"Surplus power situation will naturally help the industrial growth," Tamil Nadu Electricity Consumers' Association president S. Dinakaran told DC. He said that power issue has been sorted out but other issues still remains.

No scheduled power cuts until 2021: Tamil Nadu power managers

Times of India: June 6, 2016

Eight years after scheduled power cuts were introduced, the state has reached a power surplus situation. Due to this the government has lifted Section 11 of the Electricity Act that bans private generating companies from selling power outside the state. The state had often invoked Section 11 to disallow generators, especially windfarm owners, from selling power outside the state though TNEB wasn't evacuating their power fully.

But the question many observers ask is if the surplus is just seasonal and brought on by wind power. For their part, Tangedco officials are confident of maintaining the surplus position throughout this year and also managing the 2017 summer without any power cuts. They are banking on the startup of Kudankulam Unit 2 and another long-term private power plant next year producing a total of 1,000MW for the state to take care of the 8% in demand growth in 2017. Demand growth in 2017.



LONG-TERM SURGE | In the next 4 years, nearly 6,000 MW of new power plants are likely to come up

Name of power project	Capacity	Scheduled year of commission	Total TN demand
Kudankulam unit 2	1000MW*	2016	13,000MW
Ind Bharat	500MW	2016	13,000MW
Ennore SEZ	2*660MW	2018	15,163MW
ETPS Expansion	660MW	2018	15,163MW
NCTPS Stage 111	800MW	2019	16,376MW
Uppur	2*800MW	2019	16,376MW

Source: Tangedco

Since 2014, Tangedco has been able to meet the total demand and has been successful in crossing two summers without scheduled power cuts. This year, since February, Tangedco has been meeting a new peak demand. On April 29, a new high of 15,343MW was met. "Between 2017 and 2021 too, more projects, both conventional and non-conventional (renewable), are to be commissioned to take care of the year-over-year demand increase," a senior TNEB official told TOI.

Some independent power experts say the power surplus situation in Tamil Nadu is here to stay. "It is a positive development that Tamil Nadu is now power surplus. The demand varies between states and even within states depending on the weather condition. But if a state has attained overall surplus, it is a positive situation," said former Union power secretary R V Shahi.

Unlike a few years ago, all states are now inter-connected and it is easy to transmit power from surplus regions to deficit regions. The national grid which was commissioned in December 2014 has connected southern states with the rest of the country. Therefore many states don't face shortage and Tamil Nadu is among the latest to have surplus power, he said.

A worrying factor is that power projects have rarely started generating power as per schedule, and delays could turn the state's power clock back. Tangedco has several thermal and hydro projects in the pipeline which are to be commissioned from 2018. Work on some projects has commenced but some are stuck in the courts. "Work has commenced on two units of 660MW each at the Ennore Special Economic Zone. Work has also commenced in the North Chennai Stage III with a capacity of 800MW and at Uppur in Ramanathapuram district with two units of 800MW each. This must be enough to meet the increasing demand in the future," the official said.



Meanwhile, the power surplus situation has warmed the hearts of industry in the state, especially the small and medium units that depend on the grid. "Since mid-2015 we have been drawing power only from the grid and not operating our generators. The cost of production has come down drastically due to non-use of generators. We only want the quality of power to improve. The government must take steps to fund Tangedco to improve the transmission infrastructure to prevent load fluctuations," said the owner of a prominent Coimbatore-based textile unit.

Tamil Nadu is no longer power deficit, turns largest energy surplus state: Report

International Business Times: June 9, 2016

Tamil Nadu, which witnessed severe power shortage for many years, is now power surplus. Home to many automobile companies such as Renault India, Ashok Leyland, Royal Enfield and Ford Motors, the state is also the largest energy surplus in India, ahead of Maharashtra, Madhya Pradesh and Delhi.

The state will remain power surplus for four more years. The gap between estimated demand of 1,03,808 million units (MUs) and availability of 1,15,455 MUs will leave a surplus of 11,649 MUs, according to the Central Electricity Authority (CEA), the Deccan Chronicle reported.

The situation is a marked improvement from 2012-13 when the state faced a deficit of 16,141 MUs, forcing the Tamil Nadu electricity companies to resort to long power cuts, sometimes lasting for 16 hours a day.

The gap puts Tamil Nadu ahead of other power-surplus states Maharashtra (11,333 MUs), Madhya Pradesh (8,853 MUs), Delhi (5,774 MUs), Gujarat (4,380 MUs) and Karnataka (3,240 MU), the daily added, referring to the CEA's Load Generation Balance Report for 2016-17.

"The state was able to achieve this turn around in the power supply position with the commissioning of new power projects and signing of long term and medium term power agreements," DC quoted a senior Tamil Nadu Generation and Distribution Corporation Limited official as saying.

"We will be able to remain power surplus till 2021 with several thermal power projects are planned to be executed," he added.

The power-surplus situation is set to spur industrial growth in the state that saw the ruling AIADMK retaining for a second term in the recently-held assembly elections.

"Surplus power situation will naturally help the industrial growth," Tamil Nadu Electricity Consumers' Association president S. Dinakaran told Deccan Chronicle.

An update by the CEA in February this year put the power deficit in Tamil Nadu at 0.6 percent as against 1.7 percent for the period April 2015 to February 2016.

Karnataka had the highest deficit status at 5.4 percent.

Capacity for renewable energy in India hits 42,850 mw; surpasses capacity of hydel projects

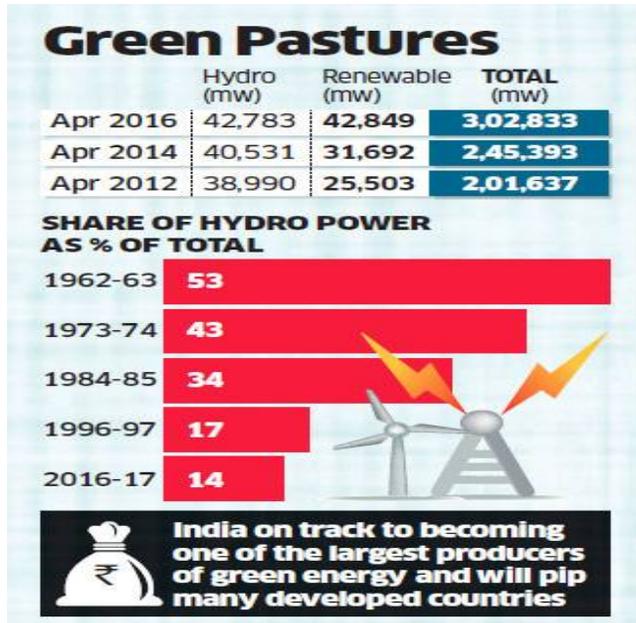
The Economic Times: June 10, 2016

India's quest for green energy has crossed a major milestone, with renewable plants, mainly wind and solar, surpassing the capacity of large hydroelectricity projects, which were once the country's biggest source of electricity and regarded as "temples of modern India".

The total capacity of renewable energy projects expanded to 42,850 megawatts, overtaking

hydropower that stood at 42,783 mw, out of the country's total capacity of about 3 lakh mw on April 30, as per the latest assessment of the Central Electricity Authority. However, the country still depends primarily on thermal power, which has a much higher installed capacity.

Supply from renewable plants depends on sunshine or wind, which are not consistently available. Nevertheless, officials said the surge in renewable capacity marks a significant structural change in the energy landscape of India, which has emerged as the world's fastest-growing renewable energy market that has companies from Finland and South Africa participating in auctions for solar-powered projects.



Power, Coal and Renewable Energy Minister Piyush Goyal has set a Rs 6-lakh-crore target of building renewable energy plants. This includes 1lakh mw of solar power capacity by 2022, five times the earlier target of adding 20,000 mw. "Initially, the target looked very ambitious, but it now looks achievable," a government official said. In international climate talks, the government had stated that India will achieve 40% cumulative electric power capacity from non-fossil fuel-based energy resources by 2030 with the help of transfer of technology and lowcost international finance, including from Green Climate Fund.

Officials said India is on track to becoming one of the world's largest producers of green energy and will surpass many developed countries in this endeavour. Prime Minister Narendra Modi highlighted India's green energy ambition during his address to the US Congress on Wednesday. Analysts said apart from Goyal's thrust on renewables, environmental issues and protests over displacement and rehabilitation had jammed hydropower development.

India lost almost 7 billion units of electricity due to water shortages this year, says report

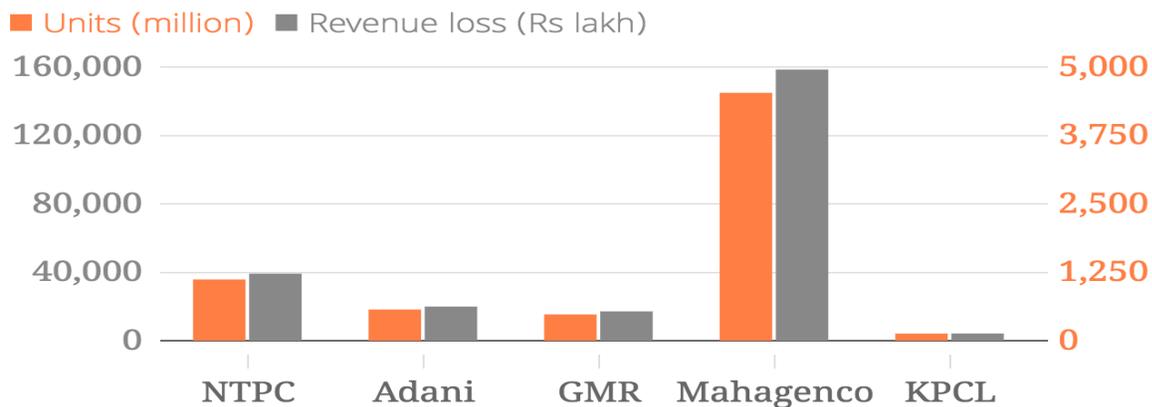
Scroll.in: June 10, 2016

Lack of cooling water forced the shut downs of coal plants and cost power companies RS 2,400 crore, according to a Greenpeace report.

Over the first five months of this year and amidst one of the worst droughts in India in recent decades, India lost almost 7 billion units of power, according to a new Greenpeace report [PDF]. A lack of cooling water for coal-based power plants in Karnataka, Maharashtra and West Bengal led to repeated shut downs and cut electricity generation. Not only do the shutdowns raise the spectre of another power shock like in the summer of 2012, but also to large financial losses.

Greenpeace estimates that power plants like the National Thermal Power Corporation at Farraka, Adani Power at Tiroda, GMR at Warora, Mahagenco at Parli and the Karnataka Power Corporation at Raichur have been the worst affected, losing about Rs 2,400 crore in revenues due to the shut downs. Investment advisory firm Equitorials, which reviewed Greenpeace’s analysis says the environmental group has been conservative in its estimation of the losses by assuming that the power companies charge a tariff of Rs 3.5 per kilowatt per hour.

Losses from five coal-based power plants



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Data: Greenpeace

For period between January 1, 2016 and May 21, 2016.

On the last two days of July 2012, electricity blackouts in north and eastern India affected 620 million people or half of India’s population. In the intense summer that year, hydroelectric capacity was strained as rivers dried up but power usage surged to run everything longer – from air conditioners to irrigation pumps. The problem was compounded by the late arrival of the monsoons till finally the northern grid collapsed.

The Greenpeace report analyses how the same environmental factors are putting coal power at risk as well.

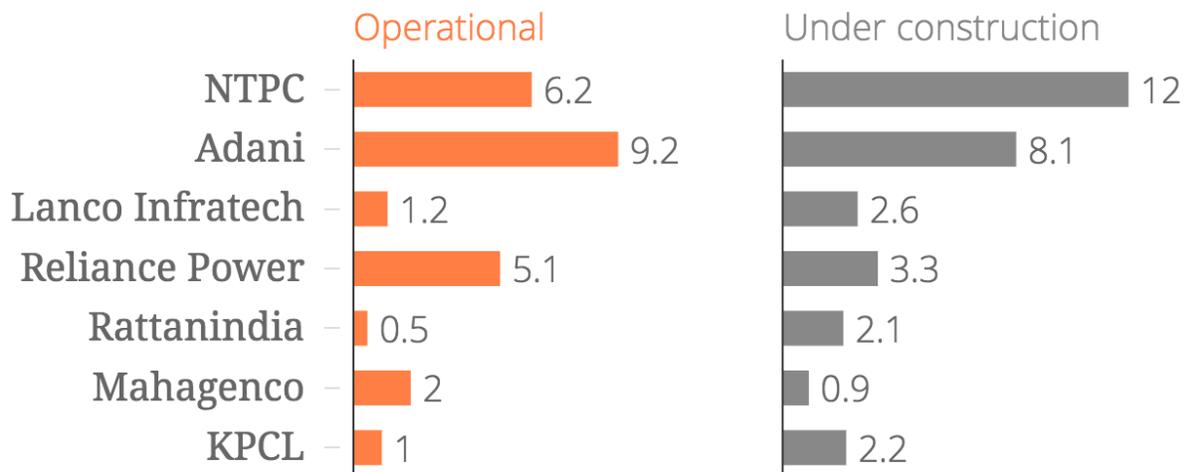
Monsoon failures in successive years have caused severe water shortages in 19 states of India this year that have affected 330 million people, according to official estimates. In this situation, the coal plant conundrum cuts both ways. Coal generation is water intensive, with the sector consuming about 4.6 billion cubic meters every year – an amount that would fulfill the basic needs of 251 billion Indians, says Greenpeace.

“Because power plants are seen as an economically important activity they will continue to get water, while others don’t and you will see people suffering the consequences at a local level,” said Sripad Dharmadhikary, founder of the resources advocacy organisation Manthan Adhyayan Kendra, at a press conference to release the report.

Greenpeace estimates that 24% of the Indian coal power capacity – amounting to 36 gigawatts – is in areas where surface water is over drawn. Another 38 gigawatts of coal capacity is in areas of extremely high water stress. As if this wasn't enough, another 122 gigawatts capacity is being planned for the same areas.

“Both operating power plants and future power plants are in water stressed areas and most of their operating capacity is under risk,” said Jai Krishna, one of the authors of the Greenpeace report. The document was compiled from daily outage reports of the Central electricity Authority and Right to Information replies from National Thermal Power Corporation.

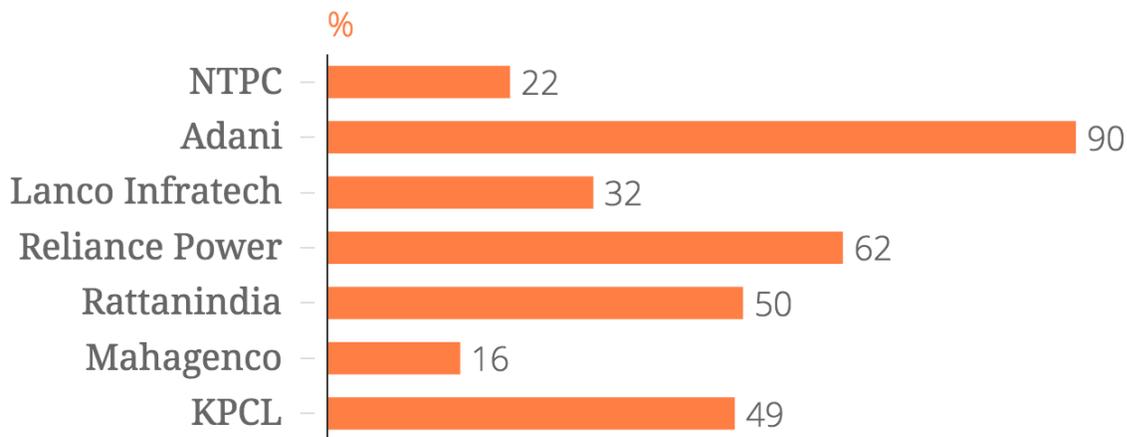
Coal power in high/extremely high water risk areas (in gigawatts)



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Data: Greenpeace

Coal power from water risk areas as percentage of total capacity



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Data: Greenpeace

Coal plants operating, under construction and planned.

According to Dharmadhikary, current siting guidelines for coal plants don't mention water stress or water availability as a criterion. Jai Sharda, an investment advisor and founder of Equatorials, said that the investment community has missed the impact of water availability on power plants that represents a real financial risk.



"Building a coal power plant is a 30-year to 40-year proposition and there is a lot of uncertainty in that," he said. "Time has come to look at water linkages in the same way that we look at coal linkages. Water is more difficult to estimate and is a real tricky risk.

Lots of cheap electricity, few takers, large power cuts; check out why that is

The Financial Express: June 9, 2016

Power minister Piyush Goyal's regular afternoon tweets on power being available in the country's power exchanges at reasonable rates of around R2.5 per unit come as more than a bit of a surprise considering the long power cuts in most areas of the country every day. While it is true the Central Electricity Authority (CEA) took everyone by surprise when it said that India would be power surplus in FY17 with a peak surplus of 3.1%—the east, north-east and north, though, have a deficit—what is not clear is whether Goyal's tweets imply India has licked its power problem or whether they are symptomatic of a deeper malaise. As FE reported on Wednesday, with an average of 1,621 million units of power available on the spot market every month, this can more than cover the deficit of most of the big states. Uttar Pradesh, which has the largest deficit of 846 million units per month just buys 22 million units per month. Karnataka, with a 239 million unit shortage purchases a mere 5 million units; Rajasthan with a 27 million unit shortage buys just 3 million units. It is only Bihar which has a shortage of 21 million units that buys 309 million units from various power exchanges.

While the improved coal situation—local production, which is far cheaper than imports, was up 42 million tonnes, to 536 million tonnes in FY16—has played a big role in electricity availability rising, the collapse of industrial demand is probably a bigger factor. The larger reason, though, is a near complete mismatch between demand and supply creation. Buoyed by the growth of earlier years, generating capacity has increased 105% between FY09 and FY16 while demand has risen just 39%—to that extent, even increased industrial demand may not reverse the power surplus situation, more so if there is more gas available for power plants; indeed, the reason why spot power is priced so low is that generating firms are desperate to sell so that at least part of the capex can be amortised.

Despite this, the main reason why state electricity boards (SEBs) do not buy much spot electricity is that it is just not viable to do so. For one, most have expensive PPAs already tied up, so the actual cost of buying spot power is not the R2.3-2.5 that Goyal tweets about, but has to include the capital charge that will have to be paid to generating companies being asked to back down. In many areas, there is a shortage of adequate transmission and distribution capacity, so while it is profitable to buy spot power and supply it to customers, the grid simply cannot handle it—this is where Goyal's Deendayal Upadhyaya Gram Jyoti Yojana and Integrated Power Development scheme comes in, but it will take at least a few years for it to be fully rolled out. While the UDAY scheme has played a big role in reducing SEB debt, in cases like Uttar Pradesh, there are still huge outstandings to suppliers which makes further borrowing to buy spot power difficult. By far the biggest reason, though, is that with 40-50% power theft levels, the real cost of the spot power works out to around R5 per unit, a rate which is much higher than that paid for by a very large proportion of customers—in which case, SEBs are being rational in preferring to restrict supplies instead of just generating more losses. Piyush Goyal would do well not to declare victory till UDAY actually fixes these issues—right now, the only progress to report is that banks have been arm-twisted into taking a 5-6 percentage point hit on SEB loans.

States with large power deficits not buying cheap spot power, here's why

The Financial Express: June 9, 2016



States with large power deficits have refrained from tapping the fledgling market for spot power, even as electricity is available at much cheaper rates there, than under long-term power purchase agreements (PPAs). While the stressed finances of the state electricity boards (SEBs) is one reason for this, paucity of distribution infrastructure and in some cases sheer unwillingness to try a new mode of purchase also circumscribed the growth of the spot market.

Given high levels of pilferage that still exist in many states, the more power they buy and sell, the higher the losses they could potentially make. The possibility of bigger losses persists in the case of many SEBs, despite spot-market power being up to 50% cheaper than that procured under PPAs.

For instance, Uttar Pradesh, facing the country's highest power deficit with an average monthly deficit of a tenth of its demand or 846 million units (mu), bought just 22 mu per month of power from the spot market during 2016. The availability of spot power at R2.53 per unit (versus R5 a unit the state under recent PPAs) hasn't encouraged the state to tap the spot market more aggressively, leaving even many cities bereft of power for several hours a day in peak summer. The state SEB, it may be noted, report aggregate technical and commercial losses of over 40%.

"The state of Uttar Pradesh has inexplicably been very tardy in utilising the opportunity presented by the exchanges. This could be for variety of reason including financial distress and lack of distribution network in power starved areas," industry sources told FE.

Trading of spot power on the exchanges began in 2008, but even now, only 3% of the electricity produced in the country is traded on this platform.

Karnataka, another state with a high power deficit (drought has hit its hydro power plants) too buys just 5 mu of power a month via exchanges even as its average deficit is 239 mu per month. However, Bihar seems to have taken a liking for spot power as it bought an average of 309 mu a month since January against a monthly deficit of just 21 mu. States like Bihar find it remunerative to pay the mandatory capacity charges to PPA sellers and buy cheaper power from the spot market. Madhya Pradesh, Gujarat and Punjab also have availed themselves of spot power trading facilities on the IEX despite declaring zero deficit in the January-May period.

As FE had reported earlier, the UP electricity regulator had persistently asked the SEB to explain why it wasn't buying cheaper power from the exchanges to bridge the energy deficit. After the SEB officials failed to turn up for the commission's hearings, the regulator invoked penal provisions against them.

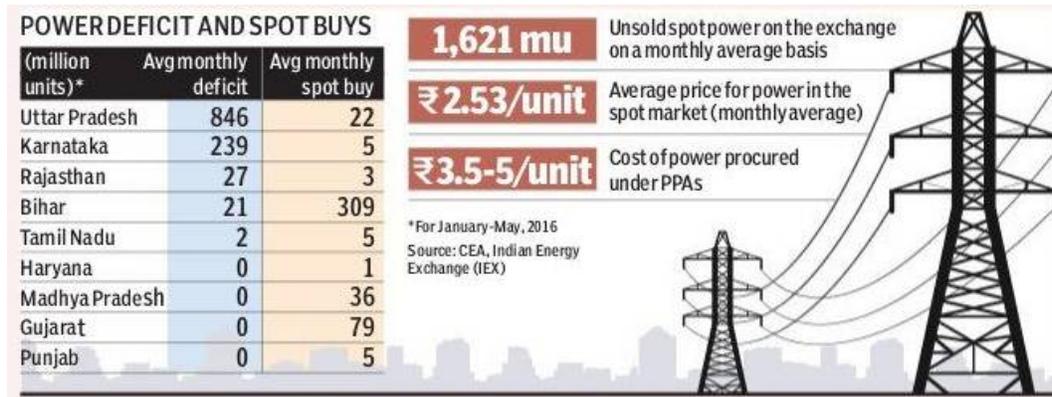
According to Praveer Sinha, CEO, Tata Power Delhi Distribution, many discoms would want to buy power from the spot market but are locked into in long-term PPAs. He added that discoms should be allowed to opt out of an expensive PPA if the plant's capital cost has been recovered.

Rajesh Kumar Mediratta, director of business development at IEX, is of the opinion that the technical arm of the power ministry's central electricity authority should abolish "deficit" figures and instead call it "unserved demand" as paucity of energy was not always due to lack of generation; instead, it is mostly related to issues at the state level including sub-par transmission, distribution network and unviable subsidy regime. "Focus needs to shift to tackling issues that keep demand unserved," he said.

At the same time, although several states have reported zero deficit in the January-May period, they have been unable to avoid power outages to prominent cities. Earlier this year, the Union power ministry launched a portal called "Vidyut Pravaah" that provides real-time data on availability, price and deficit of energy in each state. The data, sourced primarily

from IEX and regional load despatch centers, was intended to put pressure on states to wipe out deficit through spot purchases. However, this has had only limited impact.

On the portal, the government said: "The shortage figures for the State are as per the information received from the respective States. Only the respective State can state the reason for the same. It may be due to network constraint in the State transmission or distribution network, obligation to supply to a particular group of consumers etc.



Smartphone apps help bring reliable power to 1.3 billion people

Live Mint: June 7, 2016

Smartphone apps, which show untapped power supplies and cheap available electricity, highlight deep flaws in the state-level distribution system

At any given minute in India, you can find out how much electricity is for sale and at what price with a few swipes across a smartphone screen—a level of transparency in the nation's power sector that's increasing the odds of far-reaching change to end blackouts.

The unprecedented instant access, which shows untapped power supplies and comparatively cheap available electricity while millions go without reliable supplies, highlights deep flaws in the state-level distribution system. The picture painted by the data is increasing pressure on local officials to embrace Prime Minister Narendra Modi's plan to fix the woes of indebted state retailers so all of India's 1.3 billion people have access to electricity by 2019.

"There is no escape route for states any more," said S.K. Agarwal, a member of Uttar Pradesh electricity regulatory commission. "And that's a good thing because it forces the distribution companies to become more efficient."

Required to sell power below cost for years, India's cash-strapped power distributors stacked up unpaid loans of almost \$74 billion as of September. The losses have eroded their ability to purchase enough power to meet demands of customers and invest in infrastructure to support new connections and increase efficiency.

Transforming those distributors, operated by India's states, to run more efficiently and ensure they have funds to purchase greater supplies is key to Modi's promise of lighting up the \$2 trillion economy. Eighteen of India's 29 states, and one of its union territories, has agreed to join Modi's debt plan for the state power distributors, according to a tally by the central government as of 20 May.

India failed to achieve a sustainable turnaround of the state utilities through at least two previous reform plans, which focused on financial bailouts while doing little to push the states or their utilities to improve efficiency.

Proponents of Modi's plan say Vidyut Pravah, the smartphone app that updates every 15 minutes with regional power availability, shortages and prices, holds distributors



accountable and improves the odds they'll see through their side of the restructuring bargain.

"There is tremendous pressure on us to perform, to be able to meet the targets set by the central government," said D.K. Sharma, a director at Ajmer Vidyut Vitran Nigam Ltd., a power distributor in the northern state of Rajasthan, which is ruled by Modi's Bharatiya Janata Party (BJP). "We're trying to ensure that every unit of electricity we supply is metered."

Rajasthan's three distribution companies had a combined Rs.85,000 crore of debt as of last year, the most among all states in India. Under the debt recast plan, the local government has taken over Rs.60,000 crore of loans, leaving distributors with debt of Rs.25,000 crore, according to Sharma.

"The central government's efforts to take India towards self-sufficiency in power are trickling down to the states," said Chandrajit Banerjee, director general at New Delhi-based Confederation of Indian Industry, a lobby group. "States realize if they don't do their bit, they would be left behind."

The central government's debt recast plan has increased demand for electricity from the distribution companies, according to Gurdeep Singh, chairman of state-run generator NTPC Ltd., the country's biggest power producer.

Buying more

"Some of the distribution companies who were finding it difficult to buy power are now buying more," Singh told reporters in New Delhi on Monday. "The plan has reduced the cost of funding, giving the elbow room to absorb more power."

The electricity deficit in Uttar Pradesh has nearly halved over the past year to 6.4% in April, even as demand rose. The state has taken on Rs.40,000 crore of debt held by distribution utilities, leading to monthly savings of Rs.400 crore on interest payments and spurring higher power purchases and distribution, according to the regulatory commission's Agarwal.

Modi's administration has linked 8,095 villages to power transmission lines as of Monday, and seeks to bring reliable supplies to about 9,900 more, according to Grameen Vidyutikaran, a separate app set up by his government. After promising 24x7 electricity and economic development to win a record political mandate in 2014, failure could damage his party's chances in the next elections.

"We want to put everything out in the open for the people to see," Power Minister Piyush Goyal said at a press briefing last month

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