



# TECA – NEWS CLIPPING

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

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## **Crisil lowers rating of bond schemes of TN power firms**

The Hindu : December 12, 2016

Ratings firm Crisil has revised its rating outlook on bond programmes of Tamil Nadu government's power firms to negative from stable, citing increasing pressure on state finances due to the widening revenue deficit.

The Tamil Nadu Electricity Board (TNEB) and the Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO) receive major financial support from the Tamil Nadu government. The State has been hit by lower tax collections over the last four years.

The State's own taxes as a percentage of gross state domestic product (GSDP) declined to 7.9 per cent in fiscal 2016 from 8.7 per cent in fiscal 2014, mainly on account of the fall in crude oil prices, which impacted value-added tax (VAT) collections from petroleum products, according to Crisil.

The firm also expects tax collections in fiscal 2017 to be marginally impacted by the move towards closure of several TASMAL liquor shops. "Stickiness in committed expenditure and continuing high subsidy support, including to TANGEDCO, in the absence of regular tariff hikes, free power up to 100 units and other such measures would put pressure on revenue deficit," it said. Revenue deficit/revenue receipts ratio for Tamil Nadu has increased to over 10 per cent in fiscal 2017 from 1.7 per cent in fiscal 2014, due to subdued own-tax collections and high subsidy outflows.

### **Gross fiscal deficit**

The widening revenue deficit has impacted the government's gross fiscal deficit, which is at 2.8 per cent of the Gross State Domestic Product in fiscal 2016. The gross fiscal deficit is close to the limit prescribed in the Fiscal Responsibility and Budget Management limit of 3 per cent. Crisil points out that further widening of fiscal deficit would limit the state's borrowing flexibility. "The fiscal position over the medium term will also remain contingent upon potential implementation of pay revisions under the recommendations of the state's pay commission and impact on own tax collections under the Goods & Services (GST) regime." The firm reaffirmed the ratings of the bond programmes of TNEB and TANGEDCO at A(SO).

"The rating continues to reflect the benefits the Tamil Nadu government derives from its favourable Gross State Domestic Product composition and superior socio-economic indicators. These strengths are partially offset by sizeable committed expenditure and an average fiscal position," it said.

## **Tamil Nadu's tryst with imported coal ends on happy note**

Times of India : December 9, 2016

Tamil Nadu Generation and Distribution Corporation (Tangedco), a subsidiary of Tamil Nadu Electricity Board (TNEB) has signed an MoU with Singareni Coal Mines to procure high grade coal for its thermal units. The first set of consignment reached Mettur Thermal Station recently. The MoU marks the beginning of the import substitution of coal and in another three months, Tangedco plans to put a stop to the total import of coal.

The development also brings down the curtain on the coal import saga in the state in which there were allegations against the late AIADMK chief J Jayalalithaa during her first regime (between 1991-96). She was eventually acquitted in the case by the Supreme Court. Import substitution



will also help Tangedco save not less than `400 to `500 crore and with this, the company may even break even or show a minimum profit at the end of this financial year.

"We signed an MoU with Singareni Coal Mines for the supply of high grade coal to the extent of 1 million tonne. The first consignment from Singareni reached Mettur Thermal Plant directly by rail. This quantum of supply from Singareni will continue for the current financial year. For the next fiscal year, we will require a coal supply between 3 or 5 million tonnes, depending upon the demand," a senior Tangedco official told TOI.

TNEB and its holding company, Tangedco started importing coal on a regular basis from 2004-05. "Tangedco requires about 26 million tonnes of coal for full capacity generation of power by the North Chennai, Mettur, Ennore and Tuticorin thermal units. Out of the total requirement, about 20.445 million tonnes is met by indigenous coal and the balance 5.50 million tonnes is being imported," said a Tangedco coal wing official.

The imports started at 1 million tonne but as the demand for power increased and more thermal units were commissioned, the amount of coal imports also escalated. "We started importing coal after the Centre in its order on March 29, 2004 advised states to go for import to feed its thermal units due to a shortage of indigenous coal," said the official.

But on September 28, 2016, Coal India Limited requested Tamil Nadu government to advise Tangedco to stop importing coal and substitute it with indigenous coal available from CIL. "Following this the Union ministry of coal convened a meeting in New Delhi on September 30, where CIL in principle agreed to provide additional 5 million tonnes to Tangedco whenever it needs the entire quantity," the official added.

Tangedco was importing coal mostly from Indonesia and occasionally from China, Russia and South Africa. "The imported coal is downloaded either at Ennore Port or at Tuticorin Port and all thermal units, except the Ennore Thermal Plant, uses imported coal. The imported coal is of high calorific value and it reduces damage or frequent tripping of our units both with low and high capacity," the official said.

But, coal from Singareni has an equally high quality as the imported coal and is available at a lower price too. "At present we are paying \$60 per tonne but from February next year, the price will be \$90 per tonne. In this case, it is advantageous for us to use indigenous coal," he added.

#### **Incentive for wind power needs to be revisited: Study The Hindu : December 5, 2016**

The reluctance of distribution companies (Discoms) to procure wind energy due to their weak financial health is one of the biggest challenges facing the wind energy sector and there is now a need to shift from Generation-Based Incentives (GBI) to Procurement-Based Incentives (PBI) in the country, according to an evaluation of the GBI scheme done by CRISIL.

The GBI scheme was introduced by the Ministry of New and Renewable Energy (MNRE) in December 2009 to provide a "level playing field to Independent Power Producers (IPPs), and to promote increased generation and efficiency in installation," according to the report by CRISIL.

The scheme was discontinued in March 2013. However, the government reintroduced it in Sept 2013 retrospectively. With the scheme set to end in March 2017, the Ministry has sought feedback on it.

Under the second phase of the scheme, the GBI provided to wind power producers is Re. 0.50 per unit of electricity that is fed into the grid, for a period of four years, and a maximum of 10 years. The GBI has a cap of Rs. 1 crore per MW.

## WINDS OF CHANGE

➔ Wind energy is the fastest growing renewable energy source in India at about 28 GW

➔ Wind makes up about 61% of total installed renewable power capacity in India

➔ The Ministry of New and Renewable Energy introduced the Generation Based Incentive (GBI) scheme in 2009. It was withdrawn in March 2013

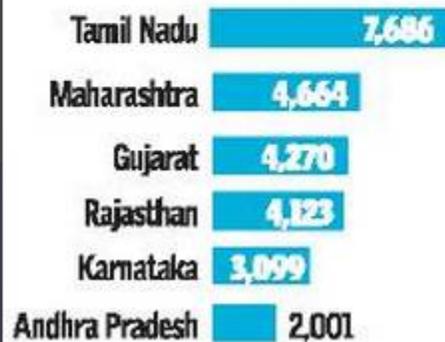
➔ The government reintroduced the scheme on Sept. 4, 2013, retrospectively. The scheme is valid till March 2017

### Capacity added under GBI - II

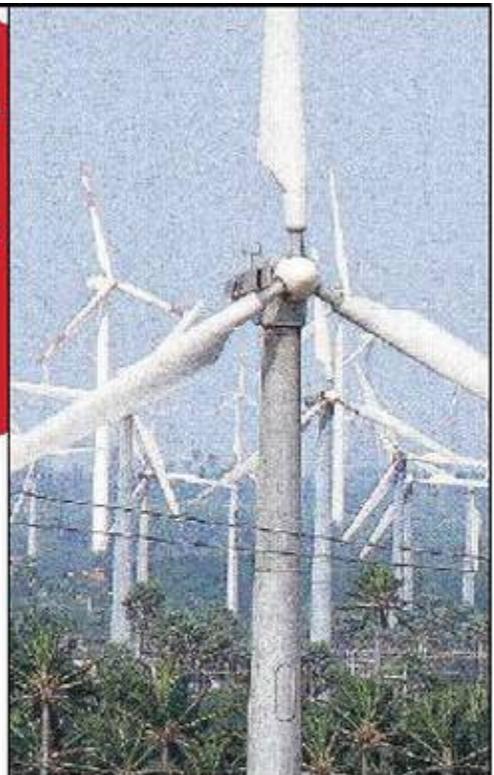
- Targeted capacity addition – 15,000 MW
- Actual Addition – 5,762 MW

### Wind Power Installed Capacity

(in MW) As of Nov. 30, 2016



Source: MNRE/Crisil



**CHOPPY WEATHER:** The study says many distribution companies are reluctant to procure wind energy given their precarious financial position

While India ranks fourth behind China, the US and Germany in terms of total installed wind power capacity, within India, Tamil Nadu had the highest installed capacity at 7,686 MW out of a gross estimated potential of 33,800 MW, followed by Rajasthan, Madhya Pradesh and Maharashtra.

The study found that various wind power developers and investors had highlighted that “the GBI level of Re. 0.50 per unit is insufficient to promote wind capacity addition in Tamil Nadu, Gujarat and Karnataka due to unviability of FIT (feed-in-tariff) plus GBI model.

The study also found that the capacity addition under the GBI second phase was “modest”. In the second phase, while the capacity addition target was 15,000 MW, only 5,762 MW has been added. However, the study found that GBI remained “one of the key incentives that has driven investments in the sector especially from number of IPPs who are not availing Accelerated Depreciation (AD) benefit but doing project finance.”

“The overall objective behind the GBI scheme, i.e., providing incentive equivalent to that of AD, and thus to provide a level playing field between various classes of investors, has been appreciated. This gets reflected in the fact that the GBI scheme has been helpful in securing investments from IPPs and FDIs to the tune of 7,993 MW out of total new installed capacity addition of 14,939 MW – close to 54 per cent. This has resulted in increasing the share of GBI-based projects to about 30 per cent of total wind installed capacity in India,” CRISIL observed.

According to the study, investors in Tamil Nadu and Karnataka preferred options other than GBI, such as group captive, captive and third-party models that offered better returns and financial viability of a project.



CRISIL has recommended that suitable mechanisms need to be developed to use GBI “to encourage Discoms to procure wind power, make timely payments and also prevent forced backing down of wind power.” It also recommended a suitable performance-based incentive be developed to reduce purchase cost of wind power by States.

## **India does not need more coal-based capacity addition till 2022: Central Electricity Authority**

Business Standard: December 13, 2016

Reduced demand projection is based on the past record of slow industrial growth, say Officials

Indicating a significant shift in the Indian power sector, the Central Electricity Authority (CEA) has, in its National Electricity Plan (2017-2022), said the country does not need any more coal-based capacity addition till 2022. CEA said India would add massive renewable-based capacity.

CEA in its draft plan has also mentioned adequate coal is expected to be available for the coal-based power plants during 2021-22 and 2026-27. The draft is open for comments from all stakeholders till January 2017. CEA is the apex technical authority for the power sector.

The NEP acts as a guideline for policy-making in the sector. CEA has also said that the renewable energy generation will contribute about 20.3 per cent and 24.2 per cent of the total energy requirement in 2021-22 and 2026-27, respectively.

As most of the coal-based capacity is being built by the private sector, investments are likely to be hit. At the same time, the 4,000 Mw Ultra Mega Power Plants (UMPPs) would also be not needed if the CEA projections are adhered to by the government.

“The government has recently said that it wishes to increase the per capita electricity consumption to 1,200 units per person. Such projections reflect that the economy would not grow in double digits, as estimated by the current government, and industrial growth would be business as usual or may be muted,” said a senior power sector executive.

About 50,000 Mw is under construction and around 180,000 Mw is running at around 50-60 per cent capacity, which would also kick in, he added. “It is enough to meet the current demand, but if CEA is confident that the situation would not change much, government should take that in cognizance when announcing plans,” said a former power sector official.

*Business Standard* had earlier reported that low gross domestic product growth and stagnant demand is likely to push the ministry of power to pull down the power demand projection to around 235 Gigawatt (Gw) by 2022, from the earlier projection of 289 Gw.

CEA in its draft report said, “In the 12th Plan, likely capacity addition from conventional sources, according to review carried out as on March 2016, will be 101,645 Mw against a target of 88,537 Mw. This is about 115 per cent of the target.”

Of this, 2.56 per cent of the total capacity addition during the 12th plan is expected to come from the private sector.

However, CEA notes, the capacity of 50,025 Mw coal-based power projects is currently under different stages of construction and are likely to yield benefits in 2017-22.

The projected peak demand is 235 Gw and energy requirement is 1,611 BU at the end of 2021-22, which is around 17 per cent and 15.4 per cent lower than the corresponding projections made by the 18th Electric Power Survey (EPS) report.

At the end of 2026-27, the projected peak demand is 317 Gw and energy requirement is 2,132 BU, which is around 20.7 per cent and 21.3 per cent lower than the corresponding projections made by the 18th EPS report.

## SHIFTING GEARS

All figures in Mw

	2016	2022 (Projected)
Coal	186,492.88	236,492.88
Gas	25,057.13	29,557.13
Diesel	918.89	NA
Nuclear	5780	8580
Hydro	43,112.43	58,442.43
RES	45,916.95	2,20,916.95
<b>Total</b>	<b>309,294.28</b>	<b>553,989.39</b>

\*RES= Renewable Energy Sources  
Diesel = diesel gensets/power back-up

### Likely capacity addition from conventional sources during the 12th Plan period

Coal	86,250	
Lignite	1,290	
Gas	6,080	
Hydro	5,525	
Nuclear	2,500	

SOURCE: Central Electricity Authority

Senior power ministry officials said the reduced demand projection is based on the past record of slow industrial growth and their respective power demand, lag in transmission planning and sick health of state owned power distribution companies.

“The projection is based on the estimated GDP growth rate of 8 per cent. Last demand estimate was made in 2013 when it was assumed that demand will touch 199 Gw. It is currently it at 155 Gw,” said the official requesting anonymity

### How clean is solar power?

The Economist : December 10, 2016

THAT solar panels do not emit greenhouse gases such as carbon dioxide when they are generating electricity is without question. This is why they are beloved of many who worry about the climate-altering potential of such gases. Sceptics, though, observe that a lot of energy is needed to make a solar panel in the first place. In particular, melting and purifying the silicon that these panels employ to capture and transduce sunlight needs a lot of heat. Silicon’s melting point, 1,414°C, is only 124°C less than that of iron.

Silicon is melted in electric furnaces and, at the moment, most electricity is produced by burning fossil fuels. That does emit carbon dioxide. So, when a new solar panel is put to work it starts with a “carbon debt” that, from a greenhouse-gas-saving point of view, has to be paid back before that panel becomes part of the solution, rather than part of the problem. Observing this, some sceptics have gone so far as to suggest that if the motive for installing solar panels is environmental (which is often, though not always, the case), they are pretty-much useless.

Wilfried van Sark, of Utrecht University in the Netherlands, and his colleagues have therefore tried to put some numbers into the argument. As they report in *Nature Communications*, they have calculated the energy required to make all of the solar panels installed around the world between 1975 and 2015, and the carbon-dioxide emissions associated with producing that energy. They also looked at the energy these panels have produced since their installation and the corresponding amount of carbon dioxide they have prevented from being spewed into the

atmosphere. Others have done life-cycle assessments for solar power in the past. None, though, has accounted for the fact that the process of making the panels has become more efficient over the course of time. Dr Van Sark's study factors this in.

### **Panel games**

To estimate the number of solar panels installed around the world, Dr Van Sark and his team used data from the International Energy Agency, an autonomous intergovernmental body. They gleaned information on the amount of energy required to make panels from dozens of published studies. Exactly how much carbon dioxide was emitted during the manufacture of a panel will depend on where it was made, as well as when. How much emitted gas it has saved will depend on where it is installed. A panel made in China, for example, costs nearly double the greenhouse-gas emissions of one made in Europe. That is because China relies more on fossil fuels for generating power. Conversely, the environmental benefits of installing solar panels will be greater in China than in Europe, as the clean power they produce replaces electricity that would otherwise be generated largely by burning coal or gas.

Once the team accounted for all this, they found that solar panels made today are responsible, on average, for around 20 grams of carbon dioxide per kilowatt-hour of energy they produce over their lifetime (estimated as 30 years, regardless of when a panel was manufactured). That is down from 400-500 grams in 1975. Likewise, the amount of time needed for a solar panel to produce as much energy as was involved in its creation has fallen from about 20 years to two years or less. As more panels are made, the manufacturing process becomes more efficient. The team found that for every doubling of the world's solar capacity, the energy required to make a panel fell by around 12% and associated carbon-dioxide emissions by 17-24%.

The consequence of all this number-crunching is not as clear-cut as environmentalists might hope. Depending on the numbers fed into the model, global break-even could have come as early as 1997, or might still not have arrived. But if it has not, then under even the most pessimistic assumptions possible it will do so in 2018. After that, solar energy's environmental credentials really will be spotless

**Save Energy. Save Money. Save the Planet**

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