

August 1-15, 2014
Volume 3, Issue 15

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Can we do without nuclear power in India? - Shankar Sharma, Power Policy Analyst (Part 1)

The debate as to whether nuclear power is a safe, suitable and essential option for India has been going on for many decades. While the proponents of the nuclear power have been offering many arguments in favour of the option, there have been any numbers of issues raised by those who consider it to be not a credible solution to meet the legitimate electricity requirements of our society on a sustainable basis. Whereas such a debate has been going on in other countries also, a densely populated and poor country like India should consider the nuclear option from the perspective of overall welfare of its communities.

Overarching principles on societal welfare

While the contentious issues on safety, sustainability and economics of nuclear power may not be settled in the near future there is an urgent need to look at nuclear power from the perspective of Precautionary Principle as adopted by the UN Convention on Biological Diversity (1992), and as per the spirit of our Constitution. The Precautionary Principle is an approach to uncertainty, and provides for action to avoid serious or irreversible environmental harm in advance of scientific certainty of such harm. According to this principle, those activities which are likely to pose significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that the expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed. Since the economic costs and risks associated with nuclear power to our society is not negligible, since many implications/consequences of a nuclear accident are not known yet, and since the total cost to the society of safeguarding the spent nuclear fuel for hundreds of years is not known, the basic need for additional nuclear power capacity can be and must be analysed objectively.

Major issues for the society with Nuclear power technology

Economic Issues	Demands large tracts of forests and fertile land; huge capital and decommissioning costs; long term waste management costs; serious shortages of nuclear fuels in India; impact on food availability subsequent to accidents; true costs to society can be huge; massive costs to society subsequent to an accident
Social Issues	Peoples' displacement and health; long term health implications; concerns in birth and genetic deformities; inter generational implications of nuclear waste;
Environmental Issues	Mining related pollution; radiation emission during operation and from nuclear wastes for centuries ; radiation contamination of air, water and land; contamination of food products

In the overall context of the societal welfare some fundamental questions need to be raised. The primary objective of a nuclear power station is the production of electricity. There are many benign ways of producing the electricity. Has our society harnessed all the benign alternatives available for us to the maximum extent? What is the efficiency of the usage of the existing electricity infrastructure in the country? Is there a scope for meeting all the legitimate demand for electricity of our society by a combination of these benign alternatives? Can an objective analysis of Costs V/S Benefits of a nuclear power project as compared to these benign options prove beyond reasonable doubt that it is in the best interest of our society? *(to be continued)*

TN Electricity News

Power evacuation from windmills falls in Tamil Nadu

In June 2014, Chief Minister J Jayalithaa announced that all windmills in the state would be given a "must-run" status, the electricity utility Tangedco continues to be restrictive in evacuating power from functional windmills. As a result, all through the wind season this year, several windmills remained shut even as some districts like Dindigul reeled under severe load shedding, which extended up to six hours a day.

Wind farm owners have been facing this crisis year after year as TNEB does not have adequate infrastructure to evacuate all the power generated by windmills. So, when Jayalithaa announced in June this year that the entire power generated by windmills would be absorbed by the state utility, it was a major relief for the operators. But there has been no improvement in the situation after the announcement, companies say.

"About 30% of our wind energy installed capacity is not being put to use owing to non-evacuation issues, and there is nothing that we can do about it," said a windmill owner. "It is not advisable for anybody to set up any more windmills in Tamil Nadu unless these issues are sorted out," said P P Gupta, managing director of Techno Electric and Engineering, who has 200MW wind mills in the state. In June alone, windmill owners in Panagudi and Kayathar region in Tirunelveli and Tuticorin districts were forced to shut operations for 167 hours when there was adequate wind flow. In June 2013, windmills were forced to shut operations for 102 hours, said K Venkatachalam, chief adviser of Tamil Nadu Spinning Mills Association (TASMA), which owns the largest chunk of windmills in Tamil Nadu. Wind flow was much better this year compared to last year. "We could have generated a lot more power if TNEB was ready to evacuate it," he said.

Ramco Cements, which has a sizeable presence in the renewable energy sector, said in a press release that generation from its windmills suffered a 32% fall between April and June this year. As against 1.115 lakh units generated in April-June 2013, Ramco-owned windmills generated only 758 lakh units during the corresponding period this year. Even while refusing to evacuate more than 2,000MW power from windmills located in Tamil Nadu, the state power utility has been purchasing power from private power generators in other states at high rates, charged wind power generation firms. As per TNEB data, about 14 million units of power was purchased daily during the last two weeks. (Tol, Aug 10, 2014)

India Electricity News

Government aims to add 10,000 MW per year to lift wind energy sector

The government plans to rapidly accelerate wind energy generation, adding an ambitious 10,000 MW every year, or five times the total new capacity that came up in the last fiscal, as the Modi government takes steps to reduce India's dependence on costly energy imports. Wind energy, which had been overshadowed by solar projects in recent years, got a big boost as the government has restored key tax incentives that had helped India emerge as one of the top countries in the world in generating electricity from wind. The government feels that tax incentives coupled with conducive environment will rapidly accelerate wind energy.

"Originally, the country planned to install 18,500 MW during the 12th Plan period. However, new government is keen to go faster in wind power capacity addition, to reduce its dependence on imported fuels and increase the share of environment friendly energy resources. At a recent meeting with turbine makers and other stakeholders New and Renewable Energy Minister Piyush Goyal suggested to add 10,000 MW of wind power installations annually," said a government official requesting anonymity. He added ministry and wind turbine makers will jointly study the status of grid availability in six states with maximum wind velocity. According to Indian Wind Turbine Manufacturers Association (IWTMA) proposed target is achievable as the country has capacity to manufacture close to 9,500 MW of wind turbines and it can be expanded in short period.

"Wind turbine makers are capable to meet proposed higher targets of the government. Higher volumes will bring down average cost of installations and even tariff to make wind power more attractive. By resolving issues related to wind power evacuation and renewable power purchase obligations of the state utilities, India can attract domestic investments in the sector that is getting increasing attention of global investments," said IWTMA chairman Madhusudan Khemka, who is MD of Chennai-based Regen Powertech. Like other power gear makers, Indian wind turbine makers too are facing competition from Chinese counterparts that also offer cheaper finance to the investors in wind energy. Khemka said Indian wind turbine makers with access to best technologies and services are globally competitive but they are unable to offer cheaper finance like Chinese firms.

With installed capacity of over 21,000 Mw, India is fifth-largest wind power producer in the world after China, US, Germany and Spain. According to Centre for Wind Energy Technology India has potential to install over one lakh mw of wind turbines. Ministry of new and renewable energy and Indian Renewable Energy Development Agency are jointly planning to host an international meet in February next year to give impetus to the wind power sector. The ministry is also considering organising similar events to boost solar power. (ET, 12 Aug, 2014)

India faces daily power outage of 30,000 MW

Even as large parts of the country face a power shortage, around 30,000 MW—nearly enough to meet the combined demand of all south Indian states—is lying idle because of breakdowns and repair and maintenance work on power plants. With India facing a peak electricity shortage of 3.7% in June, daily power outages have become a cause of concern for the government and been flagged in the internal meetings of the power ministry. “There is a daily outage of more than 30,000 MW,” said a government official, requesting anonymity. The southern region, which includes the states of Andhra Pradesh, Telangana, Karnataka, Kerala and Tamil Nadu, and the Union territories of Puducherry and Lakshadweep, had a peak demand of 36,181 MW in June, of which 33,698 MW was met, according to the Central Electricity Authority (CEA), India’s apex power sector planning body. India’s per capita power sector consumption, around 940 kilo watt-hour (kWh), is among the lowest in the world. In comparison, China has a per capita consumption of 4,000 kWh, with the developed countries averaging around 15,000 kWh of per capita consumption.

“The generation outage is primarily due to repair and maintenance of power generation projects and breakdown of old units. There are two types of outages—planned outages and breakdowns. It is a cause of concern,” said a second government official, who also didn’t want to be identified. There have been instances when soaring electricity demand and lower output from hydro power plants have delayed annual repair and maintenance work on thermal power plants during the monsoon season, exposing the coal-fired generation units to the risk of breakdown. While India has installed power generation capacity of 249,488.31 MW, daily generation is only to the tune of 135,000 MW. Analysts say the data doesn’t capture the real demand, ascribing the lower deficit to the unwillingness of state electricity boards (SEBs) to buy enough power because they cannot afford to do so. Power distribution companies owned by state governments owe Rs.2 trillion to lenders. This has reduced their ability to buy power. This is exacerbated by India’s aggregate transmission and commercial (AT&C) losses, which are at 26% of generation.

“This inefficiency is the main cause of high power tariff which ultimately leads to lower demand from SEBs,” UBS Global Equity Research said in a 31 July report. Analysts also expressed concerns about the outages. “Electricity power systems have to maintain certain margins to maintain certain level of reliability taking into account planned and unplanned shutdowns—this explains the difference between installed capacity and met demand,” said Debasish Mishra, senior director, consulting, Deloitte Touche Tohmatsu India Pvt. Ltd. “We now have almost 250 GW (giga watts) of capacity, while the catered demand is only around 135 GW. Typically, for a supply mix like that of ours, 30% is a reasonable system margin. Right now, we are having more than 45% margin. This effectively means there is lots of unplanned shutdowns in the system because of older generating assets, hydro power not catering to peak because of bad operation planning and possibly fuel shortage,” Mishra added.

The issue assumes significance given India’s worst blackout that left nearly 620 million people without electricity in 2012. On 31 July, the northern grid collapsed, and on 1 August, in a wider blackout, the northern, eastern and north-eastern grids broke down. It was the largest known blackout in world history, Piyush Goyal, minister in charge of power, coal, and new and renewable energy, informed Parliament on 6 August. “Loss of load probability (LOLP) is an important element in electricity system planning. India follows a 0.2% LOLP, while advanced countries follow 0.1%, which effectively means that our system is designed to have maximum disruption of 16-18 hours in a year while in advanced countries it is less than 10 hours. To maintain higher reliability, system has to maintain higher margin,” Mishra said. ([Live Mint](#), Aug 11 2014)

Consumer Corner

Electricity Consumers - Rights Statement ([Maharashtra Distribution Company—MAHADISCOM](#)) (Part—3)

III. SECURITY DEPOSIT

1. It is the responsibility of consumer to deposit security by way of cash/cheque/demand draft but in case of consumer having monthly consumption not less than One Lac units he has a right to opt for irrevocable letter of credit, or unconditional bank guarantee issued by a scheduled commercial bank.
2. On payment of security deposit in cash (including cheque / demand draft), consumers have the right to receive interest, if deposit amount (in cash) is Rs. 50 or more.
3. Excess amount deposited by consumer towards Security is refundable to the consumers with interest.

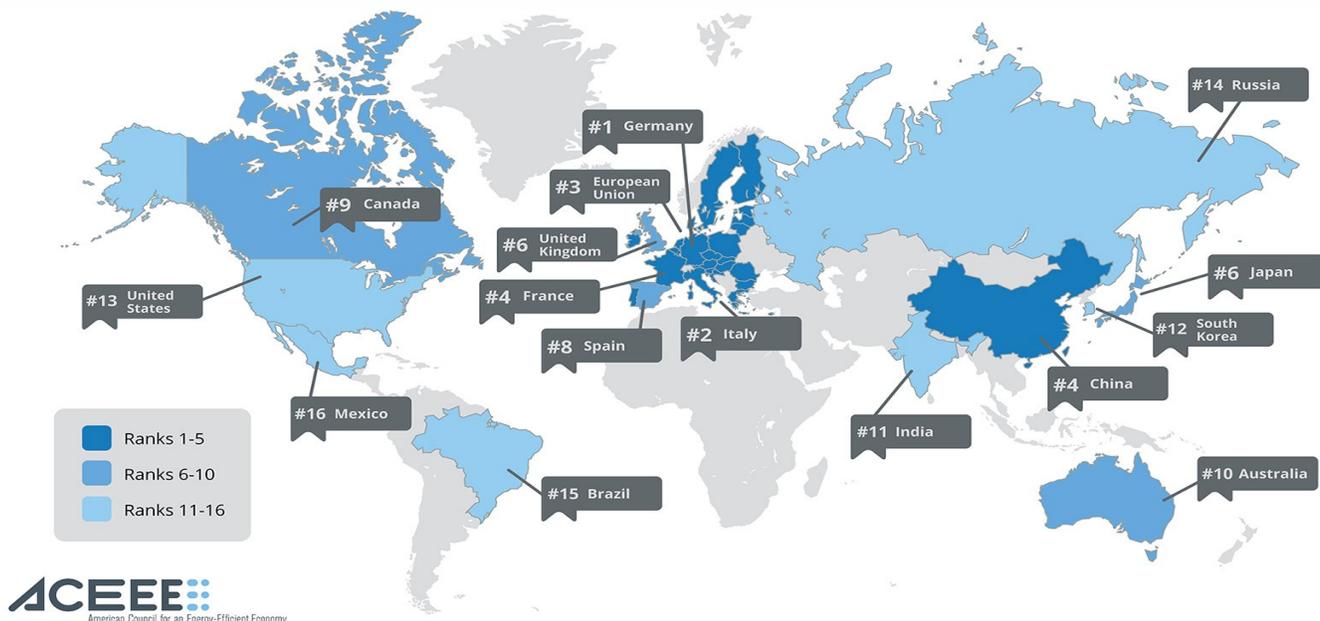
IV. METERS

1. The Energy meter measures the amount of Energy consumed, Maximum Demand and other electrical parameters of tariff applicable and is used by the electricity distribution company to determine the monthly bill. Authorized representatives of the electricity distribution company have the right to access the meter for the purposes of installing, reading, repairing, replacing and testing the meter.
2. Consumers can purchase the meter from the electricity distribution company or any supplier of meters as per the specifications of the Central Electricity Authority.
3. Consumers have the right to get the meter tested for accuracy upon making a request to the electricity distribution company and upon payment of testing charges. Besides the testing facility of the electricity distribution company, consumers have the right to get the meter tested at such facility as may be approved by the MERC. Consumers have the right to receive a copy of the meter test report, which in any case should be provided within two months from the date of request for testing.

Around the World

International Energy Efficiency Scorecard 2014 ([ACCEE](#))

2014 International Energy Efficiency Scorecard



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Publications

- ENEA Consulting, Global panorama of energy access: Current situation, challenges and outlook, July 2014. click [here](#)
- Global Superior Energy Performance (GSEP) Energy Management Working Group, Measurement and Verification Process for Calculation and Reporting on Energy and Demand Performance, Clean Energy Ministerial and the International Partnership for Energy Efficiency Cooperation, 2014. click [here](#)

Latest Regulations

- CERC, Staff Paper on Allowing Electricity Traders to Aggregate and Disaggregate Contracts and Calculate Average Trading Margin for the transactions— Aug 2014. click [here](#)
- CERC, Staff Paper on Extended Market Session on Power Exchanges. July 2014. click [here](#)

Miscellaneous

- Yale Center for Environmental Law and Policy, Environmental Performance Index (EPI). Click [here](#)
- National Renewable Energy Laboratory, The Smart Sacramento Smart Grid Project Webinar, 9 October. 2014. 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.