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Can we do without nuclear power in India? - Shankar Sharma, Power Policy Analyst (Part 2)

CEA data reveals that for the year 2014-15 the electrical energy requirement was 1,002,257 MU, whereas the availability was 959,829 MW, which meant a short fall of 4.2%. The contribution of nuclear power during this period was 32,287 MU (3.4% of the total).

With such a low share of electricity produced, how critical has been the nuclear power to our society? Between 2006-07 and 2011-12 the capacity utilisation factor of the nuclear power plants around the country has varied between 50% and 71% of the installed capacity, as per NPCIL website data. RAPS units 1 & 2 have been de-rated to 100 MW and 200 MW respectively as compared to original designed capacity of 220 MW each. Nuclear power authorities had promised a much larger share of nuclear power in the country. Dr. Homi J Bhabha had announced that there would be 8,000 MW of nuclear power in the country by 1980. By 1962, the prediction went upto 20,000 - 25,000 MW by 1987, and by 1969 AEC predicted that by 2000 there would be 43,500 MW of nuclear generating capacity.

The reality has been quite different. Installed nuclear power capacity was only 4,780 MW in February 2014 ([CEA Report 2014](#)). The difficulties faced by the nuclear power sector in meeting its own capacity addition target since independence has to be kept in proper perspective before we plan for additional power plants. There have also been issues with the reliable supply of nuclear fuel. The Integrated Energy Policy (IEP) has estimated that the Uranium reserve in the country can support only about 10,000 MW of nuclear power capacity. If the country were to rely on import of nuclear fuel and technology, the energy security becomes a major issue. The very nature of nuclear power makes it essential to be connected to a larger power network. In the event of power blackouts as happened recently the nuclear power plants have credible chance of being affected adversely, with the possibility of a radiation leakage. A large size nuclear power plant such as the one proposed at Jaitapura (10,000 MW capacity) can even be a cause for a power black out, in the case of major trouble in the plant resulting in tripping of all the generating units in a short span of time.

A Department of Atomic Energy (DAE) document of 2008 is "[A Strategy for the Growth of Electricity in India](#)" which projects nuclear power capacity of 275,000 MW (as compared to 4,780 MW now) by 2050. Assuming an average power capacity of 500 MW each this means about 550 reactors. In view of the need for a large quantity of water to run these plants, it is natural to expect that they are located close to the coast. With the main land coast line of about 6,000 km this works out to approximately 11 km between two reactors. Even assuming that 2 or 4 reactors are placed in a straight line perpendicular to the coast, the distance between two nuclear power plants can only be between 22 to 44 km. Assuming a circular safe zone with a radius of 2 km around each reactor, 550 reactors would require a total of approximately 7,000 Sq. km. Can such a situation be in the interest of a densely populated country?

When we look at the chronic power cuts of about 10-15% faced by our communities, the huge investment that has gone in to nuclear power sector despite which it's share is miniscule, and the huge scope for efficiency improvement feasible within the existing power infrastructure, the true relevance of the nuclear power can become suspect. Although a massive amount of money is reported to have been spent on various activities associated with nuclear power research since independence the contribution of the nuclear power to the total installed power capacity in India as of now is tiny. The massive budgetary support to nuclear power sector since independence if given to efficiency improvement measures and to harness our renewable energy sources, can transform the power sector with many other associated benefits. (contd)

TN Electricity News

TN goes to Court against Tribunal order

Tamil Nadu has petitioned the Supreme Court against last year's order of the Appellate Tribunal for Electricity, which held that the State government could not order specified consumers to buy (expensive) solar power. In October 2012, the Tamil Nadu government announced its 'solar policy', the cornerstone of which was mandating certain consumers to buy solar power. The State electricity regulatory commission, TNERC, formalised the order in March 2013, making it mandatory for the consumers to buy 6 per cent of their electricity consumption from solar power plants (3 per cent in the first year).

The 'Solar Purchase Obligation' (SPD) would create a demand, to meet which solar companies would set up plants in the State. The policy was hailed as one worthy of emulation by other States. The Tamil Nadu Spinning Mills Association (TASMA) went to the Appellate Tribunal for Electricity (APTEL) against the SPD. The Association's members, who collectively own 3,000 MW of wind power capacity in the State, were already producers and consumers of green power. TASMA calculated that due to the SPD, its members would have to spend one rupee more for every unit of electricity consumed.

Solar policy: In January this year, APTEL set aside the Tamil Nadu Solar Policy. The Tribunal said the State government could not impose the 6 per cent purchase obligation as there was already another similar obligation in effect — the 'Renewable Purchase Obligation', under which specified entities in Tamil Nadu were required to purchase 8.75 per cent of their power needs from renewable sources, and an additional 0.25 per cent specifically from 'solar'. The State solar policy also exempted the State-owned electricity generation and distribution entity, Tangedco, from the 'SPD', which APTEL said was discriminatory.

Complications: Tangedco had, in the meantime, tendered for purchase of solar power and was ready to sign power purchase agreements with about 700 MW of to-be-built solar power plants, when the APTEL order stopped the solar fiat in its tracks. The Tamil Nadu government and Tangedco are extremely annoyed with TASMA, industry sources say in private. In this context, the government's refraining from moving the Supreme Court against the Tribunal order surprised many. But the move came last month. On July 30, the apex court condoned the delay in Tangedco's filing of the petition, admitted the case and posted it for hearing on October 17.

Meanwhile, the regulatory commission, TNERC, has floated a consultative paper for raising the solar component of the 'renewable purchase obligation' from 0.25 per cent to 2 per cent — which could support the creation of 1,000 MW of solar capacity in the State. TASMA is against this proposal. India has close to 3,000 MW of solar power capacity. Sunny Tamil Nadu, a leader in wind power with 7,200 MW of capacity of the country's 22,000 MW, is a solar laggard, though. The State, with 100 MW of solar power capacity, ranks sixth, after Gujarat (916 MW), Rajasthan (730 MW), Madhya Pradesh (347 MW), Maharashtra (240 MW) and Andhra Pradesh (131 MW). Other States are catching up — Karnataka has bid out for 500 MW; Uttar Pradesh intends to, for 300 MW. ([Hindu Business Line](#), Aug 17, 2014)

India Electricity News

Strong competition as a reform (Part 1)

Much has been written about the maiden budget of the Narendra Modi government and its lack of a blueprint for economic renewal, thereby missing the opportunity to introduce 1991-like economic reforms. But considerably less attention is being paid on how pro-growth laws/policies are being implemented. Introducing new reforms is not enough if their implementation is not backed by an institutional architecture that supports the larger goal of such reforms. There is, thus, need for Indian economic policymaking to shift from a mere structural to a more behavioural paradigm; where pro-competitive market-reforms are supported with pillars of an institutional framework that facilitate the implementation of such reformist laws/policies. We use India's dysfunctional electricity sector an appropriate case to illustrate our argument.

The Electricity Act, 2003 is one of the few modern pro-competitive legislation on India's statute book. The Act stipulates licence-free thermal generation, non-discriminatory open access of the transmission system, gradual implementation of open access in the distribution system to pave way for the creation of a power market in India and encouragement of private sector participation in generation, transmission and distribution. The reformist provisions of the Act clearly indicate the intention of promoting competition and market-based regime in the electricity sector, yielding efficiency gains and enhancing consumer choice.

Even after a decade of the Act coming into being, India's electricity sector remains untouched by the benefits of dynamic competition and is widely viewed as a constraint to economic growth. India currently experiences a yawning gap of more than 10% between electricity generation and distribution. On average Indians consume a mere 917 kilowatt per hour, as compared with 3,300 in China. The World Bank's Ease of Doing Business index (2014) ranks India at 111 out of 189 countries in challenges faced by new businesses to get a permanent electricity connection. ([Live Mint](#), Aug 24, 2014)

Capacity Addition Targets and Achievements in the 12th Plan (CEA Report, 2014)

(i) Targets

(MW)

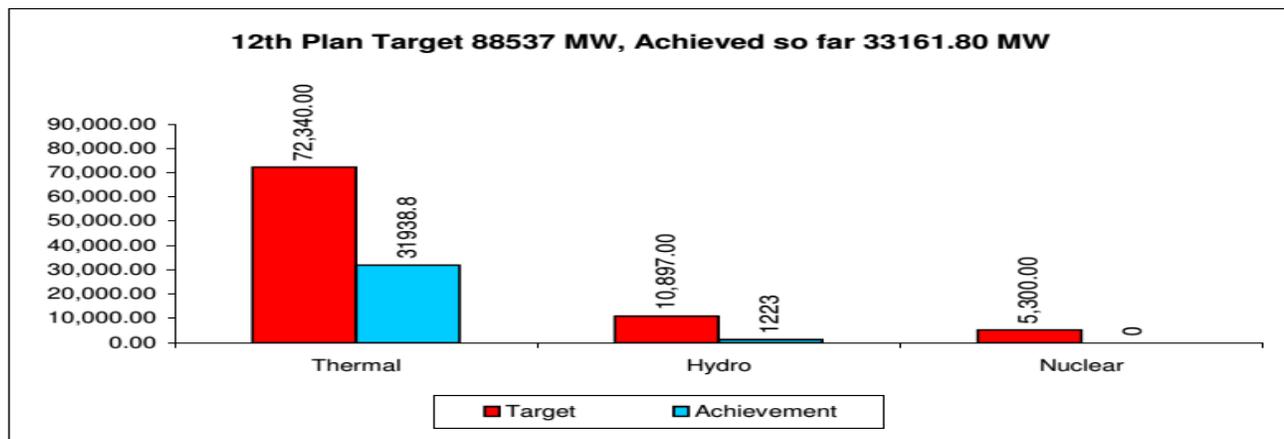
Type/Sector	Central	State	Private	Total
Thermal	14,878.00	13,922.00	43,540.00	72,340.00
Hydro	6,004.00	1,608.00	3,285.00	10,897.00
Nuclear	5,300.00	0.00	0.00	5,300.00
Total	26,182.00	15,530.00	46,825.00	88,537.00

(ii) Achievements upto February 2014 during the 12th Plan

(MW)

Type/Sector	Central	State	Private	Total
Thermal	6,683.30	6,483.00	18,772.50	31,938.80
Hydro	952.00	102.00	169.00	1,223.00
Nuclear	0.00	0.00	0.00	0.00
Total	7,635.30	6,585.00	18,941.50	33,161.80
Achievement %	29.16	42.40	40.45	37.46

Achievement of Capacity Addition during the Current Plan upto February 2014



Consumer Corner

Electricity Consumers - Rights Statement (Maharashtra Distribution Company—MAHADISCOM) (Part—4)

BILLING

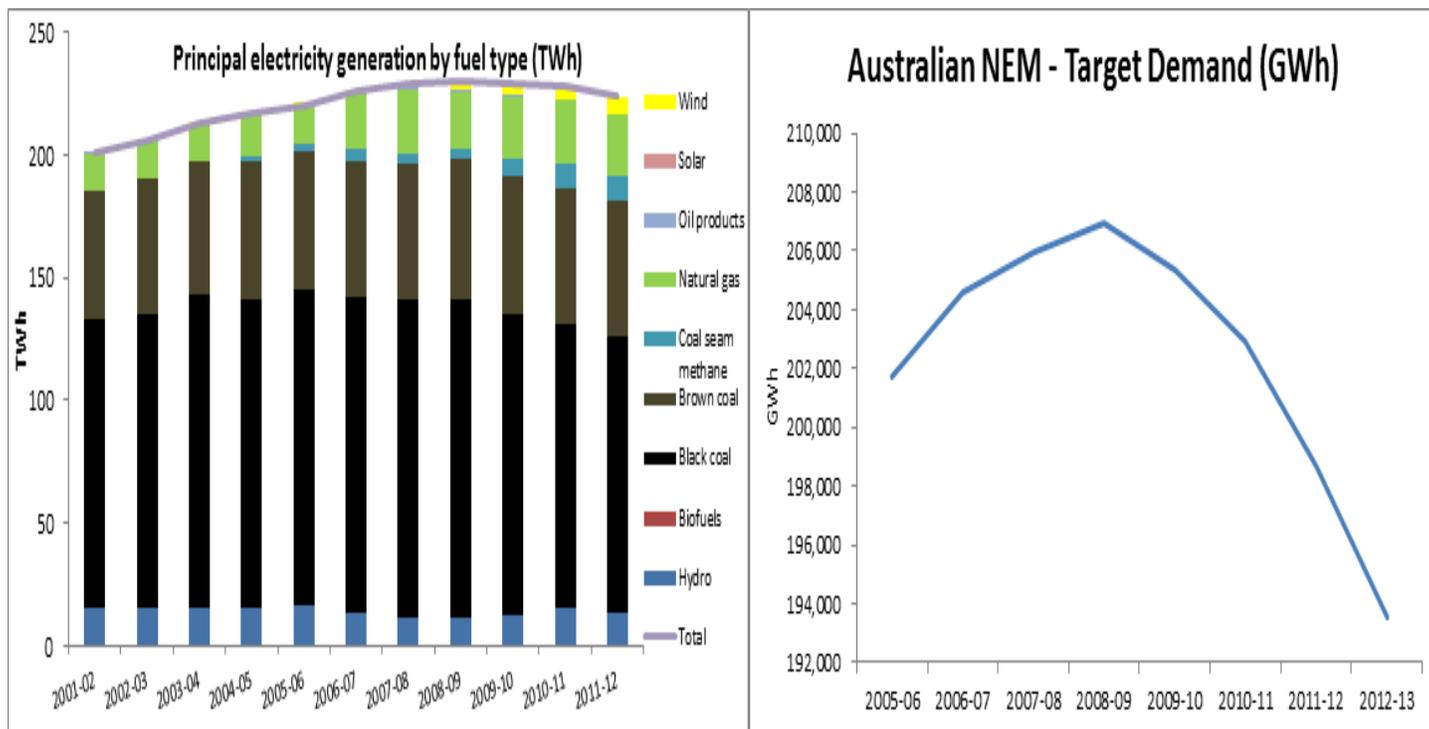
1. Receive bills with such detailed particulars (including due date for payment) as specified in the Electricity Supply Code notified by the MERC at the intervals of at least once in every two months in respect of consumers in town and cities and at least once in three months in respect of all other consumers.
2. A duplicate copy of the bill may also be demanded in case of loss of the original bill and to know the amount of the bill (including due date for payment) on the spot from the office of the electricity distribution company designated for the purpose.
3. Consumers also have the right to report non-receipt or loss of bill over telephone and to request for the amount of the bill (including due date for payment) after providing identity verification.
4. Demand from the electricity distribution company an explanation of the basis of computation of the bill.

RIGHT TO RECEIVE NOTICE AND DUE PROCESS PRIOR TO DISCONNECTION AND PROCEDURE OF RECONNECTION

1. To receive minimum fifteen clear days' notice in writing before disconnection under default of payment under section 56 of the Act
2. To receive thirty days notice in writing before disconnection for failure to deposit required security amount under Section 47 of the Act.
3. To receive supply after removing cause(s) of the disconnection by the consumer and obtaining the reconnection order by paying the amounts due within a period stipulated in Standards of Performance Regulations. (contd)

Around the World

Energy in Australia (EESA)



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Publications

- Ian Parry, Dirk Heine, Eliza Lis, and Shanjun Li, Getting Energy Prices Right: From Principle to Practice, International Monetary Fund, 2014. click [here](#)
- UN Sustainable Development Solutions Network (SDSN), Pathways to Deep Decarbonization - Interim Report, 2014, click [here](#)

Latest Regulations

- CERC, Draft Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2014 for the tariff period from 1.4.2014 to 31.3.2019. click [here](#)
- CERC, Staff Paper on Transmission Planning, Connectivity, Long /Medium Term Open Access and other Related Issues. Click [here](#)

Miscellaneous

- National Renewable Energy Laboratory, Island States: Renewable Energy Policy Pioneers, 14 October 2014, click [here](#)
- FSR Florence School of Regulation, Retail Markets in the EU, click [here](#)

ABOUT CAG

Established in 1985, Citizen consumer and civic Action Group (CAG) is an advocacy and campaigning group that works towards protecting citizens rights in consumer and environmental issues and promotes good governance processes including transparency, accountability and participatory decision-making.