



# Hydel Bullet

A Monthly Publication Of the Kerala State Electricity Board Engineers' Association

Issue - 4

Vol - 3

April 2015

## The Transmission Riddle

The state of the transmission infrastructure in Kerala evokes much concern as it has lagged behind several years in modernisation, upgradation and renovation. The power corridor envisaged to carry electricity from generation stations to load centres have reached their saturation level.

The first decade of 21<sup>st</sup> century was marked with inundated flow of power from across the boundaries of the State due to the provisions which emerged out of the new Electricity Act and the establishment of Load Despatch Centres (LDC). Due to open access policies, the Board was able to source much required power from the Central grid and the power exchanges and traders. The formation of a separate Central Transmission Utility, which later emerged as Power Grid Corporation of India Ltd. has helped in bringing power from other States. The interstate feeders setup by KSEB had already reached its full capacity and thus we had to depend upon the transmission corridors of PGCIL.

The efforts put in by the PGCIL in forming a 400 kV transmission corridor from Kasargod to Thiruvananthapuram is facing several hurdles. The main portion of the grid, viz. Edamon – Kochi is the disputed portion. Even after several rounds of discussions, the problem could not be solved fully. Government has to continue to show its will and rise up to the occasion to complete the project, which has lagged for many years. Even PGCIL has requested to recuse them from the project, since they are not able to make any profit from the investment expended in the project. If this is the status of a Central Utility which provides a better package to the land owners, imagine the situation of KSEBL which is facing a financial recession. How KSEBL can draw new lines? The solution lies in enhancement of existing lines i.e. 66 kV to 110 kV, 110 kV to 220 kV and from 220 kV to 400 kV.

*Contd. to page 4*



**K S E B  
ENGINEERS' ASSOCIATION**



**62<sup>ND</sup> ANNUAL  
GENERAL BODY MEETING**

**on**

**24<sup>th</sup> May 2015  
(SUNDAY)**

**at**

**PLATINUM HALL, JOBY'S MALL  
PALAKKAD**

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Also finding funds for creating new capital in the form of lines and towers is a big problem which requires a huge package for land compensation. But there is a solution for this conundrum. These towers can be setup on a PPP mode where by other utilities can also share the towers. The existing towers can also be given to other utilities on a chargeable basis and the charges so obtained can be used for new capital works. Finding new sources of non-revenue income is very crucial for sustenance of the transmission infrastructure created. Unlike other infrastructure sectors like the road network, where substitutes like rail, ship, waterways, airways, etc. are available, no such alternative to the transmission lines exist in the power sector. With the sole exception of captive power, cross country transmission lines carry every unit of the power generated in the State.

LDCs play a big role in managing power from the resource rich areas to the demand rich areas. Effective grid management requires handling of different but related sets of flows that are critical for optimization of energy resources at the State and National level. These are the flow of energy across the grid, the exchange of information about power flows and the status of elements it moves across and monitoring of flow of money between producers, marketers, transmission owners, buyers and others. Thus LDCs have an essential role in managing and improving all the three.

But do LDCs have sufficient autonomy? The Pradhan committee constituted by the Government of India went into the details of the functioning of LDC's and has arrived at its recommendations. Accordingly, all efforts need to be made to create an environment where the Load Despatch Centres have functional autonomy, independent and sustainable revenue streams and are adequately staffed with people having the right skills, equipment and incentives to deliver. The statutory provisions in the law as related to System Operators envisage SLDCs as powerful, effective and efficient entities in the electricity industry. However laws have to be interpreted and implemented in letter and spirit to achieve the intent. The experience in the implementation of open access in transmission and distribution especially in the State sector has revealed serious concerns regarding the functional autonomy and authority of SLDCs. Functional autonomy would mean taking decisions without being adversely influenced by extraneous issues originating from the Company Management or any of the market players. The Governments and the ERCs need to encourage and support the LDCs in discharging their functions in an impartial manner as apex bodies. Functional autonomy and authority for LDCs could be ensured through Independent governance structure, separate accounting, adequate qualified manpower having high ethical standards and driven by altruistic values and adequate logistics/ infrastructure.

All of these recommendations have been implemented now in the NLDC, the RLDCs and many SLDCs for better results. Many other States have already implemented these recommendations partially and/or are moving fast to adopt the recommendations to the possible extent. The Kerala Scenario is too bleak with SLDC moving away from these recommendations due to unknown reasons ! The situation is so pathetic to the extent that the present management itself may not be aware of these recommendations at all ! The Certified & experienced system operators are transferred out with reasons known only to the management and substituted with inexperienced and less competent system operators. Also since SLDC is got actively involved in the power purchase and trading of electricity , many technical decisions are compromised due to commercial considerations. Commercial viability and Financial Performance of the KSEBL (due to the hydro dominance, negligible (2%) agricultural consumption and better consumer behaviour in the State) as a distribution licensee is projected as the performance of the organisation concealing huge per unit handling charge, the compromise in the quality and reliability of electricity and frequent local area blackouts in the State. Training and Certification is not encouraged to a desirable level and quality of load despatching and local blackouts are frequent. Instead of implementing the well directed statutory reforms and functional

re-organisation as specified in the statutes, policies and study reports from experts in the field, the management is toying with immature studies and reports from inexperienced teams with vested motives and thus putting huddles in the deserving pace of progress of the State power sector. It is high time the SLDC is liberated from the duties of power procurement and grid fencing is put in place for facilitating this.

Going forward, the demand side capacity is expected to further increase with the industry moving towards Open Access. Open access will allow every end-user of electricity in the country to choose from any available transmission and/or distribution lines, thereby increasing transmission load across the country. An HVDC transmission line is now being established from Raigadh in Chhattisgarh to Pugalur in Tamil Nadu. Sanction has now been obtained to extend this link to Madakkathara for the transmission of 2000 MW power to Kerala. Now it is turn of the State to see that this project materialises on time and does not get entangled in unnecessary issues. We have to explore all the possibilities to achieve this and undertake other steps to augment the transmission capacity failing which the problem with transmission sector is likely to aggravate further .



## A Vision for Solar Policy of Kerala

**K. Sivadasan**

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**I**t has been recognised without contention that energy is one of the key elements required for social, economic and particularly industrial development.

This is a world of competition. History teaches that whoever commands larger energy could stand tall among the competitors and lead the world. Colonization was taken up by those nations that had large energy sources. In the present political scenario the country that uses more energy (now it is renewable energy) is considered 'advanced' taking into account the industrial output.

Nations the world over, move along a roadmap visualising energy independence through renewable sources. India aims to become a renewable energy nation by 2050 with an ambitious programme, to have a solar installed capacity of 100 GW by 2022 and 500 GW by 2050. Kerala has to join the national movement to become energy independent through renewable resources. Kerala's renewable energy sources mainly include hydro, solar and wind. Proposals for hydel plants are pending with the centre. Onshore wind potential is assessed as 800 MW and faces constraints for power evacuation. Large offshore potential projected recently in media reports seems

unreal which requires a more cautious approach. In depth study and confirmation is necessary prior to venturing into offshore wind projects. The single choice left is solar resource.

Before moving to visualize Kerala's Solar Policy (Renewable Policy) the ground realities are to be ascertained. Kerala's 20 year average annual inflow works out to 6571 MU Hydel. (Source: KSERC) approx. 7000 MU. This is the firm power potential Kerala has. According to KSEB, "At present about 55% of the peak demand and 30% of energy requirement is met from hydro power plants." KSEB spends 25% of its total power purchase cost for procuring just 6% of total energy requirement from liquid fuel power stations.

The annual energy requirement at present is 22000 MU and annual import is 15400 (70%). Generation from diesel stations is considered imported power. The scope for raising hydel generation is on rough road. Kerala's projected energy demand for 2030 is 45,000 MU which shows that annual import will be (45000-7000) 38000 MU (84%), 90% of the 84% is from coal. This indicates that the power sector heavily depends on coal and moves away from the targeted energy security.



India's coal reserve is not comfortable enough. Here is an extract from a report by Tata Energy Research Institute (TERI) "The estimated coal reserve in India is 285.86 billion tons, out of which proved reserve stand at 114 billion tonnes. However, these reserve estimates include a large share that is not extractable due to technical reasons or because it falls under forest land, among other reasons. Recent estimates now place extractable reserves at 21.8 Billion tonnes (2011), which are expected to last 35-40 years at current rate of exploitation. India also has lignite reserves of 39.9 Billion tonnes (MOSPI 2012)". India's annual coal consumption is around 600 Million tons and it roughly doubles every 10 years (Ministry of Coal). Statistics of Ministry of Coal indicates that coal reserve is depleting fast leading to a critical situation before long. We need coal for purposes other than power generation. We can extend the availability of coal for a few more centuries for purposes other than power generation by limiting present coal consumption by all means.

Meeting coal demand from imports may have to face 'resource nationalism', a phenomenon spreading worldwide.. Further India will not have any control over the price of coal in a foreign country. The price will be decided/dictated by the policies of a foreign country. Investments made, linked to the future policy of another country is not in national interest.

This scenario takes us to renewable sources -first choice goes to solar. Solar resource is free, abundant, predictable,

and perpetual and the cost of generation takes a downward path. Kerala has space constraints to build MW size solar plants. But Kerala has, at present, a rooftop potential of 10000 MW at cell efficiency of 16%. It is projected that R&D will bring up the efficiency to 30% by 2020 which would raise potential to 20000 MW. It may not be a joke, in the near future, a square foot of panel could generate 200W at reduced cost. Kerala can think of becoming a '100% renewable energy' state with the existing hydel stations and 'pumped storage' stations that are to be built.

Policies are to be framed with long term targets. Administrative mechanisms are to be streamlined to help shorten lead time, reduce bureaucratic overhead, minimise project cost and accelerate the pace of solar deployment. A sustainable growth of solar generation is the target. It is an ongoing programme of the future.

Close to 4 lakhs of consumers are added every year, 80% of which could install rooftop solar plants. Kerala can think of creating a 'manufacturing ecosystem' to meet the annual requirement of system components for solar plants that are coming up every year.

Several proposals on policy options are on the cards. The government should choose a policy that is found successful elsewhere and adopt it with variations depending upon the prevailing ground realities. Time is precious and we have no space for trial and error method. ➡

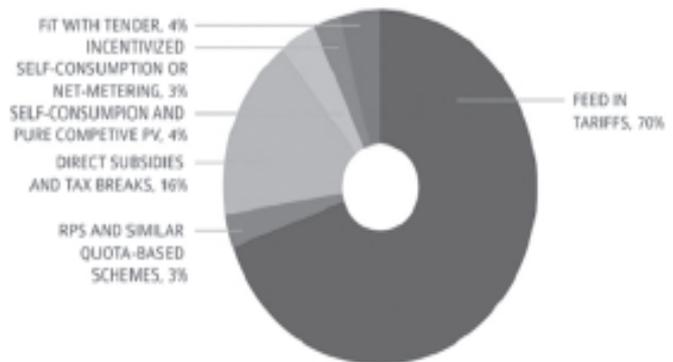
Seems, vested interests take advantage of the nation's enthusiasm for solar generation and create furore in the energy sector hoping to make undue benefit. In the melee, created discretely, of solar promotion several technologies are proposed from different corners. Preference can be given for proven technologies. A technology that is successful in one country may not work in another country. As such pilot projects (10-20 KW) may be tried, at least, for five years for new technologies and ensure satisfactory operation before going for large scale projects.

The Government of India, in a policy document dated 5.3.2015, decided that "Only commercially established and operational technologies will be promoted under all the 'tranches' to minimize technology risk and to achieve timely commissioning of the plants". This indicates that fiscal incentives will be restricted to proven technologies. This order is issued in connection with 'Implementation for setting up of 15000 MW of grid connected solar PV Power plants through NTPC/NVVN'.

Proposals for solar plants on waste land and grass land are to be attempted with caution as it may lead to 'land grab'. Reflecting on a Kerala centric renewable energy policy, Kerala can become a 100% renewable state in a short period of time given the large potential. It is a rare opportunity for God's Own Country.

The Solar potential of Kerala is mainly made up of rooftop grid connected plants. Prevailing subsidy regime, if not handled with care, may become the villain to solar growth. Entrepreneurs may lose enthusiasm to run the enterprise once the 'benefits' (subsidies etc) are claimed forgetting that the venture is for generating power throughout the life of plants (40 years). Best policy suggested is the feed in tariff (FIT). Proof, 70% of global solar generation comes through FIT according to International Energy Agency (IEA) as shown in Fig 1.

2013 Market Incentives and Enablers for Solar



Source: IEA PVPS

Feed in Tariff (FIT) is a concept that got evolved in Germany and is followed by most nations with minor modifications. Following this concept Germany could raise its solar capacity from 3000 MW in 2005 to 35000 MW in 2013. This is the result of spiralling cost reduction of solar plants due to economies of scale which is achieved by the application of Feed in tariff.

FIT, in brief, is a policy mechanism designed to accelerate investment in renewable energy technologies. FIT guarantee that anyone who generates electricity from renewable energy source - home owner, small business or large electricity utility-is able to sell that electricity into the utility grid and receive guaranteed long term payments for energy transferred at a predetermined rate. This preferential rate is fixed considering the benefit the society and the utility get from this renewable energy. It is not a FREE GIFT to the producer as generally understood. The FiT in 'brief' is described in the chart below.

could be set in two parts by the power sector regulator - one payable to producer by the utility and the other payable by the Government (Centre/State) to the utility. The second part would seek to reimburse the utility for what it has already paid to the producer."

FIT in the beginning has to be at a higher margin to overcome the inertia of the mass. Once the system is streamlined it will gain momentum and would rise exponentially as was seen in Germany and Italy. Later the FIT can be reduced. In a research in Germany it was found that rooftop solarisation is a 'contagion' - it spreads to the neighbor.

Concept of Feed in Tariff is "to share with producer the benefit accrued to society and utility"

Benefit to society	Benefit to utility
Saving in fixed cost of energy (generation)	Saving in T&D capital expense
Health benefit by avoiding green gas	Lesser O&M of plant and machinery
Additional revenue from industrialisation	No T&D loss
Job creation and economic growth	Saving in cost of fuel

Sharing benefit will motivate producer/investor

Fig 2

In this concept higher weightage can be allowed for 'necessity'. FIT decided by Japan in 2012 is an example. They ordered the highest feed in tariff because of the 'dire' need, that arose after the Fukushima disaster, which resulted in speedy growth of solar generation.

In simple words as reported in Hindu Business Line "it refers to payments made out to ordinary energy users for renewable electricity generated by them. The tariff

Let us think about how to go about the solar programme in Kerala.

Kerala can go for rooftop grid connected systems as we have space constraints. Start from zero installed solar capacity. As a 'Pilot Project' KSEB can install 1,3, and 5 KW grid connected solar plants over their buildings, a few in every district, preferably over substation buildings. This is considered an R&D exercise. The installation work is to be carried out with direct supervision by Station Engineer. Use the best quality system components available in the market irrespective of the cost involved. Reputed solar installation providers have to be shortlisted for the work by negotiation. The Installation can be completed in a month. The Assistant Executive Engineer (Distribution) of the area is to be involved in monitoring the

solar plant with specific reference to reverse flow protection. The S/S operator is to record hourly readings of the energy meter that is connected between solar plant and grid. On completing 3 months successful operation of the plant consumers may be encouraged to install such plants on their rooftops. Progress will be slow in the beginning but will gain momentum as time passes on.

ANERT, the nodal agency for MNRE, can oversee the solar policy with reference to the national policy. Kerala's policy has to be in line with central policy. Number of solar producers can go up in lakhs in the years to come. The mechanism to monitor and guide the solar sector is to be finalised from the initial days with firm footholds. KSEB is the right choice as the implementing agency. It has offices in every corner of the state and has enough HR to handle various issues connected with solar generation and distribution. They have a close liaison with people at the grass root level (consumers). Financial burden on government would be minimised if the implementation is entrusted to KSEB. ANERT can never be made the implementing agency. They have only one office in every district and it is not financially advisable to open more offices to manage the huge number of solar producers.

Grid connection may be permitted from 1 KW upwards. Cost of connection to the grid has to be charged to the consumer. Though solar power delivers

clear payoffs, it requires specific regulatory mechanisms. KSERC, Electrical Inspectorate and KSEB are to be involved in the mechanism.

Research and development is a core field for the success of solar generation. ANERT can be made the nodal agency to coordinate the R&D. Indigenous solar technology is to be developed in course of time. Funds received from carbon credits by the government from solar generation can be earmarked for R&D in solar sector. Colleges and schools may be provided with funds to encourage R&D. Engineering colleges may be persuaded to take up 'project work' connected with solar engineering under electrical/electronic engineering branch as part of the curriculum. ANERT may be advised to compile the project reports of various colleges and publish selected project reports in their website which may be redesigned for the purpose. Awards can be instituted to selected projects. Universities in Kerala can be advised to add a Programme - SOLAR ENGINEERING- in their curriculum. In foreign countries there are full time graduate courses on solar engineering. To start with, universities can consider an optional subject, 'Solar Engineering', in the final year. In future, solar power would find a premier place in power generation where solar engineers are the backbone. To meet the demand for tradesmen in solar sector new courses can be added in ITIs.



Meticulous monitoring is essential for success of any programme. ANERT is to be empowered to collect and tabulate the progress of solar growth from micro level to macro level. Primary records of solar installations are to be maintained by KSEB, the implementing agency. An online (Intranet) system would avoid delays. KSEB is to report the progress etc to ANERT monthly/yearly so that ANERT can liaise with the centre to get reimburse the incentives available for solar generation. ANERT could be authorised to publish the progress of solar growth in its website in convenient graphics and update it regularly. At the moment there is no such practice in our planning process. Feedback from public could be available if the documents are in public domain - website.

Kerala's solar policy (2013) envisages 'third party owned' rooftop installations. Giving statutory protection for such an approach will make way for private monopolies. It can end up in litigation involving government, utility, consumer and the third party, jeopardizing the programme. Alternatively, the producer/consumer can lease the rooftop to third party through bilateral business agreement. Third party can work on behalf of the producer/consumer. The utility and the government need not be part of this business deal. Let not the rooftop exercise infringe upon the intrinsic relationship between consumer and utility that is derived through service connection agreement.

The solar policy should

1. Ensure the benefit of rooftop generation reaches the producer and not the middleman.
2. Attract middle class to install grid connected rooftop solar plants.
3. Persuade banks to provide long term loans - 20/25 years
4. Guarantee long term (25 years) Feed in Tariff
5. Motivate entrepreneurs to come out with various business models in line with the law of land.
6. Restrict use of arable land for solar plants and avoid creation of avenues for land grab.
7. Limit the entities involved in the FIT regime to three: 1.Producer (Consumer), 2. Bank and 3.Utility (KSEB), once the plant is put into operation
8. Payment to the producer by utility shall be arranged through the bank that finance the project preferably through net banking.
9. Ensure automatic 'pre-designed' email communications sent to producer/consumer ('prosumers') regularly.

According to a study by Fraunhofer Institute the cost of solar will fall to 2 cents per kwh by 2050. Cost will be lower than that due to technological breakthrough, according to Agora Energiewende, a German consultant. By 2050 cost of energy from conventional sources will be several times more than the present. Cost of fossil fuel will rise to unpredictable level following Law of Supply and Demand.

This is because there is no supply, only rise in demand. Kerala has to face the dire consequences of over dependence on fossil fuel - energy crisis. The Way out to escape the crisis is to move on to solar generation. It cannot be done overnight.

At present solar is designated as 'nonconventional source', dubbing solar as a second ranked source. The potential of solar is underestimated. At present, solar is considered to take a small share of power mix. In view of the extremely favourable costs, solar power will, in future, play a prominent role together with wind and hydro. As such future plans for power systems are to be designed to accommodate solar and wind as a major share of power mix. Conventional power will be limited to the bare minimum. The world is in the process of transition away from fossil fuel. Kerala has to follow suit.

Energy is a primary input to all industries. Cost of energy has to be as low as possible to keep unit cost of products competitive. As explained above solar will be the cheapest energy of the future, if better technology is not developed.

KSEB has a responsibility to provide, on demand, sufficient quality power at reasonable cost. KSEB has to play the lead role in the process of transition to solar. Future of KSEB lies in solar. It is proposed to make joint effort by the 30000 plus brains of KSEB to find ways to raise solar generation at a faster rate. Brainstorming sessions can be conducted in every division. Innovative solutions could be formulated from the feedback from sessions. A change in the concept of management is inevitable. How long can we rely on imports? Required power has

to be generated from within. KSEB should have a committed team lead by Chief Engineer (Solar) to overlook solar sector. An innovative management of solar sector will be the strength of Kerala's future power sector.

Kerala enacted a solar policy in 2013 (25.11.2013). Progress achieved so far is negligible. It seems the rooftop programme envisaged in Kerala's renewable energy policy is not vibrant enough to raise solar generation to the targeted level. There's no need for remorse though. There is scope for amendments. Germany took 15 years (1990-2005) to finalize a vibrant renewable policy. Though late, learn from around the world. KSEB has to take proactive role for the transition.

Let us strive hard to avoid the impending energy crisis that could arise from fuel shortage. Visualize a sustainable development. Sustainable development is possible only with energy from sustainable source. Listen to the words of Dr. Abdul Kalam. He said in 2014, "The total solar potential in the state would be over 40000 MW by the year 2030, hence the state has the potential to be energy independent to an extent of 95 per cent in the next 16 years."

A transition from depleting source to renewable source is inevitable. Going solar is the choice, given the stupendous potential. Fastest growth is possible through Feed in Tariff. Rooftop harvesting is the simplest. It is people friendly. It is the choice for Kerala. Embrace it. Sooner the better!!

Let us have a sustainable life on earth!!



## THE 100 GW HEADACHE

Anilesh S. Mahajan

The government aims to boost solar power capacity 30 times in seven years. Is the target realistic? Just two years ago, few outside Gujarat's Patan district had heard of the tiny village of Charanka. It is home to the tribal Ahir community at the eastern end of the great Kuchchh desert. Acres of wasteland owned by the community grows little except the occasional wild bushes.

But in 2013, it found itself under the spotlight when the then chief minister Narendra Modi inaugurated the one-of-its-kind solar park there. Twenty-three small and big players came together to set up the 345 megawatt (MW) solar park (being expanded by another 300 MW). That made it capture 10 per cent of India's installed solar capacity.

As you head towards the solitary 80-foot tower overlooking the 5,384-acre sprawl of different shades of blue (representing monocrystalline, polycrystalline and thin film

panels), a Gujarati-

**Where the sun shines: The Dhirubhai Ambani Solar Park in Jaisalmer district, Rajasthan**

flavoured English voice

informs you the tower was

not part of the original

plan. "It was erected to facilitate Modi's photo-opportunities and showcase this solar park to the world," says Hitesh Shah, a young engineer with

### WORK IN PROGRESS

Main ingredients to achieve the solar power target

#### LAND + ROOFTOPS

##### NEED

1,095 sq km of land and  
650 sq km of rooftop space

##### TARGET

60 GW on solar parks and  
distributed generation  
capacity

#### INFRASTRUCTURE

##### NEED

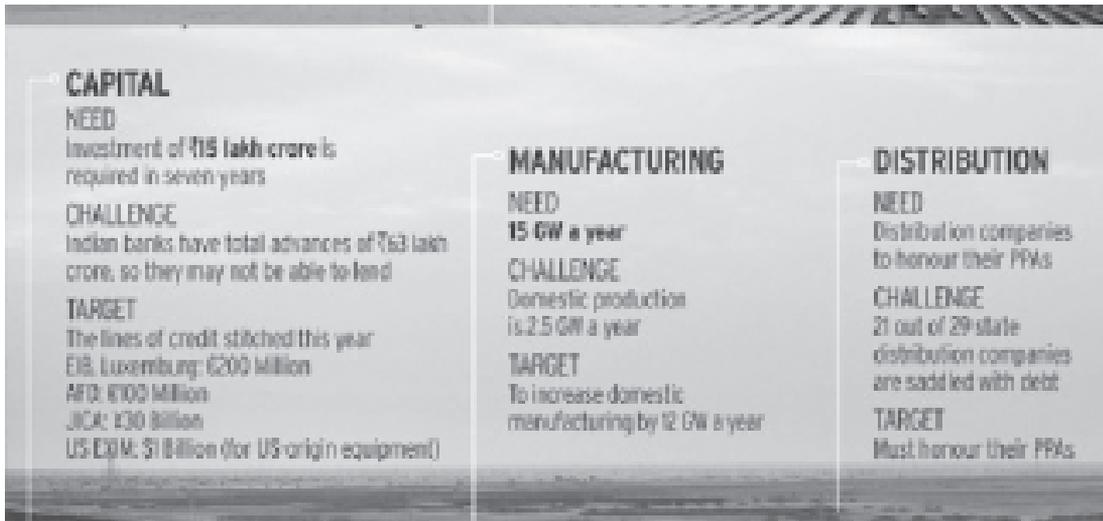
Investment of roughly ₹45 lakh crore

##### CHALLENGE

Solar is infirm power. Even if 100 GW is installed,  
only 22 GW can be generated on average. But  
infrastructure is required for maximum capacity

##### TARGET

Separate green corridor connecting most  
renewable units



Gujarat Solar Park who is entrusted with the job of taking the visitors around. A tiny lift that can accommodate five people takes you right up to the top. You could be forgiven for mistaking the land beneath for an ocean of blue. The illusion is only broken by a twister. "They are regular here. The dust they deposit increases the cost of cleaning the panels," explains Shah. 'It is not an easy task by any means, but we are determined to make it happen', says Piyush Goyal, MoS, Power, Coal and Renewable Energy

As fate would have it, Modi went on to become one of India's most powerful prime ministers with the backing of 340 members of Parliament in the 543-member lower house. And Charanka-like solar parks are now key to the '24x7 power to every household' dream that Modi sold to the masses during the elections. So Modi and his trusted lieutenant Piyush Goyal have targeted setting up an ambitious 100,000 MW (or 100 GW) of solar power capacity by 2022. That's equivalent to 300 Charanka-like parks or 30 times of India's existing solar power capacity (interestingly, despite the hype around the target, the website of the Ministry of New and Renewable Energy (MNRE) still claims India plans 22,000 MW of grid-connected solar power by 2022!) But critics say they would be surprised if even 30 per cent of the 100 GW target is achieved. Here's why they think it is such a herculean task.

One, no country in the world has set up 100 GW of solar capacity. Not even Germany - the biggest proponent of solar energy - whose capacity is 38 GW. Nowhere in the world has a country added 15 GW of solar capacity every year. "It is not an easy task by any means, but we are determined to make it happen," says Goyal. ➔

## OFF THE BLOCK

The government has so far approved 17 solar parks with total capacity of 12,759 MW

### PUNJAB

**CURRENT STATUS**  
Land to be acquired  
**TARGET**  
Two parks of 500 MW each  
**FUNDS RELEASED**  
**₹3 cr**

### RAJASTHAN

**CURRENT STATUS**  
JV between state government and BAPF to be formed for Bhada II  
**TARGET**  
Three parks of total 2,700 MW  
**FUNDS RELEASED**  
**₹33.44 cr**

### GUJARAT

**CURRENT STATUS**  
Hand over land to IIL  
**TARGET**  
One park of 700MW  
**FUNDS RELEASED**  
**₹2.75 cr**

### KARNATAKA

**CURRENT STATUS**  
JV formed, land to be released from owners  
**TARGET**  
Two parks of 800MW

### KERALA

**CURRENT STATUS**  
State to hand over land to implementing agency

### UTTARAKHAND

**CURRENT STATUS**  
Implementing agency to be finalised

### UTTAR PRADESH

**CURRENT STATUS**  
JV to be formed, land to be transferred  
**TARGET**  
One park of 600 MW  
**FUNDS RELEASED**  
**₹2.75 cr**

### MADHYA PRADESH

**CURRENT STATUS**  
Hand over land to implementing agency  
**TARGET**  
Two parks of 500 MW  
**FUNDS RELEASED**  
**₹3 cr**

### MEGHALAYA

**CURRENT STATUS**  
Land to be transferred to implementing agency  
**TARGET**  
One park of 20 MW

### ANDHRA PRADESH

**CURRENT STATUS**  
Kumool Land being acquired, tender for 1000 MW to be issued, Aravindpur land to be transferred  
**TARGET**  
Two parks of 1500 MW and 1000 MW  
**FUNDS RELEASED**  
**₹123.085 cr**

### TELANGANA

**CURRENT STATUS**  
Implementing agency to be created  
**TARGET**  
One park of 1000 MW  
**FUNDS RELEASED**  
**₹2.75 cr**

### TAMIL NADU

**CURRENT STATUS**  
Implementing agency to be finalised  
**TARGET**  
One park of 500 MW

Source: Ministry of New and Renewable Energy



That doesn't mean that a focused approach can't get India to the target. But consider what the Modi-Goyal duo is up against. It requires an investment of Rs 6.5 lakh crore (nearly three times India's defence budget) at a time when the Indian banking system is already laden with bad and doubtful debts of more than Rs 10 lakh crore. It requires 1,095 sq km of land (equivalent to 3,60,000 football grounds) when the country is embroiled in a raging debate over land acquisition rights. It requires 400 million units of solar modules when the country's solar module makers can manufacture only 70 million units in seven years. Though it's clean energy, it will still pose questions of viability as solar energy costs Rs 6 to Rs 7 per unit against the average cost of power of Rs4 per unit today. And, importantly, the new capacity will face the distribution and evacuation challenges that are the bane of India's power sector. "The evacuation and grid management is a big challenge, and if we look at expanding renewable resources the challenge becomes more steep," says Amit Kumar, Partner, Energy and Utilities, PwC India.

Indeed, at the end of the day, even if the target is achieved, it will only produce roughly 22,000 MW of power (solar panels work at 22 per cent efficiency) - that too in day time. That spike and ebb (at night) is another challenge India's grids may have to deal with whenever the capacity is up and running. Banmali Agarwala, CEO, GE South Asia, says the blend of renewable energy up to 20 per cent is manageable but beyond that this could destabilise the grid.

### Lofty Ambition

It will be nothing short of a miracle if the Modi-Goyal combine achieves the target. As against India's ambition to set up 100 GW, the total solar power generation capacity in the world stands at 177 GW. While the global capacity has been set up over 15 years, India has set out to achieve its target in a short span of seven years. To stitch together India's solar story, Modi entrusted his additional principal secretary, P.K. Mishra, to help Goyal. Mishra is a confidant of Modi. He was chairman of Gujarat State Regulatory Commission for five years. His job is to take the bureaucracy along, and support 'out of the box' thinking in Goyal's ministry.

At a renewable energy conference in New Delhi in February, 200-odd Indian and foreign companies signed on letters of commitment to set up 266 GW of wind, solar and other renewable energy projects against India's current installed capacity of 230 GW. At least 166 GW of that was solar power commitment.

But there is a big question mark over whether the intent to humour India's prime minister and the power minister outweighed the intent to put such capacities on the ground. After all, SunEdison, which operates solar plants totaling 100 MW, committed 10,000 MW of solar and 5,200 MW of wind power plants. Axis Wind Energy, whose website is under construction, has committed 12,500 MW - the second-highest - of renewable energy. Interestingly, most announcements are in the form of MoUs and not concrete agreements.



Yet, such scale has never been achieved. As against India's annual target of 15,000 MW, the maximum annual capacity has been added by China at 12,000 MW in 2012. But nowhere near that since. In 2014, the US added the maximum 6,200 MW, its best ever. For the record, India has historically added around 1,000 MW per annum.

Of the 100 GW, India plans to set up 40 GW through Charanka-like parks and other distributed generation units; another 40 GW through rooftop solar and the remaining through the Pradhan Mantri Surya Udhayami Yojana, or the Prime Minister Solar Entrepreneur Scheme. While the rooftop solar policy is still in the works, the government is yet to announce any details of the solar entrepreneur scheme. "By 2017, the target is to reach 11 GW (11,000 MW). Then we are expecting grid parity (where the cost of solar power generation is equal to or lower than the cost of other sources of power generation). And this can accelerate the addition manifold," says a top official in the government. "By then, even if the government doesn't do anything and just sorts policy enablers, solar-based units will multiply," says Ratul Puri, CEO, Hindustan Power.

"These calculations are based on the improvement in technology and cell manufacturing cost reduction. But this (tariff reduction) can be done much faster, if the government intervenes by reducing interest rates, allowing dollar-denominated bonds, reduction in capital cost or introduction of other financial instruments," says Anurag Garg, Vice President of the solar business at Schneider Electric India. As solar cell technology has improved in terms of efficiency and economies of scale, solar power generation cost has fallen from Rs15 per kWh to Rs6-7 per kWh. Further improvement could bring it on a par with thermal power, which currently costs Rs4 per kWh.

## Funding Blues

At a capital cost of Rs6.5 crore per MW, the cost of setting up 100,000 MW of solar plants works out to Rs 6.50 lakh crore. Even at a debt-to-equity ratio of 1:3, this will require debt to the tune of Rs 4.5 to Rs 5 lakh crore. Promoters will have to bring in funding of Rs 1.5 lakh crore. Another Rs 7-8 lakh crore is required for grid infrastructure and equipment manufacturing.

By all accounts, it's a big task. The government has yet to come up with a proposal for debt funding beyond the banking system. And the banking system has already hit the sectoral ceiling of 16 per cent for the power sector. Of the Rs 63 lakh crore of bank advances, more than Rs 9.5 lakh crore has been to the power sector.

Promoter equity will also not be easy to come by since corporate India's total debt of Rs 41 lakh crore limits promoters' elbow room. Foreign equity or debt investment is difficult because largely solar power generation continues to be a subsidised business. Goyal, however, informed Parliament that subsidies for rooftops have been reduced

## DESERT SAFARI

Rajasthan has taken the lead in luring solar power developers

Rajasthan CM Vasundhara Raje Scindia is right. She looks at India's biggest desert as an asset and is keen to make it the electricity hub of the country. "Rajasthan is blessed by nature with massive solar potential in the country, an estimated 142 GW solar capacity and abundant barren land for installation of solar power plants," she says. Rajasthan has 84,979 sq km of wasteland, the largest in the country. In October 2014, Scindia's government revised the state's Solar Energy Policy, which many say is one of the best. This desert state has 600 MW of installed capacity. Projects totalling 82 MW are in the pipeline but it has already signed MoUs for solar power generation commitments of more than 82,000 MW from companies such as Adani Enterprises, Bellare Power, Incitech, US-based SunEdison and Delhi-based Annu Power. Rajasthan has also secured permission from the MNRE to set up three solar parks in Bhadra and Jaisalmer areas of the state. Collectively, these power plants will add 2,700 MW. The BJP government amended the state tenancy law and Rajasthan land resource law to allow operators to even acquire agricultural land (by contracts) for solar parks. Energy Tamil Nadu, no other state has had the political will to bring in such a provision which needs several months of legwork to get the land use changed. But what worries the developers is the fiscal health of the less-making state distribution company, which has total debt of a whopping ₹77,461 crore.



from 30 per cent to 15 per cent with the intention to eliminate them soon. "Risk capital is expensive. The nature of solar projects is such that once you mitigate the construction cost and get connected to the grid, you just have to do the right generation. This will create cash flow. This becomes an ideal situation for pension funds to come in and earn yields on annuity basis," says Puri of Hindustan Power. Besides, solar parks, even grid upgradation needs enormous funding. The Indian grid has an installed capacity of 260 GW. By 2022, it will be roughly 500 GW, needing an investment of Rs 43,000 crore by Power Grid Corporation. "Negotiations are going on with the Asian Development Bank (ADB), World Bank and state governments to stitch a soft loan," says a top official in the power ministry.

"The best way is dollar-denominated bonds, or government-backed green bonds," suggests Vineet Mittal, Vice President, Welspun Renewables. Goyal and

Finance Minister Arun Jaitley are in talks to allow access to affordable international funds. Foreign funds are demanding stability in currency. One way is hedge fund pool, says a top official in the finance ministry. Pools ensure that the government will compensate for any depreciation in the currency. There is a market to hedge medium-term foreign exchange risk, but it is 'expensive' as foreign funds see the life of a solar plant at roughly 25 years and are pushing to mitigate risks, says the official. The biggest drawback is that international funds prefer equipment sourced from established international players. And that's not in sync with Modi's 'Make in India' promise as solar is one of the 28 items listed for local manufacturing under the initiative.

## Land Blues

Charanka-like farms with roughly 20 GW capacity will require at least 324 sq km of additional land. The Wasteland Atlas of India says that India has 4,70,770 sq km of wasteland, and that the planners have considered just three per cent of this for roughly 400 GW in the country. But that is in theory. "Availability of land at a suitable price is an issue. The land acquisition bill has already increased the compensation amount to four times. This will limit the area that can be brought under the solar energy," says the CEO of a power company. "Tamil Nadu has the best solar policy, but it is unable to attract investments. It is only because land is not available at a suitable price," he added. 'The financial health of many discoms is poor, causing delays in payment for the power they procure', says Anil Sardana, CEO, Tata Power

Countering this is Mittal of Welspun, who also heads the Solar Power Developers' Association. "The beauty of solar is you can go as remote as possible. As a matter of policy, I ask my people to look for land which is not suitable for agriculture," says Mittal. His idea will, of course, require the grid to evacuate power from such remote areas. His company developed a park at Neemuch in Madhya Pradesh with installed capacity of 130 MW, the biggest solar farm by a single operator.

So, for now Modi and Goyal are focusing on states run by the BJP or allies to harness the potential of solar energy. Between July and December last year, Goyal's ministry approved 16 solar parks. The plan is to develop 25 such parks in the next 24 months.

### **The Saffron State Push**

During his campaign for the 2014 Lok Sabha elections, Modi inaugurated Welspun's Neemuch solar plant, and called it saffron revolution - taking a leaf from the green revolution four decades ago. As the PM, he now hopes to take all saffron states along. Since May, states have, for the first time, issued tenders to set up 6,000 MW of new solar plants.

Efforts are on to facilitate investment and evacuation of power. These include faster transfer of land, allowing the solar farm developers to use agriculture land, assuring them evacuation of power and single-window clearances. Power Grid Corporation, India's premier grid infrastructure company, is being asked to build transmission lines connecting all upcoming solar parks and wind energy plants. "We seek clarification from the Central Electricity Regulatory Commission (CERC) to allow laying transmission lines suo-moto," says I.S. Jha, Director (Projects), Power Grid. As per existing regulations, solar plants have to apply for grid connectivity, experts say. This delays projects.

Other than this, these states are aggressively pushing environment and other clearances. Madhya Pradesh's state agencies are working to start 2,000 MW of solar farms at Rewa, Neemuch and Agar on about 28 hectares of wasteland. "We are

committed to providing round-the-clock good quality electricity to every citizen in the state. Solar and wind energy play a critical role in providing access to those living in remote areas of the state," Chief Minister Shivraj Singh Chouhan had told BT in an earlier interview.

"We understand this issue. Most of our projects are in plug-and-play mode. Agencies from the Centre or states or their joint ventures, are developing them, and later we can get equity partners from the private sector," says Upendra Tripathy, Secretary, MNRE.

In Rajasthan, also run by the BJP, Chief Minister Vasundhara Raje Scindia is busy attracting investments. Rajasthan has installed capacity of 868 MW while projects of 829 MW are under implementation. Rajasthan receives maximum solar intensity in the country and has low precipitation, while there are long stretches of land available to set up plants. The state is now looking at bigger projects of 100 MW and above.

In October last year, Rajasthan revised its Solar Energy Policy, 2014. It allowed projects to use agriculture land without land use change. This resulted in proposals and joint ventures of 32,000 MW from corporate houses such as Adani Enterprises, Reliance Power, IL&FS, Essel Infra, Azure Power and US-based SunEdison. Rajasthan Solar Park Development, a state government subsidiary, is developing two solar parks of 1,400 MW at Bhadla and 1,000 MW in Jaisalmer.

"We have tried to interweave these (initiatives) to create a progressive, farmer- and industry-friendly policy. The state is fast emerging as one of the largest solar hubs of the country," Scindia told BT.

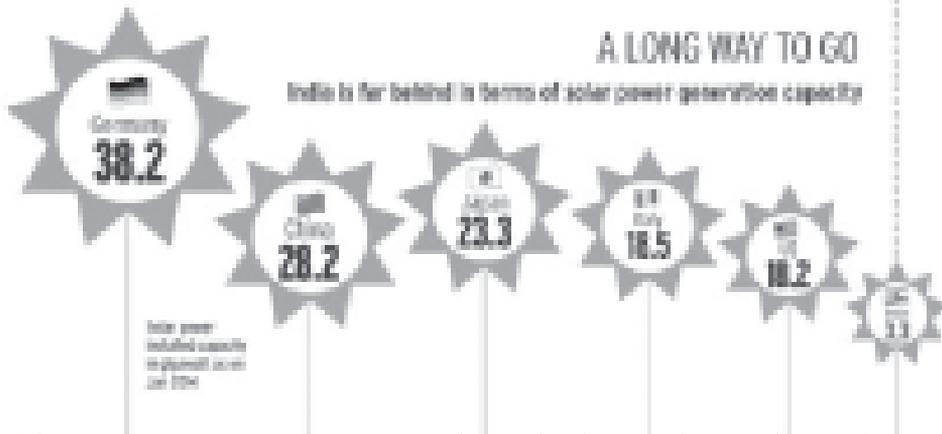
In fact, Chandrababu Naidu, the BJP's ally in the National Democratic Alliance, was the quickest among the chief ministers to get an in-principle nod for two solar parks in Kadapa (1,500 MW) and Kurnool (1,000 MW) districts of Andhra Pradesh on November 28, last year. Kadapa would be the country's largest solar park. The total installed capacity in Andhra Pradesh is 250 MW; the target is to take it to 5,000 MW in the next few years.

#### Equipment Conundrum

At 2.5 GW per annum, India's solar module manufacturing capacity is woefully inadequate to meet the annual demand for 15 GW. At the same time, India has mandated use of locally manufactured solar cells for 3,000 MW installations (where developers have sought subsidies). The US has challenged these norms at the World Trade Organization.

"India doesn't have manufacturing capacity to cater to this need. Neither do domestic players have access to capital to scale up their operations rapidly. There is a huge challenge for the government to help them scale up the capacity. One of the ways is to assure them off-take," says Kumar of PwC.





Besides, certain manufacturers, such as the large photovoltaic (PV) module maker Moser Baer, are financially weak to take full advantage of higher demand by expanding capacities. “We are in a debt restructuring mode... [but] we see a great opportunity in front of us,” says K.N. Subramaniam, CEO, Moser Baer Solar. In fact, manufacturers pushed for anti-dumping duties against importers, but after Goyal’s intervention in June last year, the complaint was withdrawn. “We are convinced that if the country moves towards protectionism, the perceived growth cannot be achieved,” says Subramaniam. Goyal also echoes Subramaniam’s views, saying, once the scale is large the domestic players will get a fair chance of growth, so will the industry. Can Indian players compete with Chinese and American majors, which are playing on the incentives, and grow as well ?

There is hope there. In February, Adani Enterprises and SunEdison formed a joint

### BIG PROMISES

Companies that have planned to set up massive solar power generation capacities

Esvel Inraprojects Limited	Sun Edison Energy India Pvt Ltd	Azure Power	Raasi Solar Energy Pvt Ltd	Hindustan Clean Energy Ltd
12,000	10,000	11,000	10,600	7,000

Figures in MW. Source: IREDA

venture to set up a PV panel manufacturing capacity at Mundra. SunEdison in a communique shared that this JV will invest \$4 billion in next three years. One of the biggest Chinese PV manufacturers, Trina Solar, is in talks with Reliance Industries to set up a similar capacity

### Viability Gap

Unfortunately, most state-run distribution companies - which will eventually buy the more expensive solar power - are in no financial condition to absorb the higher costs. So far, lack of political will has prevented state governments from charging higher rates from consumers. In India, 21 out of 29 state distribution companies are incurring losses. Rajasthan, the state most aggressive in solar power capacities, has a debt burden of a whopping Rs77,453 crore with accumulated losses of almost Rs 6,000 crore. Madhya Pradesh is about Rs 10,000 crore and Rs 5,246 crore, respectively.

Anil Sardana, CEO of Tata Power, remains circumspect. He says the big challenge is creditworthy off-take of power. "The financial health of many distribution companies is poor, causing delays in payment for the power they procure," he adds. Tata Power has 54 MW of installed solar capacity in India, and is expanding its presence in Rajasthan.

Arundhati Bhattacharya Chairperson, State Bank of India, during a discussion on Financing Renewable Energy at the recently concluded Re-Invest, shared her concern about the health of distribution companies, and feared they may refuse to use renewable if it continues to be unviable.

The buck stops here, says, Sujoy Ghosh, CEO of US-based First Solar's India chapter. His company is the world's biggest panel manufacturer and is developing 200 MW capacity in Andhra Pradesh and Telengana. "If the power purchase agreement (PPA) becomes stable and bankable, it will not only make investments viable but will also give confidence to the ecosystem," he says. Today, investors are looking at the off-take surety. Arup Roy Choudhury, Chairman and Managing Director of NTPC, says he will only set up solar plants if state distribution companies assure to buy power at a 'sustainable' tariff.

One option is to bridge the viability gap by issuing tradable renewable energy certificates (RECs) that are bought by polluting industries to meet their carbon reduction commitments. However, REC trading has flopped in India. In 2014/15, the MNRE issued roughly 96 lakh certificates, but only 30.6 lakh could be traded. Out of this, roughly 10 lakh were from solar players alone, though only 39,000 were traded, that too at the floor price. "The health of distribution companies is not great, and most of them don't honour renewable purchase obligations," says Rahul Gupta, Director of Rays Experts, a firm setting up plants in Rajasthan.

### **Tackling Tariff**

One of the biggest challenges Goyal faces is in bringing solar tariff at parity with the grid. New solar units produce power at roughly Rs 6.5 per unit. In comparison, coal based plants produce power at Rs 3 to Rs 4 per unit. This makes solar plants unviable until the government provides subsidies.



The amendments in the Electricity Act, 2003 pending in Parliament mandate thermal generators to add a certain percentage of new capacity from renewable resources. Most of these generators are public-sector companies, and once these amendments become law, these can be pushed ahead. This will allow big thermal companies such as Tata Power, Adani Power, Reliance Power, NTPC, and JSW Energy to leverage their balance sheets and asset base for cheaper debt (they will get a better rating from credit agencies).



capacity. "The government may also ask other profit-making PSUs, such as Coal India and SAIL to invest in solar, adding up to around five to six GW," says a senior RSS leader, actively working in the energy sector. It remains to be seen how their shareholders react as power generation is not their core business. "But they do consume electricity," the leader countered.

In the budget session, Power Minister Goyal clarified that the ministry is not looking for subsidy-based solutions. Mishra and Goyal also pushed other bureaucrats to look for plan B, C and beyond. "All we want is to reduce the tariff by another Rs1," says secretary Tripathy. Solar projects have four cost elements - cost of money, cost of capital, cost of operations and cost of dispatch. The idea is to reduce the cost of money. The Reserve Bank of India (RBI) recently reduced the repo rate by 50 basis points but that's not good enough. Currently, Power Finance Corporation, Rural Electrification Corporation, IFCI and Indian Renewable Energy Development Agency are lending at 12.5 per cent to 13.5 per cent. "At this rate it is difficult to make projects viable," says Mittal of Welspun.

The other idea being debated is bundling expensive solar tariff with the cheaper thermal tariff to arrive at a weighted average tariff. There is roughly 48,000 MW capacity in the country (thermal and hydel) which may retire by 2022, and a majority of this has a tariff of less than one rupee per unit. However, power ministry bureaucrats may puncture this idea. They prefer all ageing plants be refurbished with the supercritical technology to retain their coal linkage, which would be more lucrative, but would increase tariff.

"Our experience around the world says that once the commodity (electricity) comes down it expands the market size," says Ghosh. The Rs 17 a unit tariff saw 50 MW a year addition, and today we are seeing roughly 2,000 MW a year with Rs 6.5 a unit, he adds.





**MAKING HAY WHILE THE SUN SHINES**  
 Rahul Parit's calculated risks have paid off

At any of the floods of Rahul Parit and they say that, unlike his own experience, Parit has the knack for taking calculated risks. Most of them expected him to fail when he cofounded Muzar Power Projects as Hindustan Power Projects, in January 2014. Parit, indeed, was trying to distance himself from the "Hindustan Power group" his father founded here which was in trouble due to massive debt pile-up and had applied for corporate debt restructuring. He made the business, of which his parents were already, India's biggest solar energy operator with installed capacity of roughly 300 MW, spread across West Bengal, Tamil Nadu, Rajasthan, Madhya Pradesh and Gujarat.

While India was still mulling its policies, Parit also covered more mature renewable energy markets such as Spain, Japan, Italy and Germany. His pipeline has 100 MW of additional solar capacity with a value of roughly 2,500 MW by 2017. His company Hindustan Green Energy Ltd has also committed to the 100 MW to install 7,000 MW of solar capacity. Parit is experimenting with technology these days, and has gone on project in Germany. His commitment includes setting up of 1,000 MW of wind projects. Parit also has a portfolio of 620 MW of solar hydroelectric plants in three hot markets and one thermal plant in Madhya Pradesh and Rajasthan, respectively. "Renewables have caught quicker but success on investment. If you place your bet right and manage your portfolio better, you can consistently profit," he says. That's hammering to note.

Meanwhile, at Charanka, the stream of visitors hasn't ebbed since the park was opened. The village now hosts 6,000-odd tourists annually, just to see the farm. A recent high-profile visitor was Bhutan's Prime Minister Tshering Tobgay in January. Whether the Modi-Goyal duo achieve their target or not, any number of solar parks that will be set up around the country will of Hitesh. And if they also

definitely provide local employment to the likes become tourist destinations like Charanka, who would complain if India achieves even a fourth of its target?

Glossary

**REC** : A renewable energy certificate is issued to the operator of a renewable energy unit. This can be traded at the exchanges.

**RPO** : Renewable procurement obligation is a must for distribution companies to buy renewable energy on a predetermined target. This is meant to give renewable energy a push. It also allows discoms to move towards a green energy blend.

**RGO** : It stands for renewable generation obligation. The government is making it compulsory for thermal power companies to add renewable resources in their portfolio.

**FEED-IN-TARIFF**: In this a separate bid is not required for allocation. The promoter can plan power units anytime of the year, and can supply to their consumer as per conditions of PPA and grid rules.

**PV** : Photovoltaic modules convert solar energy into electricity using semiconductors. The photovoltaic method creates electric current or voltage, upon exposure to light.

**OPEN ACCESS** : This is a grid management tool that allows generation companies to directly sell electricity to the consumer. VGF: Viability Gap Funding is a finance tool where a state determines the tariff and assures that the gap will be funded by the state's resources.

**BUNDLING** : This is a new formula the government is developing where certain unscheduled units from thermal and hydel plants with cheaper tariff will be bundled with expensive solar before it is offered to the discoms.

*(This article has been sourced from Business Today)*



Poem

The Lost

Er. U.S. Ravindran (Rtd. EE)

I lost my single some where some while
As life sail from mile to miles
So I put a veil to look me smile
But the veil failed to figure my smile
I lost my mind some where some behind
So I did not find others to mind
Wished I could find when memories received
Would not so kind I became mindly blind
I lost my soul littles somewhere now the whole
Stood to my tall to meet the goal
Tried not to fall, what is really goal ?
I lost my heart some where some apart
That quickly darts and not so tart
Now I thought to be smart
Why live with a heart without a soul

CONGRATULATIONS



കേരള സർവകലാശാലയിൽ നിന്ന് മാനേജ്മെന്റ് സ്റ്റഡീസിൽ പി.എച്ച്.ഡി. ലഭിച്ച കെ.എസ്.ഇ.ബി. എൻജിനീയേഴ്സ് അസോസിയേഷൻ സംസ്ഥാന പ്രസിഡന്റും, കഴക്കൂട്ടം ഇലക്ട്രിക്കൽ ഡിവിഷൻ എക്സിക്യൂട്ടീവ് എൻജിനീയറുമായ ശ്രീ. ഇ. മുഹമ്മദ് ഷെറീഫിന് അനുമോദനങ്ങൾ.

# ഇന്റർനെറ്റ് നിഷ്പക്ഷത

Er. രാജൻ വി.

നെറ്റ് ന്യൂട്രാലിറ്റി (നിഷ്പക്ഷത) ഇന്നൊരു വലിയ ചർച്ചാവിഷയം ആയിരിക്കുകയാണല്ലോ. നെറ്റെന്നുകേട്ടാലുടനെ അഭിപ്രായ സ്വാതന്ത്ര്യമെന്നും തുല്യതയെന്നും പറഞ്ഞ് ബഹളം കൂട്ടുന്ന ഒരു വിഭാഗം നമ്മുടെ ഇടയിലുണ്ട്. ഈ അടുത്ത ദിവസങ്ങളിൽ ഐ.റ്റി. നിയമത്തിലെ 66(എ) വകുപ്പ് കോടതി റദ്ദാക്കിയപ്പോൾ ഈ വിഭാഗം അതിനെ സ്വാതന്ത്ര്യദിനമായിട്ടാണ് ആഘോഷിച്ചത്. നെറ്റിൽക്കൂടി എന്തും പ്രചരിപ്പിക്കാമെന്നാണ് ഇവരുടെ അവകാശവാദം. അടുത്ത കാലത്ത് ഉത്തരേന്ത്യയിൽ ഉണ്ടായ (മറ്റ് രാജ്യങ്ങളിൽപ്പോലും) ഡാമുമായി ബന്ധപ്പെട്ട ലഹളകൾ നെറ്റിൽക്കൂടി പരന്ന കിംവദന്തികളുടെ ഫലമായിരുന്നു. ഇവിടെയൊക്കെ നമുക്ക് നഷ്ടപ്പെടുന്നത് സാമൂഹിക മൈത്രിയും സാമൂഹിക സുരക്ഷയുമാണ്. അതിലൊന്നും പുതുതലമുറയ്ക്ക് പ്രത്യേകിച്ചൊരു താല്പര്യവുമില്ല.

ഇതിനിടയ്ക്കാണ് നെറ്റ് നിഷ്പക്ഷതയെ ചോദ്യം ചെയ്യുന്ന ആശയവുമായി മൊബൈൽ സേവന ദാതാക്കൾ ചിത്രത്തിൽ വന്നത്. 20-25 വർഷം മുന്നേവന്ന ടെലികമ്മ്യൂണിക്കേഷൻ കുതിച്ചുചാട്ടത്തെ പുറംതള്ളിയാണല്ലോ മൊബൈൽ - കമ്പ്യൂട്ടർ ആശയ വിനിമയം നിലവിൽ വന്നത്. അതിന്റെ ഞെട്ടലിൽ നിന്നും നമ്മുടെ ബി.എസ്.എൻ.എൽ. ഇതുവരെ മോചിതരായിട്ടുമില്ല. അതിനകത്ത് ഈ വിഷയത്തിൽ നടക്കുന്ന ആഫീസർ - തൊഴിലാളി തർക്കങ്ങൾക്ക് ഒരവസാനവുമില്ല അതൊക്കെ മറ്റൊരു വിഷയം. പല സ്വകാര്യ ലാൻഡ്

ഫോൺ ദാതാക്കളും പെട്ടെന്ന് തന്നെ മൊബൈൽ രംഗത്തേക്ക് മാറി. പൊതുമേഖല സ്ഥാപനമായ ബി.എസ്.എൻ.എല്ലിന് അത്രപെട്ടെന്ന് മാറ്റങ്ങൾ ഉൾക്കൊള്ളാൻ സാധിക്കില്ലല്ലോ.

ഈവിധം സ്വകാര്യ കമ്പനികൾ അതിന്റെ സ്വതസിദ്ധമായ കഴിവിൽ പിടിച്ചു നിന്നു. ഈ സമയം മറ്റൊരു പ്രതിസന്ധിയുമായി ഫെയ്സ്ബുക്ക്, യൂട്യൂബ്, ഗൂഗിൾ എന്നീ മൊബൈൽ വഴി ലഭ്യമാകുന്ന സേവനങ്ങൾ ഈ ദാതാക്കൾക്ക് പ്രശ്നങ്ങൾ ഉണ്ടാക്കുന്നു, അവരവരുടെ വരുമാനത്തെ കാര്യമായി കുറയ്ക്കുന്നു. പുതിയ മൊബൈലുകൾ സംസാരത്തിനും സന്ദേശങ്ങൾക്കും വാട്സപ്പ് പോലുള്ള സൗകര്യങ്ങൾ പ്രയോജനപ്പെടുത്തുമ്പോൾ സേവനങ്ങൾക്ക് ഡാറ്റാ ചാർജ്ജ് മാത്രമേ കിട്ടുന്നുള്ളൂ, കാൾ ചാർജ്ജാനും കിട്ടുന്നില്ല. ഈ പ്രതിസന്ധി മറികടക്കാൻ അവർ മുന്നോട്ട് വയ്ക്കുന്ന നിർദ്ദേശമാണ്, വാട്സപ്പ് പോലുള്ള ഓവർ ദ ടോപ്പ് (ഒ.ടി.ടി.) സേവനങ്ങൾക്ക് പ്രത്യേകം ചാർജ്ജ് വസൂലാക്കുക. ഈ സൗകര്യം (ഒ.ടി.ടി.) കൂടുതൽ പേർ പ്രയോജപ്പെടുത്തുമ്പോൾ സേവന ദാതാക്കൾ കൂടിയ ബാൻ്റ് ഡിഡ്ത്തും സെർവ്വർ സൗകര്യങ്ങളും ഒരുക്കണം. അതിനുള്ള ചെലവ് വഹിക്കണം പക്ഷെ വരുമാനം കുറയും. ഇതാണവരെ അലട്ടുന്ന പ്രശ്നം. അത് പരിഹരിക്കാനായി ഒ.ടി.ടി. സേവനങ്ങൾക്ക് ആവശ്യാനുസരണം ഒരു മാസവരി കൂടി ഏർപ്പെടുത്തണമെന്നാണ് ടെലികോം സേവന ദാതാക്കൾ ആവശ്യപ്പെടുന്നത്. ☺

വാട്ടർ - പാചക വാതക വൈദ്യുതി- തപാൽ ഈ രീതിയിലുള്ള ചാർജ്ജുണ്ട്. വൈദ്യുതി മേഖലയിൽ പ്രധാനമായും ഏഴ് രീതിയിലുള്ള ചാർജ്ജ് ഉപഭോക്താവിന്റെ ഉപഭോഗത്തിനനുസരിച്ച് നിലവിലുണ്ട്. അതുപോലെ തന്നെ തപാൽ മേഖലയിലും സ്വകാര്യ സന്ദേശം എഴുതുന്നതിനും കമേഴ്സ്യൽ-മത്സര ആവശ്യത്തിനുള്ള പോസ്റ്റ് കാർഡിനും രണ്ട് കുലിയാണ്. അങ്ങനെ ചെയ്താലെ സേവന ദാതാക്കൾക്ക് ലാഭകരമായി പിടിച്ചു നിൽക്കാൻ സാധിക്കൂ. ആദ്യ കാലങ്ങളിൽ തപാൽ വകുപ്പിൽ എല്ലാത്തരം പോസ്റ്റ് കാർഡ് ഉപയോഗത്തിനും ഒരു ചാർജായിരുന്നു. (1980 - കളിൽ പത്ത് പൈസ) ആ സൗകര്യം ഏറ്റവും അധികം പ്രയോജനപ്പെടുത്തിയിരുന്നത് കച്ചവട - വ്യവസായ ലോബികളായിരുന്നു. തപാൽ മേഖല ഇന്നത്തെ പടുതിയിൽ എത്താനുള്ള പല കാര്യങ്ങളിൽ ഒന്നിതായിരുന്നു. പൊതു മേഖല സ്ഥാപനമെന്ന നിലയിൽ ബഡ്ജറ്റ് പിന്തുണയോടെയാണ് കാര്യങ്ങൾ നടന്നിരുന്നത്. ഇന്നിപ്പോൾ വാർത്താവിനിമയ രംഗത്ത് സ്വകാര്യമേഖലയ്ക്കാണ് പ്രാമുഖ്യം. ലാഭനഷ്ടങ്ങൾ നോക്കിയെ അവർ കാര്യങ്ങൾ ചെയ്യും. അങ്ങനെയെ ചെയ്യാവുന്നതല്ല ഉള്ളതാണ് ബിസിനസ്സിന്റെ ബാലപാഠം.

ഈ വിഷയം ഇപ്പോൾ ട്രായിയുടെ പരിശോധനയിലാണ്. വിഷയത്തെക്കുറിച്ചുള്ള വ്യക്തമായ ഒരു നയരേഖ പൊതു ചർച്ചയ്ക്കായി നെറ്റിൽ നൽകിയിട്ടുണ്ട്. താല്പര്യമുള്ളവർക്കെല്ലാം അഭിപ്രായങ്ങൾ അറിയിക്കാം. വെറുതെ ഉപരിപ്ലവമായി വിഷയത്തെ സമീപിച്ചിട്ട് കാര്യമില്ല. നെറ്റിൽ കുടി കുറെ 'വൈറൽ' ബഹളം ഉണ്ടാക്കിയാലൊന്നും പരിഹാരം ഉണ്ടാകില്ല. തപാൽ വകുപ്പിന്റെ പതനത്തിന്റെ വെളിച്ചത്തിൽ എല്ലാ വാണിജ്യ താല്പര്യങ്ങളും സംരക്ഷി

ക്കപ്പെടുന്ന ഒരു നിയമമാണ് വേണ്ടത്. കൂടാതെ വ്യക്തികൾ നെറ്റ് സൗകര്യങ്ങൾ പ്രയോജനപ്പെടുത്തുന്നത് ആവശ്യാധിഷ്ഠിതമായി നിയന്ത്രിക്കുക. ആധുനിക സാങ്കേതിക വിദ്യയുടെ മികവ് കാരണം നെറ്റും മൊബൈലും ഏതാണ്ട് രാജ്യം മുഴുവൻ ലഭ്യമാണ്. ആ സൗകര്യത്തെ വിവേകത്തോടെ മാത്രം മാത്രമേ ഉപയോഗിക്കുകയെന്നുള്ളതും സാമാന്യതത്ത്വമാണ്.

ടെലികോം രംഗം പല മാറ്റങ്ങൾക്കും വിധേയമാകുന്ന സമയമാണിത്. ലാൻഡ് ഫോണിൽ നിന്നും പേജറിൽകൂടി മൊബൈലിൽ എത്തിയപ്പോൾ ഒ.ടി.ടി. സൗകര്യങ്ങളും ലഭ്യമായി. അതോടെ വിവരവും അറിവും നമ്മുടെ വിരൽത്തുമ്പിലായി. ഇനിയും പല മാറ്റങ്ങളും പ്രതീക്ഷിക്കാത്തനേരത്ത് നമ്മുടെ മുന്നിലെത്താം. ആ മുന്നേറ്റങ്ങളെ തടസപ്പെടുത്തുന്ന രീതിയിലുള്ള കാര്യങ്ങൾ ചെയ്യാതിരിക്കുകയാണ് നല്ലത്. ഒ.ടി.ടി. സൗകര്യങ്ങൾ പ്രയോജനപ്പെടുത്തുന്നവർ അധികവും കച്ചവട- വ്യാപാര- വിനോദ താല്പര്യങ്ങൾ ഉള്ളവരാണ്. സാധാരണ ജനത്തിന് അതിന്റെ ആവശ്യമൊന്നുമില്ല. പുതിയ സൗകര്യങ്ങൾ പ്രയോജനപ്പെടുത്തുന്നവർ അതിനുള്ള ചാർജ്ജ് നൽകണമെന്ന് പറയുന്നത് വലിയ അനീതിയൊന്നുമല്ല. അതിന് നമ്മൾ തയ്യാറല്ലായെങ്കിൽ സേവന ദാതാക്കൾ കാൾ - മെസേജ് ചാർജ്ജുകൾ കൂട്ടും. വിശേഷിച്ചും പുതിയ ടെൻഡറിൽ വളരെ കൂടിയ തുകകൾക്കാണ് ല്ലോസ് പെക്ട്രം ലേലം കൊണ്ടിരിക്കുന്നത്. ഇതൊക്കെ കണക്കാക്കിയുള്ള ചാർജ്ജ് വർദ്ധന പൊതുജനത്തിന് താങ്ങാൻ പ്രയാസമായിരിക്കുന്നു. ഈ കാര്യങ്ങളൊക്കെ പരിഗണിച്ചായിരിക്കും ട്രായ് ഒരു തീരുമാനം എടുക്കുകയെന്ന് വിശ്വസിക്കാം.



# മദ്യത്തിനുവേണ്ടിയുള്ള മുടന്തൻ ന്യായങ്ങൾ

ഇ.എം. നസീർ, ചിറയിൻകീഴ്  
(റിട്ട. എക്സിക്യൂട്ടീവ് എഞ്ചിനീയർ)

കുറച്ചൊളംകളുടെ തൊഴിലില്ലായ്മയും സർക്കാരിന്റെ സാമ്പത്തിക പ്രതിസന്ധിയും പരിഹരിക്കാൻ മദ്യലഭ്യത എളുപ്പവഴിയായാണെന്ന് സ്ഥാപിക്കുകയാണ് രാഷ്ട്രീയക്കാരിൽ മിക്കവരും. അവർക്കതിന്റെ പ്രയോജനവുമുണ്ട്.

മദ്യനിരോധനമേർപ്പെടുത്തുമ്പോൾ അതുമായി ബന്ധപ്പെട്ടു പ്രവർത്തിക്കുന്ന ചിലർക്ക് തൊഴിലില്ലാതാകുമെന്ന് ഒരു യാഥാർത്ഥ്യമാണെങ്കിലും കാതലായ ചില കാര്യങ്ങൾ നാം പരിശോധിക്കേണ്ടതായുണ്ട്.

മദ്യവുമായി ബന്ധപ്പെട്ട് പ്രവർത്തിക്കുന്നവർ മറ്റുതൊഴിലുകൾ ചെയ്തുകൂടെന്നില്ലല്ലോ. അമ്മയുടെ ഉദരത്തിൽ വെച്ചുതന്നെ മദ്യവുമായി ബന്ധപ്പെട്ട തൊഴിൽ മാത്രമേ ചെയ്യുമെന്നൊന്നും ആരും ശപഥം ചെയ്തിട്ടില്ല. ഇത്തരം തൊഴിൽ മാത്രം ചെയ്യാൻ നിർബന്ധിതരാക്കുന്ന നേർച്ചക്കടവും ആർക്കുമില്ല.

സത്യസന്ധമായും മാനുഷമായും പണിയെടുക്കാവുന്ന നിരവധി തൊഴിലവസരങ്ങൾ മലയാളികൾ പ്രയോജനപ്പെടുത്താതെയുണ്ട്. അന്യസംസ്ഥാന തൊഴിലാളികൾ ഈ മേഖല കൈയടക്കിവരുന്നു. ഇവർ ഭാവിയിൽ നമുക്കുതന്നെ തലവേദനയാകുമെന്നതും ആരും കാര്യമായെടുക്കുന്നില്ല. അൽപന് എശ്വര്യം വന്നപോലെയാണ് മലയാളികളുടെ ഇപ്പോഴത്തെ സ്ഥിതി. എണ്ണ

പ്പണം കണ്ട് മതിമറന്നഹങ്കരിച്ച സുഖലോലുപരും മടിയന്മാരുമായ അറബികളെപ്പോലെയായി നമ്മുടെയാളുകൾ.

പ്രത്യേക യോഗ്യതകളോ പരിചയമോ വൈദഗ്ധ്യമോ പരിശീലനമോ ഒന്നും ആവശ്യമില്ലാത്ത ജോലികൾ മാത്രമേ മദ്യമേഖലയിലുള്ളൂ. അതുകൊണ്ടുതന്നെ മറ്റു മേഖലകളിലെ ജോലികൾ ചെയ്തെന്നു വെച്ചു നഷ്ടങ്ങളൊന്നും സംഭവിക്കാനില്ല.

കുറ്റവാളികളില്ലാതെയായാൽ പോലീസുദ്യോഗസ്ഥരും അഭിഭാഷകരും മജിസ്ട്രേറ്റുമാരും, ജഡ്ജിമാരും തൊഴിൽരഹിതരായിപ്പോകുമെന്ന് കരുതി കുറ്റകൃത്യങ്ങളെ പ്രോത്സാഹിപ്പിക്കാനാകുമോ? ആശുപത്രി ജീവനക്കാർക്കും ഡോക്ടർമാർക്കും ജോലിയില്ലാതാകുമെന്ന് ഭയന്ന് രോഗികളെ സൂഷ്ടിക്കാനാകുമോ? ശവപ്പെട്ടി കച്ചവടക്കാരന് കൊന്നൊടുക്കാനാകുമോ? ലൈംഗിക തൊഴിലാളികളെന്ന പുനർ നാമകരണത്തോടെ മാനുഷ ലഭിച്ചവരുടെ അന്തസ്സുള്ള (?) തൊഴിലിനെ, ജോലി നഷ്ടപ്പെടുമെന്ന ആശങ്കയിൽ, പ്രോത്സാഹിപ്പിക്കാനാകുമോ?

മദ്യമില്ലാതെയായാൽ വിദേശ ടൂറിസ്റ്റുകൾ വരില്ലായെന്ന വാദം ശുദ്ധ അസംബന്ധവും തെറ്റിദ്ധരിപ്പിക്കലുമാണ്. ബ്രിട്ടീഷുകാർ ഇന്ത്യഭരിച്ചിരുന്ന കാലത്ത് ഇവിടെ എത്ര ബാർ ഹോട്ടലുകളുണ്ടായിരുന്നു. ? ലഭ്യമായിരുന്ന പരിമിത സൗകര്യങ്ങളിൽ

തുപ്തരായി അവർ ഇവിടെ ജീവിച്ചിരുന്നല്ലോ. ബാറുകൾ നന്നേ കുറവായിരുന്ന ഏതാണ്ട് മുപ്പതുവർഷങ്ങൾക്കുമുമ്പ് കള്ളുഷാപ്പുകളിലും മദ്യപരുടെ ക്യൂ ഒന്നും ഉണ്ടായിരുന്നില്ല. മാറി മാറി അധികാരത്തിൽ വന്ന സർക്കാരുകളുടെ പരോക്ഷമായ മദ്യപ്രോത്സാഹന നയമാണ് സ്ഥിതിഗതികൾ ഇന്നത്തെ നിലയിലെത്തിച്ചത്. നമ്മുടെ നാടും സംസ്കാരവും ജീവിതവും കാണാൻ താല്പര്യമുള്ളവർ മാത്രമേ ടൂറിസ്റ്റുകളായി ഇവിടെ വരാവൂ. അവരുടെ പ്രാകൃത സംസ്കാരം പ്രചരിപ്പിക്കാനാകുന്നത് മദ്യപിക്കാനും അനാശാസ്യങ്ങൾക്കുമായി വരുന്നവരെ ടൂറിസ്റ്റുകളെന്ന ഓമനപ്പേരിൽ സ്വീകരിച്ച് സൽക്കരിച്ചു വരുന്നതിന്റെ തിക്തഫലം കണ്ടുതുടങ്ങിയിട്ടും അധികൃതർ പിന്തിരിയാതിരിക്കുന്നതാണ് കഷ്ടം.

കുറുക്കൻ കൗശലമുള്ള ജീവിയാണെങ്കിലും ചീഞ്ഞുപുഴുത്തു നാറിയതേ ഭക്ഷിക്കൂ. നല്ല മാംസം കിട്ടിയാലും എവിടെയെങ്കിലും കുഴിച്ചിട്ട് അഴുകി ദുർഗന്ധം വമിച്ചാലേ അവറ്റകൾക്കു രുചിക്കൂ, ദഹിക്കൂ.

മദ്യത്തിലൂടെ പണമുണ്ടാക്കുന്നവർക്കും ഇതേ 'കുബുദ്ധി'യാണ്. പരിഷ്കാരമെന്ന മിഥ്യാബോധത്തിൽ പാശ്ചാത്യസംസ്കാരം സ്വീകരിച്ചുവരുന്നത് നമ്മുടെ സംസ്കാരശോഷണത്തിനും മൂല്യത്തകർച്ചക്കുമിടയാക്കുന്നു.

മദ്യനിരോധനമൂലം തൊഴിൽ രഹിതരാകുന്നവരെ മുഴുവൻ കാർഷികരംഗത്ത് വിന്യസിച്ചാൽപോലും നമുക്കാവശ്യത്തിനു വേണ്ടവരെ കിട്ടില്ലായെന്നതാണ് വസ്തുത. ഈ സാഹചര്യത്തിലാണ് തൊഴിലില്ലായ്മയുടെ പേരിൽ മാധ്യമങ്ങളും രാഷ്ട്രീയക്കാരും ചേർന്ന് മുതലക്കണ്ണീരും കള്ളക്കളിയുമായി ജനങ്ങളെ പറ്റിച്ചു വരുന്നത്.

പൊങ്ങച്ചവും ധൂർത്തും ആർഭാടവും കൊണ്ട് പേക്കുത്തുകൾ കാട്ടി മേൽവിലാസമുണ്ടാക്കാൻ പാഴ് വേലകൾ ചെയ്യുന്ന പുത്തൻപണക്കാരിൽ നിന്ന് വൻതോതിൽ ആഡംബര നികുതി ഈടാക്കിയാൽ മാത്രം മതിയാകും, മദ്യത്തിൽ നിന്നുള്ളതിനെക്കാൾ വരുമാനം സർക്കാരിനു ലഭിക്കാൻ.



### Letters to the Editor

#### കത്തുകൾ അയക്കേണ്ട വിലാസം



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## BOARD ORDERS

### KERALA STATE ELECTRICITY BOARD LIMITED

(Incorporated under the Indian Companies Act, 1956)



Reg. Office: Vydyuthi Bhavanam, Pattom, Thiruvananthapuram - 695 004, Kerala  
website: www.kseb.in. CIN :U40100KL2011SGC027424

#### Abstract

Establishment - Extension of benefits contemplated in "Persons with Disabilities Act, 1995" to employees disabled due to work place accidents - Sanctioned - Orders issued.

#### CORPORATE OFFICE (ADMINISTRATION)

B.O. (DB) No.839/2015 (Estt.I/7866/2013). Dated, Thiruvananthapuram, 04.04.2015.

#### ORDER

Sri. Shine. K.S, Lineman I, Electrical Section, Kidangoor, Kottayam who met with a non-fatal accident on 07.04.2011 during the course of employment was sanctioned Special Disability Leave for three years with effect from 08.04.2011 to 06.05.2014 in five different spells vide proceedings read 2<sup>nd</sup> above of the Chief Engineer (HRM). The accident occurred to Sri. Shine was during the course of employment when he fell down from the ladder due to electric shock while disconnecting a service connection. Due to the fall, he suffered severe spinal injuries resulting in paralysis and restricted movement of the body. Considering the pathetic condition of the accident victim and the fact that the disability was due to work place accident the Special Disability Leave was extended for a further period of one year with effect from 07.05.2014 vide Board Order read 4<sup>th</sup> above. Later full pay was granted for six months with effect from 11/2014 to 4/2015 as a special case vide Board Order read 5<sup>th</sup> above.

The State Commission for persons with disabilities in their letter read 3<sup>rd</sup> above informed that the disability of Sri. Shine is 80% and he is entitled to the benefits laid down in "The Persons with disabilities Act, 1995." The matter was placed before the Full Board and the Board of Directors in its 18<sup>th</sup> meeting held on 21.02.2015, resolved to

1. ratify the decision dated 18.10.2014 of the Chairman & Managing Director to sanction Special Disability Leave to Sri. Shine. K.S, Lineman I, Electrical Section, Kidangoor for a further period of 1 year with effect from 07.05.2014.
2. extend the benefits contemplated in "Persons with Disabilities Act, 1995" to Sri. Shine. K.S, Linemen I, Electrical Section, Kidangoor. The Chief Engineer (HRM) shall take necessary steps to shift the employee to some other post with the same pay scale and service benefits, and if that is not possible keep him on a supernumerary post until a suitable post is available or he attains the age of superannuation, whichever is earlier.

Also resolved that similar cases of employees disabled due to work place accidents shall be given the same benefit with the approval of Full Time Directors and the matter reported to Board of Directors.

Orders are issued accordingly.  
By Order of the Director Board,  
Sd/-

R. RAJASEKHARAN NAIR SECRETARY (ADMINISTRATION)



**KERALA STATE ELECTRICITY BOARD LIMITED**

(Incorporated under the Indian Companies Act, 1956)

Reg. Office: Vyduthi Illovasara, Pattam, Thiruvananthapuram - 695 084, Kerala

website: www.kseb.in. CIN: L140180KL201129CC027424

**Abstract**

Establishment - Promotion of Executive Engineers (Electrical) to the cadre of Deputy Chief Engineers (Ele) and transfer and postings of Deputy Chief Engineers (Ele) - Sanctioned - Orders issued.

**CORPORATE OFFICE (ADMINISTRATION)**

B.O. (FTD) No.984/2015 (Estt.II/3394/2015). Dated, Thiruvananthapuram, 23.04.2015.

Read:- (1) B.O.(FTD) No.290/2015 (Estt.II/UDPC/2015) dated 03.02.2015.

(2) B.O.(FTD) No.983 (Estt.II/25/2015) dated 23.04.2015.

**ORDERS**

The Following senior most Executive Engineers (Ele) are promoted and posted to the cadre of Deputy Chief Engineer (Ele) with immediate effect.

Sl. No.	Name	Present Office	Office to which posted
1	Sri. Anilkumar. P.K	Executive Engineer, Electrical Division, Neyyattinkara	Deputy Chief Engineer, Electrical Circle, Thodupuzha.
2	Sri. Sidharthan P.B	Executive Engineer, LD Station, Kalamassery	Deputy Chief Engineer, Generation Circle, Meenout.
3	Smt. Mini. P. Nayar	Executive Engineer, Office of the Director (SCM & Gen-Ele)	Deputy Chief Engineer, Electrical Circle, Vadakara

The promotion ordered above are purely provisional as per the relevant rules adopted by the Board and without prejudice to the claim of seniors, if any. If the officer promoted does not join duty within 15 days from the date of order, it shall be presumed that the officer has not accepted the promotion and the promotion order with respect to such officer will stand cancelled and the financial benefits, if any, availed by such officer on account of grade promotion to the grade of Deputy chief Engineer shall be recovered in lump, as per rules.

The following transfers and postings of Deputy Chief Engineers (Ele.) are also ordered with immediate effect.

Sl. No	Name	Present Office	Office to which posted
1	Smt. Mini George	Electrical Circle, Nilambur	O/o the Chief Engineer (Distribution-South), Power House, Thiruvananthapuram vice Smt. Mary Felicitia transferred
2	Smt. Susan Joseph	Electrical Circle, Kattakkada	Electrical Circle, Nilambur vice Smt. Mini George transferred
3	Smt. Mary Felicitia	O/o the Chief Engineer (Distribution-South), Power House, Thiruvananthapuram	O/o the Chief Engineer (Distribution-Central), Ennakulam vice Sri. R. Suku promoted as Chief Engineer

4	Sri. Sasankan Nair, C.S	D/o the Director (SCM & Gen-Ele), Vidyuthi Bhavanam, Pattom	Electrical Circle (Rural), Kattakoppa, Trivandrum vice Smt. Susan Joseph transferred
5	Smt. Sudhadevi. D	Electrical Circle, Vadakara	D/o the Director (SCM & Gen-Ele), Vidyuthi Bhavanam, Pattom vice Sri. Sasankan Nair, C.S transferred.

The transfers and postings ordered above are in the exigencies of service and in public interest.

HRIS may be updated before relieving the officers.

By Order of the Full Time Directors,

Sd/-  
R. RAJASEKHARAN NAIR,  
SECRETARY (ADMINISTRATION)

To

1. The Chief Engineer (HRM), Kerala State Electricity Board Limited.
2. The Officers concerned.

Copy to:

The Chief Vigilance Officer,  
The Legal Adviser & Disciplinary Enquiry Officer.  
All Chief Engineers (Ele. & Civil).  
The Financial Adviser/The Chief Internal Auditor.  
The TA to Chairman and Managing Director/Director (Distn. & Safety)/  
Director (Trans. & System Operation.)/Director (Gen. – Civil)/  
Director (SCM & Gen. Ele.)/Director (Renewable Energy & Planning).  
The P.A. to Director (Finance)/Senior CA to Secretary (Administration).  
The Senior Superintendent, Gradation.  
The Fair Copy Superintendent.  
Library/Stock File.

Forwarded / By Order

  
Senior Superintendent

## KERALA STATE ELECTRICITY BOARD LIMITED



(Incorporated under the Indian Companies Act, 1956)  
Reg. Office: Vydyuthi Bhavanam, Pattom, Thiruvananthapuram - 4, Kerala  
website: www.kseb.in. CIN :U40100KL2011SGC027424

### Abstract

Sub: Pre-check of bills - enhancement of monetary limits - Sanctioned - Orders issued.

### CORPORATE OFFICE (AUDIT)

B.O. (CMD)No.933/2015 (RCA/General/2015) Dated, Thiruvananthapuram, 17.04.2015

- Read:-
- 1) B.O.(CM) No.709/12(CIA/Estt.GL/2012) Dated 30.03.2012.
  - 2) B.O.(FM) No.2042/2010(MG/ARU/2007) dated 03.08.2010.
  - 3) B.O.(FM) No.2255/2012(M(T&GO)/T2/precheck/Advance payment/12-13) dt.27.11.2012
  - 4) No te No.RCA/General/2015 dtd.18.03.2015 of the Chief Internal Auditor

### ORDER

The system of pre-check introduced in Civil Wing during January 1968 was extended to the Transmission Wing vide Board Order read as 1<sup>st</sup> paper above and it was then extended to the System Operation Circles and Office of the Chief Engineer (IT). The monetary ceiling of bills (Capital and R & M) for pre-check was last raised in August 2010 from ₹ 25,000 to ₹ 50,000 vide Board Order read as 2<sup>nd</sup> paper above. In respect of bills of R & M works, it was further increased to ₹ 1 lakh in November 2012, vide Board Order read as 3<sup>rd</sup> paper above.

The Chief Internal Auditor (CIA) vide note read as 4<sup>th</sup> paper above, proposed to enhance the monetary limits stating that the introduction of pre-check system in the Transmission wing resulted in increased out turn of bills for pre-check.

After enhancement of monetary limits by the Board in August 2010 and November 2012, the Board has revised the Schedule of Rates in 2012 and at present the rates as per the CPWD Schedule of Rates 2014 are being followed. This has resulted in increased money values of contracts / bills whereas the ceiling remains the same as fixed in 2012.

Accordingly, it was proposed to increase the limit to ₹1 lakh in respect of both Capital and R&M works/ purchases from the present limit of ₹ 50,000 (Capital works / purchases) and ₹1,00,000 (R&M works / purchases).

Having considered the matter in detail, the Board decided to revise and re-fix the financial limit for pre-check of bills of capital works and purchases as follows, w.e.f. 01.04.2015 without any change in the financial limit for R & M works / purchases.

Nature of Bills	Present financial ceiling for pre check (₹)	Revised financial ceiling for precheck(₹)
Capital Works /Purchases	50,000	1,00,000
R & M Works / purchases	1,00,000	1,00,000

By Order of Chairman & Managing Director

Sd/-

**R. RAJASEKHARAN NAIR,**  
SECRETARY (Administration).

## ☛ Kasaragod solar park could provide relief to power crisis

The Solar Energy Corporation of India (SECI)'s solar power parks, which are scheduled to come up in Kasaragod, could provide some respite to the ever-increasing power crisis in the state, especially the Malabar region. The project aims to set up solar park in three localities in the district, spread over 1,100 acres, with a total capacity of 200MW, said SECI managing director Ashwini Kumar.

The SECI has already signed two tripartite arrangements in this connection and the work is expected to start once the land is handed over to the implementing agency. While the first one is with the KSEB and Tehri Hydroelectric Development Corporation India Limited (THDCIL) for a 50MW project, the second one, which is also for 50MW, is with KSEB and Indian Renewable Energy Development Agency (IREDA). This apart, the ministry of new and renewable energy (MNRE) has proposed another 100MW to be set up in the Kasaragod Solar Park under its proposed 2,000MW viability gap funding (VGF) scheme of the Centre, said Ashwini Kumar. The entire project would get a central government assistance of Rs 40 crore.

The first phase could be completed by March 2016, if the land is handed over to the implementing agency immediately, which requires 1,100 acres of land for the entire project. Unlike conventional power projects, the implementation time is very less for solar plants, according to KSEB officials. Since the thermal power plant project in Cheemeni in Kasaragod did not take off as planned earlier, this is seen as a viable alternative. The revenue officials said they had already identified the land for the solar park and in all possibility it would be handed over on lease to SECI once the project get approval from the state government. "We have identified 207 acres of revenue land in Meencha and Paivalige villages, while 500 acres would be made available in Ambalathara and 400 acres in Kinanoor Karinthalam," said additional district magistrate (ADM) Dinesan H. For the first five years SECI would be exempted from the lease amount and later an amount would be fixed for the purpose. Once the solar park becomes fully operational, it could meet the power requirement of nearly two lakh households.

(Source : ToI)

# Indian Power Sector Roundup

## ☞ States to get lion's share in new power equation



A new power equation appears to be emerging between the Centre and states. The power ministry is willing to allow states, which approach central generation utilities for projects in their territory, to retain 85 per cent of electricity from such units. The new approach is expected to galvanize state governments into walking the extra mile for the projects. Higher share of power is expected to make state governments cooperate and expedite

land acquisition, environmental and forest clearances, water allocation, relief and rehabilitation of displaced persons as well as support in maintaining law and order situation at the project site.

All these issues have emerged as roadblocks for big projects. The fresh approach has the potential to immediately benefit West Bengal, Bihar, Andhra Pradesh and Telangana. All of them have separately approached NTPC, NHPC and SJVN (Satluj Jal Vidyut Nigam Ltd, a joint venture between the Centre and the Himachal government) for setting up large power plants and demanded 85 per cent to 100 per cent power from these projects for themselves. "The ministry has no problem to allow states to consume 85 per cent of power from projects set up by the central utilities at their behest. But 15 per cent of the power would have to remain under the Centre's control as unallocated quota for meeting sudden demand or shortfall in any region or state," a top power ministry functionary told TOI. Sources said the ministry was not in favour of making any changes in the Gadgil formula, an arrangement for allocation of central resources among states. States that are planning projects with central utilities can approach the ministry on a case-by-case basis. Under the present power-sharing formula, host states where central generation projects are located are entitled to 10 per cent of generation. The Centre keeps 15 per cent for itself, while 75 per cent is distributed among states in the region as per their consumption and central plan assistance in the preceding five years. This formula was drawn up years ago when central generation projects used to be set up with budgetary support. This has changed over the years. The central utilities now operate as commercial entities and most of the projects are set up with a debt-equity ratio of 70:30 and do not enjoy any budgetary support. Bihar would benefit from three projects of 1,320MW each – at Lakhisarai, Pirpainti and Buxar – under the new formula. Bengal would benefit from the 1,320MW project

at Katwa in Burdwan district. Andhra would benefit from the 4,000MW Pudimadaka project and Telangana from Ramagundam Stage IV of 1,600MW and another phase of 2,400 MW. Telangana would have the additional benefit under the AP Reorganization Act of 2014, entitling it to 100 per cent power from these projects.

(Source : ToI)



## India's electricity generation crosses 1 trn units a yr, first time



India's electricity generation touched the 1 trillion units mark during 2014-15 for the first time, showing a growth of 8.4 per cent over the previous year. Since 1991-92, the compounded annual growth rate of electricity generation has been around 5 to 6.6 per cent, said a government report.

The biggest contributor was the coal-based power stations which recorded an annual growth rate of 12.1 per cent. Out of 22,566 MW added during the year 2014-15, the contribution of thermal power sector was significant i.e. 20,830 MW (92 per cent of the total). The report said government's focus has increased on power transmission and distribution. "Steps were taken by the government for expediting forest clearances and intensive monitoring of critical transmission lines. 22,101 circuit kilometers (ckm) of transmission lines have been commissioned during the year 2014-15 against 16,748 ckm commissioned during the same period last year, thus having a growth of 31.96% which is the highest ever achievement in a single year," it said.

The government data analysis also said due to huge capacity addition along with higher generation and improved transmission capacity resulted in reducing electricity energy shortage from a level to 3.6 per cent from 7 to 11 per cent during the last two decades. Among the new plants added are NTPC's 660 MW unit at Barh in Bihar, which is the first indigenously manufactured super critical unit. NHPC and SJVNL completed their projects at Parbati III and Rampur respectively. The gas based Monarchak Power Plant of 65.4 MW, Agartala ST-II of 25.5 MW and Palatana Unit-II of 363.3 MW were also commissioned during the year in Tripura which will benefit the entire North East.

(Source : Business Standard)



## Power charges: Leeway to be tightened



The central government plans to tighten the regulations for setting power rates, by asking electricity regulators to “necessarily” be guided by the new policy while framing regulations under Section 61 of the Act in question. State regulators twist the regulations according to their requirement, said a former member of the Central Electricity Regulatory Commission (CERC). “Now, they’d have to remain in the perimeter of the policy. It would be binding on them to take regulatory

decisions as per the amended policy and not as per need,” he said. The draft national policy is proposed to read: “The Act also requires CERC and State Electricity Regulatory Commissions shall necessarily be guided by the tariff (rate) policy in discharging their functions, including framing the regulations under Section 61.”

Section 61 of the Electricity Act empowers regulators to set terms for determination of rates.

The government has also proposed to allow an increase in fuel cost on account of import to be included in the rate structure. “In case of reduced quantity of coal supplied by Coal India, vis-a-vis the assured quantity of 85 per cent, the higher cost of imported/market-based e-auction coal for making up the shortfall shall be considered for being made a pass-through by CERC/SERCs, on a case-to-case basis, to the extent of shortfall,” goes an amendment. Other major components such as foreign exchange fluctuations, cost of land acquisition and other clearances should have been part of the rate but are ignored, said a senior power sector executive. “Projects stuck for these reasons will continue to remain stranded,” he said. Power generators, however, are to be given the freedom to sell surplus power in the spot market if the beneficiary doesn’t give two days prior notice. It is presently 10 hours.

A major addition to the objective of the policy is promotion of renewable generation sources and the aim to create more competition, efficiency in operations and improvement in quality of power supply.

On recommendations in the policy to incentivise the distribution companies to procure power from renewable sources, the central government may notify, from time to time, an appropriate bid-based rate framework for renewable energy. The policy has recommended a set of a little more than 30 amendments in the existing rate structure, formed as a continuation of the National Electricity Policy, 2005.

In a first, the draft also underlines norms for ancillary services. The central commission has been given the right to introduce the norms and framework for ancillary services necessary to support the power system or grid operation for maintaining power quality, reliability and security of the grid, including the method of sharing the charges.

### Selective consultations

The draft policy uploaded on the ministry of power website last week invites comments from the public, as is the case with major draft regulations. However, when private sector stakeholders tried sending their comments and suggestions, they were told by the ministry of power that comments only from states and state-run utilities have been invited. "It is surprising to note that the ministry of power has not invited comments from the private sector on the proposed changes. With the increasing share of the private sector, stakeholders' consultation would be incomplete," said A K Khurana, director general, Association of Power Producers, the representative body for private power generators.

Privately-owned power generation and transmission companies, associations and consumer rights bodies have all been kept out of the consultation.

(Source : Business Standard)

### ☞ NITI Aayog in talks with stakeholder ministries to give shape to National Energy Policy



The government's National Energy Policy will bear a strong imprint of its think tank NITI Aayog, which has already started preliminary discussions with stakeholder ministries to draft a blueprint for India's energy road map to help meet the country's growing demand for solar, wind, gas and coal energy. "My colleagues at NITI Aayog will contribute to the National Energy Policy along with key ministries," Aayog vice chairman Arvind Panagariya said on Monday, adding that discussions are at a preliminary stage. He

said power, coal and oil ministries will be consulted while framing the policy. The move is aimed at boosting power generation in the country from various sources such as solar, wind, gas and coal to meet the growing demand. At present, the country has an installed power generation capacity of over 250,000 MW from all sources while the peak power deficit is about 3.6 per cent.

**PROBLEM AREA**

Part of the solution to India's energy problem lies with states as energy discoms, which are extremely critical, are states' subject

ARVIND PANAGARIYA  
NITI Aayog Vice Chairman

**HELPING HAND**

Discoms are financially in an extremely weak state and if they are bankrupt, electricity producers will not trust them. This would be taken up by NITI Aayog



The government has set an ambitious target of generating 175,000 MW from renewable sources by 2022, including 100,000 MW of solar power.

The National Institution for Transforming India or the NITI Aayog, set up with a primary objective of fostering cooperative federalism between the Centre and the states, will also work to help electricity distribution companies or discoms become financially stable by coordinating between states that are responsible for these discoms and the central ministries.

"Part of the solution to India's energy problem lies with states as energy distribution companies or discoms, which are extremely critical, are states' subject. Discoms are financially in an extremely weak state and if they are bankrupt, electricity producers will not trust them. This would be taken up by NITI Aayog," Panagariya said while speaking at the Indian Energy Outlook workshop, jointly organised by the IEA and NITI Aayog.

Highlighting that India has a growth potential of 8-10 per cent over the next 10-15 years, he said India's energy demands are going to grow by leaps and bounds." At an average growth rate of 8-10 per cent India is likely to be \$8 trillion economy in next 15 years as compared to \$2 trillion to rival the Chinese economy. But this would come with a huge increase in India's energy demands," Panagariya said. Commenting on the consequence of huge energy consumption in the country leading to the issues of climate change, Panagariya said that India is not the largest polluter and still much of the responsibility for climate change lies with the US, Europe and China, where energy consumptions are way more than in India." However, India still needs to promote clean energy for its domestic needs and purely on health grounds," he said, adding that the Narendra Modi-led government is urging influential people to give up their LPG subsidy so that this money could be used to provide clean energy to households that are deprived of it.

(Source : ET)



## Government planning to vet power usage pattern & charge more for consumption during peak hours



Using the washing machine at night may help you save on your electricity bill. The government plans to introduce a time-of-day power tariff structure for residential customers, where peak-hour prices will be costlier than non-peak rates, after getting data on supply and consumption of electricity, coal, petroleum and renewable energy. NITI Aayog, the government think tank tasked with creating a knowledge support system through collaboration with national and international experts, will soon set up an energy

data management cell. This unit will uncover India's energy consumption pattern in a more comprehensive and detailed manner in coordination with half-a-dozen ministries and departments. The think tank will monitor the usage of electronic appliances and spot a trend that will eventually form the basis for the introduction of time-of-day tariffs for residential customers.

It has tied up with the US Energy Information Administration, an agency that collects, analyses and disseminates independent and impartial energy information to promote sound policymaking, efficient markets and public understanding of energy and its interaction with the economy and the environment.

Time-of-day tariff is a structure that offers different rates for use of electricity, depending on the time of the day. Its objective is to reduce power consumption during peak hours. To do this, charges are reduced during off peak hours as an incentive for people to use electricity at those times rather than during peak hours, when it would be more expensive.

This means using appliances at certain times will be cheaper than using them at other times. In India, time-of-day tariff is used for the industrial and commercial sectors. With limited resources and rising demand, the government plans to provide detailed consumption pattern to distribution companies to implement it for residential customers as well. "We have set up a sustainability growth working group in association with the Energy Information

Administration of the US to improve energy data management in the country, which could eventually be used by stakeholders to determine their usage based on different tariffs," a senior government official told ET. According to the official, who did not wish to be identified, there will be a dedicated energy data management cell within NITI Aayog, one that may evolve into an independent energy data organisation similar to the EIA. The cell will work in coordination with the ministries of petroleum, coal and renewable agency, besides the ministry of statistics, to source data.

(Source : ET)

### Steps set for to Cut Down Power Bills

- WILLARCO will set up an energy data management cell to gather data on energy consumption
- These data will monitor usage of electronic appliances to get cost
- The ministry will also introduce time-of-day power tariff structure for residential customers
- The tariff will provide an incentive for people to use electricity at those times rather than during peak hours
- In India, time-of-day tariff is used for industrial and commercial sectors

## Canada to supply uranium to India under landmark deal

Canada agreed to supply 3,000 metric tonnes of uranium to energy-hungry India from this year under a USD 254 million five-year deal to power Indian atomic reactors, four decades after bilateral cooperation in this sector was frozen over India's nuclear programme. The agreement for uranium supply, which came two years after protracted negotiations following the 2013 civil nuclear deal between India and Canada, was signed after comprehensive talks Prime Minister Narendra Modi had with his Canadian counterpart Stephen Harper. Cameco Corporation will supply 3,000 metric tonnes of uranium over five years to India at an estimated cost of USD 254 million and the supply will start from this year, a top official said.

Canada is the third country to supply uranium to India after Russia and Kazakhstan. The supplies will be under the International Atomic Energy Agency (IAEA) safeguards. Canada banned exports of uranium and nuclear hardware to India in the 1970s after it was alleged that New Delhi used Canadian technology to develop a nuclear bomb. The two countries put this behind them with the Canada-India Nuclear Cooperation Agreement that took effect in 2013. At a joint press conference with Harper, the Prime Minister said, "The agreement on procurement of uranium from Canada for our civilian nuclear power plants launches a new era of bilateral cooperation and a new level of mutual trust and confidence."

"The supply of uranium is important as India is keen to have clean energy. The world is worried about global warming and climate change. We want to give something to humanity through clean energy. It is costly but we are doing this for humanity. For us, uranium is not just a mineral but an article of faith and an effort to save the world from climate change," he said in response to a question.

Harper said, "There have been unnecessary frosty relations for too long (between the two countries) and it is time to move ahead." Modi, the first Indian Prime Minister to visit Canada in 42 years, said, "The deal will enable India to power its growth using clean energy." Canada is the second-largest producer of uranium globally, with exports valued at over USD 1 billion per year. Modi said the resource-rich country has the potential to be a key partner in India's national development priority. "This is a growing relationship. Trade potential between our countries is enormous. Prime Minister Harper and I are committed to establish a new framework for economic partnership," the Prime Minister said, adding, "Ours is a natural partnership of shared values." "Our relationship had drifted in the past. In recent years, Prime Minister Harper's vision and leadership changed the course of our relations," Modi said.

(Source : Business Standard)



## NTPC will Become a 1,28,000-MW Corporation by 2032

It may have taken the country's largest power producer, the National Thermal Power Corporation (NTPC), nearly 30 years to reach its present capacity of 44,600 MW,



but the Maharatna company plans to triple its power generation capacity in the next 17 years. R Venkateshwaran, Regional Executive Director (South), tells Sunitha Natti how his company is going about its mission. Excerpts:

**How much capacity do you plan to add?**

We have plans to become a 1,28,000-MW company by 2032. Projects of 20,844 MW are already under construction. We are planning capacity addition of about 9,000 MW, including a 4,000-MW Pudimadaka project near Visakhapatnam, a 4,000-MW Telangana power project and a 1,000-MW solar power near Anantapur, in Andhra Pradesh.

**How much power do the plants in south India generate?**

NTPC's installed capacity across the country stands at 44,598 MW, of which the southern region has 6,485 MW (including solar). This includes the four locations of Ramagundam, Simhadri, Kayamkulam and Vallur. The Ramagundam plant has a load factor of 89.76 per cent, and the Simhadri plant operates at 89.76 per cent.

**Tell us about the upcoming plants.**

We have already initiated the tender process for the Pudimadaka plant and begun work on the 1,600-MW unit at the existing Ramagundam plant. The environment impact assessment study for the Telangana project for Phase-I (2 x 800 MW) at Ramagundam is over and the public hearing is expected in May. Tendering activities have commenced for main plant packages. Similarly, for Phase-II Telangana project (3 x 800 MW), the government of Telangana is identifying land in Nalgonda district. We will finalize tenders for upcoming projects only after receiving approval from the Environment and forests ministry.

**Who will be the beneficiaries?**

The governments of Telangana and Andhra Pradesh have asked us to allocate 85 per cent power from the two ultra mega power plants of 4,000-MW each. We have already apprised the Union Power Ministry of the states' request and are awaiting a final confirmation.

**How much solar power generation are you targeting?**

The southern region has achieved a renewable generation of 22.7587 MU. We have a 10-MW Oskar plant in Ramagundam and 5 MW in Andaman & Nicobar. We are adding a 1,000-MW solar power project near Anantapur. For the first 250-MW, tendering activities are at an advanced stage and we are in discussion with the Andhra government on power purchase agreements.

**What new initiatives have you launched recently?**

The corporation has introduced a single-window system to deal with the procurement needs of all the power plants. So far, we were following a plant-wise tender process, but the new system allows vendors to bid for orders from plants across the country. For vendors, this widens their business potential. For us, the enhanced competition will result in cost savings. Currently, NTPC procures materials and items worth Rs 2,000 crore besides awarding Rs 1,600 crore of service contracts every year.

(Source : *The New Indian Express*)

## PROGRAMME

### ANNUAL GENERAL BODY MEETING OF K S E B ENGINEERS' ASSOCIATION

**24<sup>th</sup> MAY 2015 (Sunday)**

Venue	: PLATINUM HALL, JOBY'S MALL PALAKKAD
9.00 – 10.00 am	: Attendance of Members
10.00 - 11.00 am	: Inauguration
11.00 – 1.00 pm	: Technical Session : National Seminar on "INDUSTRIAL GROWTH OF KERALA - ENERGY NEEDS & OPTIONS "
1.00 - 2.00 pm	: Lunch
2.00 - 3.00 pm	: 38 <sup>th</sup> Annual General Body Meeting of KSEB Engineers' Benevolent Fund
3.00 - 6.00 pm	: 62 <sup>nd</sup> Annual General Body Meeting of KSEB Engineers' Association
6.00 - 8.00 pm	: Dinner

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Send off given to Er.K.Vasakumari & Er.A.Rajendranthy Thiruvananthapuram unit



Director Er. K Venugopal handing over the framed receipt for Rs. 2 lacs to the daughter of Late Er Betty Trosa Jose of Thrissur unit on 28/03/2015

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