TECA – NEWS CLIPPING

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

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அனைவருக்கும் 24 மணி நேரமும் குறைந்த கட்டண மின்சாரம் கட்டண கொள்கை திருத்தத்துக்கு மத்திய மந்திரிசபை ஒப்புதல் - தினத் தந்தி: ஜனவரி 21,2016

அனைவருக்கும் 24 மணி நேரமும் குறைந்த கட்டணத்தில் மின்சார வசதி கிடைப்பதற்காக, மின்கட்டண கொள்கையில் செய்யப்பட்ட திருத்தங்களுக்கு மத்திய மந்திரிசபை ஒப்புதல் அளித்தது.

திருத்தங்கள்

பிரதமர் நரேந்திர மோடி தலைமையில் மத்திய மந்திரிசபை கூட்டம் நேற்று நடைபெற்றது. அதில் எடுக்கப்பட்ட முடிவுகள் குறித்து மத்திய மின்துறை மந்திரி பியுஷ் கோயல் நிருபர்களுக்கு பேட்டி அளித்தார். அவர் கூறியதாவது:–

முதல்முறையாக, மின்கட்டண கொள்கை–2006–ல் விரிவான திருத்தங்கள் மேற்கொள்ளப்பட்டுள்ளது. அனைவருக்கும் மின்சார வசதி, குறைந்த கட்டணத்தில் மின்சாரம் கிடைப்பதை உறுதி செய்யும் திறன், சுற்றுச்சூழல் பாதுகாப்பு, முதலீடுகளை கவருதல் ஆகிய நோக்கங்களுக்காக இந்த திருத்தங்கள் மேற்கொள்ளப்பட்டுள்ளன.

24 மணி நேர மின்சாரம்

இதன்படி, அனைத்து நுகர்வோருக்கும் 24 மணி நேரமும் மின்சாரம் கிடைப்பதை கட்டண கொள்கை திருத்தங்கள் உறுதி செய்யும். இதை எட்டுவதற்காக, மாநில அரசுகளும், மின்சார ஒழுங்குமுறை நிறுவனங்களும் மின் வினியோக பாதையை வகுப்பார்கள்.

மிகவும் உட்புறங்களில் உள்ள கிராமங்களுக்கும் மின்சாரம் வழங்கப்படும். நிலக்கரி சுரங்கங்களுக்கு அருகில் வசிக்கும் மக்களுக்கு குறைந்த கட்டணத்தில் மின்சாரம் கிடைப்பது உறுதி செய்யப்படும்.

தற்போதைய மின் உற்பத்தி நிலையங்களை விரிவுபடுத்தி, நுகர்வோருக்கு மின் கட்டணத்தை குறைப்பதன் மூலம் மலிவு விலையில் மின்சாரம் கிடைப்பதை இந்த திருத்தங்கள் உறுதி செய்யும். தேவைக்கு அதிகமான மின்சாரத்தை விற்பனை செய்ய இந்த திருத்தங்கள் வழிவகுக்கின்றன. இதனால், ஒட்டுமொத்த மின்சார செலவும் குறையும்.

மின் வினியோக திட்டங்கள், போட்டி ஏல முறை மூலம், குறைந்த செலவில் வேகமாக நிறைவேற்றப்படும்.

ஸ்மார்ட் மீட்டர்

வீடுகளில் ஸ்மார்ட் மீட்டர்கள் அதிவேகத்தில் பொருத்தப்படும். இதனால், மின் திருட்டு தடுக்கப்படும்.

புதுப்பிக்கத்தக்க எரிசக்தியை ஊக்குவிக்கும் விதமாக, ஒட்டுமொத்த மின்சார பயன்பாட்டில் 8 சதவீத மின்சாரம், சூரிய மின்சாரமாக இருக்கும். இந்த இலக்கு, 2022–ம் ஆண்டு மார்ச் மாதத்துக்குள் எட்டப்படும்.

மாநிலங்களுக்கிடையே சூரிய மின்சாரத்தையும், காற்றாலை மின்சாரத்தையும் கொண்டு செல்வதற்கு கட்டணம் வசூலிக்கப்பட மாட்டாது. கழிவுகளில் இருந்து மின்சாரம் தயாரிக்கும் தொழிற்சாலைகளில் இருந்து 100 சதவீத மின்சாரம் கொள்முதல் செய்யப்படும். இதனால், 'தூய்மை பாரதம்' திட்டம் புதுப்பொலிவு பெறும்.

இந்த திருத்தங்கள் மூலம் முதலீடுகள் ஊக்குவிக்கப்படுவதால், நிலக்கரி வளம் மிகுந்த மாநிலங்களில் வேலைவாய்ப்பு பெருகும்.

Centralised power monitoring system to be operational soon

The Hindu: January 19, 2016

It will enable Tangedco to increase efficiency of power supply and reduce the time taken to attend to faults

The Supervisory Control and Data Acquisition (SCADA), an automated centralised power distribution, control and monitoring system, will become operational before January 30, according to P. Sivasamy, Chief Engineer, Distribution, Tamil Nadu Generation and Distribution Corporation (Tangedco).

The automation system is being established at a cost of Rs. 23.63 crore as part of the Restructured Accelerated Power Development and Reforms Programme (R-APDRP) aimed at increasing the efficiency of power supply to consumers by reducing reaction time on attending the faults.

Speaking to *The Hindu* on Monday, he said that the system had been controlling part of operations in Tiruchi city. Out of 15 sub-stations, 11 had been brought under the SCADA system in the first phase. The work on setting up of 11 Remote Terminal Units (RTU) had been completed. They were all tested successfully.

As per the plan, the SCADA would have 382 Feeder Remote Terminal Units (FRTU). Of them, 202 had been installed and tested successfully. Remaining 180 FRTUs were being installed.

Mr. Sivasamy further said that installing sectionalizer was among the important component of SCADA system. It was a current monitoring device to isolate faulty sections of electrical systems. It would trip by sensing the current and the absence of voltage when the upstream breaker had tripped.

Sectionalizer could isolate the de-energised circuit. It had been planned to install 241 sectionalizers in different parts of the city. The work had almost been completed.

In the existing system, power supply had to be disconnected for a long stretch if a fault was noticed at a spot. It would affect a large number of consumers.

Once the sectionalizers became functional, power supply could be cut only at the faulty line. It would avoid unnecessary power disturbance to the consumers.

Mr. Sivasamy said it was expected that all works related to SCADA would be completed by January 30.

Four special teams were formed to expedite the works.

Once the entire system became functional, most of the operations of 11 sub stations, high tension feeders and all electrical equipment could be remote controlled.

If power supply was disrupted, control room would pick up signals automatically so as to take remedial measures. There would be no need for wiremen to visit the areas to locate the fault.

It would enable Tangedco to increase the efficiency of power supply and reduce reaction time on attending faults.

Cabinet approves setting up of over 5,000 MW of Grid-connected Solar PV Power Projects

Press Information Bureau: January 20, 2016

The Cabinet Committee on Economic Affairs, chaired by the Prime Minister Shri Narendra Modi, has given its approval for setting up over 5,000 MW of Grid-Connected Solar PV Power Projects on build, own and operate basis. The work will be implemented by Solar Power Developers (SPDs) with Viability Gap

Funding (VGF) under Batch-IV of Phase-II of the Jawaharlal Nehru National Solar Mission (JNNSM).The total investments expected under this scheme is about Rs 30,000 crore.

This would help in creating additional 5000 MW capacity of Grid-connected solar PV power generation projects in four trenches of each 1,250 MW capacity during four financial years viz. 2015-16, 2016-17, 2017-18 and 2018-19. This would also help in employment generation of about 30,000 people in rural and urban areas with reduction of about 8.525 Million T of CO_2emissions into environment every year.

The tenders will be State-specific based on the demand from particular State. States/Union Territories/Discoms/State Utilities are the beneficiaries. This will also facilitate to create employment and infrastructure in the States. Installation of 5000 MW Solar PV plants will generate about 8,300 Million units per year, which caters power to almost 2.5 Million households.

The estimated requirement of funds to provide VGF for 5,000 MW capacity solar projects is estimated to be Rs. 5,050 Crore (Rs 1.00 Cr / MW). This includes handling charges to Solar Energy Corporation of India (SECI) @ 1% of the total grant disposed and Rs. 500 crore for payment security mechanism for all three VGF schemes of 750 MW, 2000 MW and 5000 MW.

The phasing of investment is estimated as under:

Year	**Total (Rs crore)**	**Handling & Monitoring charges for SECI @ 1% (Rs crore)**	**Total fund requirement (Rs crore)**
2015-16	500.00	5.00	505.00
2016-17	1125.00	11.25	1136.25
2017-18	1125.00	11.25	1136.25
2018-19	1125.00	11.25	1136.25
2019-20	1125.00	11.25	1136.25
Total	**5000**	**50.00**	**5050.00**

The upper limit for VGF will be Rs. One Crore per MW. In case there is savings in the total VGF requirement, quantum of capacity of 5000 MW can be enhanced.

The Viability Gap Funding (VGF) scheme will be implemented for setting up over 5000 MW capacity of grid connected solar power projects by solar power developers on build, own and operate basis through open and transparent competitive bidding to provide solar power at a pre-defined tariff of Rs. 4.93 per kWh for the first year. The overall effort is to continuously reduce Government financial support for grid connected solar power as the prices of solar power comes down.

The Scheme will be implemented by SECI as per MNRE Guidelines. SECI shall prepare necessary bidding documents for inviting the proposals for setting up of projects on a competitive bidding through e-bidding. SECI will enter into Power Purchase Agreement (PPA) with the selected developers and the Power Sale Agreement (PSA) with the buying entities.

Requisite funds for provision of the VGF support will be made available to MNRE from the National Clean Energy Fund (NCEF), operated by Ministry of Finance.

Out of 5,000 MW, some capacity in each tranche, will be developed with mandatory condition of solar PV cells and Modules made in India. This will be called the Domestic Content Requirement (DCR) category and remaining will be in open category.

Some other important features are as follows:

a) Project Locations: Projects could be set up in the Solar Parks being developed under a separate MNRE Scheme and also at other locations, which could be selected by the bidders on their own.

b) Commissioning period would be 13 months from the date of signing of PPAs.

c) MNRE will provide 100% VGF to SECI to disburse to Solar PowerDevelopers (SPDs) immediately after commissioning, subject to availability of funds.

d) Due to competitive bidding, there may be savings in the VGF amount of Rs.5,050 crore. In that case, the total capacity will be increased from 5,000 MW, so that, maximum capacity can be set up in the VGF of Rs.5,050 crore after accounting for grant of Rs. 500 crore to be given for payment security mechanism for all three VGF schemes of 750 MW, 2000 MW and 5000 MW.

e) The bidders will be free to avail fiscal incentives like Accelerated Depreciation (AD), concessional customs and excise duties, tax holidays, etc. available for such projects. However, no bidders will be allowed to claim both AD and VGF.

The selection of 5,000 MW Solar PV Projects will be under State Specific VGF Scheme and projects will be set up in the Solar Parks of various states,developed through coordinated efforts of Central and State Agencies. SECI will purchase the power from the selected Solar PV plants at the pre-determined tariff and sell the power to willing State Utilities/ Discoms under 25 years Power Sale Agreements (PSAs), at the applicable tariff.

The State Governments shall appoint a State Level Agencyfor providing necessary support to facilitate the required approvals and sanctions in a time bound manner to achieve commissioning of the projects within thescheduled timeline.

Background:

The Jawaharlal Nehru National Solar Mission (JNNSM) was launched in January 2010 by the Government of India with a target to setup 20,000 MW of grid connected solar power by 2022 which is now enhanced upto 1,00,000 MW.

In addition to Government of India, several States have taken initiatives and come out with solar policies to support for setting up solar power projects. Many states have come out with tenders for procurement of solar power recently.

Cabinet approves amendments in Power Tariff Policy to ensure 24X7 affordable Power for all
Press Information Bureau: January 21, 2016

The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi has approved the proposal of the Ministry of Power for amendments in the Tariff Policy. For the first time a holistic view of the power sector has been taken and comprehensive amendments have been made in the Tariff policy 2006. The amendments are also aimed at achieving the objectives of Ujwal DISCOM Assurance Yojana (UDAY) with the focus on 4 Es: Electricity for all, Efficiency to ensure affordable tariffs, Environment for a sustainable future, Ease of doing business to attract investments and ensure financial viability.

Highlights of Amendments are:

Electricity:

• 24X7 supply will be ensured to all consumers and State Governments and regulators will devise a power supply trajectory to achieve this.

• Power to be provided to remote unconnected villages through micro grids with provision for purchase of power into the grid as and when the grid reaches there.

• Affordable power for people near coal mines by enabling procurement of power from coal washery reject based plants.

Efficiency:

• Reduce power cost to consumers through expansion of existing power plants.

• Benefit from sale of un-requisitioned power to be shared allowing for reduction in overall power cost.

• Transmission projects to be developed through competitive bidding process to ensure faster completion at lower cost.

• Faster installation of Smart meters to enable "Time of Day" metering, reduce theft and allow net-metering.

• Lower power cost by creating transmission capacity for accessing power from across India.

Environment:

• Renewable Power Obligation (RPO): In order to promote renewable energy and energy security, 8% of electricity consumption excluding hydro power, shall be from solar energy by March 2022.

• Renewable Generation Obligation (RGO): New coal/lignite based thermal plants after specified date to also establish/procure/purchase renewable capacity

• Affordable renewable power through bundling of renewable power with power from plants whose PPAs have expired or completed their useful life.

• No inter-State transmission charges and losses to be levied for solar and wind power.

• Swachh Bharat Mission to get a big boost with procurement of 100% power produced from Waste-to-Energy plants.

• To release clean drinking water for cities and reduce pollution of rivers like Ganga, thermal plants within 50 km of sewage treatment facilities to use treated sewage water.

• Promotion of Hydro projects through long term PPAs and exemption from competitive bidding till August 2022.

• Ancillary services to support grid operation for expansion of renewable energy.

Ease of Doing Business:

• Generate employment in coal rich Eastern states like Odisha, West Bengal, Jharkhand, Chhattisgarh etc. by encouraging investments. States allowed to setup plants, with up to 35% of power procured by DSICOMs on regulated tariff.

• Remove market uncertainty by allowing pass through for impact of any change in domestic duties, levies, cess and taxes in competitive bid projects.

• Clarity on tariff setting authority for multi-State sales. Central Regulator to determine tariff for composite schemes where more than 10% power sold outside State.

These amendments will benefit power consumers in multiple ways. While reducing the cost of power through efficiency, they will spur renewable power for a cleaner environment and protect India's energy security. They would also aid the objectives of Swachh Bharat Mission as well as Namami Gange Mission

through conversion of waste to energy, usage of sewage water for generation and in turn ensure that clean water is available for drinking and irrigation.

These amendments will ensure availability of electricity to consumers at reasonable and competitive rates, improve ease of doing business to ensure financial viability of the sector and attract investments, promote transparency, consistency and predictability in regulatory approaches across jurisdictions. It will further facilitate competition, efficiency in operations and improvement in quality of supply of electricity. These holistic amendments to Power Tariff Policy which complement schemes like UDAY will ensure the realization of Hon'ble Prime Minister Shri Narendra Modi's vision of 24X7 affordable power for all.

New power tariff policy tightens regulator's role

The New Indian Express : January21, 2016

The tariff policy has more than 30 amendments in the existing tariff policy — the National Electricity Policy, 2005.

The Government on Wednesday cleared amendments to the National Tariff Policy for Electricity, which tightens the discretion currently allowed to regulators while setting power tariffs and makes a strong pitch for the promotion of clean energy.

The tariff policy has more than 30 amendments in the existing tariff policy — the National Electricity Policy, 2005.

The regulations tighten the norms followed by electricity regulators for setting power tariffs by requiring them to "necessarily" be guided by the new policy while framing regulations under section 61 of the Electricity Act 2003.

After the amendments, it would be binding on the regulators to take decisions as per the changed policy.

A significant addition to the objective of the policy are the promotion of renewable generation sources and aim to create more competition, efficiency in operations and improvement in quality of power supply. One of the recommendations in the policy to incentivise the distribution companies to procure power from renewable sources of energy, for which the central government could notify an appropriate bid-based tariff framework for renewable energy.

On the regulatory side, the tariff policy has incorporated the word 'necessarily' in Section 61 of the Electricity Act 2003, which empowers regulators to set terms and conditions for the determination of tariffs at a utility level.

"The Act also requires the Central Electricity Regulatory Commission and State Electricity Regulatory Commissions (SERCs) shall necessarily be guided by the tariff policy in discharging their functions including framing the regulations under section 61 of the Act."

The policy has also allows increase in fuel cost on account of import to be included in the tariff 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 or market based e-auction coal for making up the shortfall, shall be considered for being made a pass through by CERC or SERCs, on a case-to case basis, to the extent of shortfall," according to an amendment to the policy. Generators, however, have been given the freedom to sell surplus power in spot market if the beneficiary does not give prior notice two days ahead. It was earlier 10 hours.

In a first, the policy also specifies norms for ancillary services. The central commission has been given the right to introduce the norms and framework for ancillary service 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

Indian power sector at turning point: World Economic Forum

The Economic Times: January 20, 2016

India's power sector is at an "inflection", or turning, point, while most of its electricity consumed in the next two decades will come from burning fossil fuels, the World Economic Forum (WEF) said on Tuesday.

"India's power sector is at an inflection point, given the government's conviction that electricity is a critical enabler for economic growth," the WEF said in a report, titled "The Future of Electricity in Fast-Growing Economies Attracting Investment to Provide Affordable, Accessible and Sustainable Power", co-authored with Bain & Company and released here.

"Even with the huge investments in renewables, most of the electricity consumed in India over the next two decades will be generated by burning fossil fuel, and India can do much to improve the efficiency of the existing power infrastructure," it said.

Calling for India to fix the viability of its distribution system and address fuel supply challenges, the report said tariffs and rates for fuel pricing, costs that are passed through to customers, and peak power policies and pricing should all be transparent and consistent across states.

Alignment between federal and state government objectives is critical, as India devolves significant power to the states, it added.

Noting that India's plan to add 175 GW of capacity from renewables by 2022 can succeed only if the relevant stakeholders act in ways that encourage investment in the segment, the WEF report said: "Regulators can enforce the mechanisms underlying renewable purchase obligations (RPOs) and renewable generation obligations (RGOs), while also promoting open access for wind power.

"Critically, they should ensure long-term tariff consistency with no retroactive changes or flip-flops."

The report also said non-Organisation of Economic Cooperation and Development (OECD) countries would have to double their annual investments in electricity from about $240 billion to $495 billion between 2015 and 2040, which would amount to a requirement of $13 trillion to meet energy policy objectives.

In this connection, Hindustan Power projects chairman Ratul Puri said India will take the centre stage at the World Economic Forum that is slated to start here on Wednesday.

"I am very certain that India is set to take the centre stage at World Economic Forum, Davos," Puri said in a statement.

"If you look at the Indian infrastructure sector, it alone is ready to attract investments to the tune of $1.7 trillion in a scenario where globally there is dearth of good projects, according to a World Bank report," he added

Maharashtra to offer power sops to arrest exodus of industries

Business Standard: January 21, 2016

Some relief in electricity rates to industrial units in Maharashtra is likely in the near future.

Fearing exodus of units to neighbouring states due to high rates, the industries department has pleaded their case with its energy counterpart. It has said lack of quality and affordable power is proving difficult for the bulk of units and that the rate of Rs 8.23 a unit for extra the high voltage (high tension) category was the highest in the country.

The comparative rates are Rs 6.8 in Karnataka, Rs 6.35 in Gujarat, Rs 6.6 in Andhra Pradesh, Rs 6.9 in Madhya Pradesh, Rs 5.75 in Chhattisgarh and Rs 5.10 in Goa.

SOME RELIEF

- Effective rate in Maharashtra for high-tensionindustry consumers is 16-38%
- Rate further increased as they have to pay 95 paise as fuel adjustment surcharge

- Industries department pleads for allowing industrial units to purchase electricity from power exchanges

- State energy department assures to bring down rate by moving to the power regulator

In sum, it says, the effective rates in Maharashtra are 16-38 per cent higher than in other states. The rise has been 20 per cent between June and December 2015.

Industries minister Subhash Desai, at an interaction with representatives of industrial units on Tuesday evening in the present of energy minister Chandrashekhar Bawankule, also asked that they be allowed to directly buy from power exchanges, on the lines of what is allowed in Gujarat, Andhra and Tamil Nadu.

He told this newspaper Bawankule had assured relief of Rs 1,750 crore would be given in rates for units in backward and remote areas and in the Vidarbha and Marathwada regions. Also, average rates would be reduced by 60p a unit from April, after the state power distribution company, MahaVitaran, stops recovering a fuel adjustment surcharge of 95p a unit.

Bawankule also said industrial units could avail up to a 26 per cent rebate if they functioned between 6 pm and 6 am. MahaVitaran will file a petition in this regard next month at the state electricity regulatory commission.

Earlier, the Indian Merchants Chamber asked the ministers for plugging of leaks in power distribution. The association of captive power producers pleaded for lower electricity duty.

Energy Minister to Redress Consumer Grievances

Indian Express: January 21, 2016

Karnataka energy minister D K Shivakumar is set to give a personal touch to redressal of grievances of power consumers, starting with Bengaluru Electricity Supply Company(BESCOM) limits.

Shivakumar has planned to visit every sub-divisional office in BESCOM limits and personally interact with the consumers to understand their grievances and to redress them on the spot.

A detailed schedule of the dates of the visit for each sub-division office would be announced in advance to enable greater participation of the consumers. He has also made it mandatoryfor the officials to hold frequent consultation meetings with consumers.

The department has decided to take up energy conservation measures more seriously. All the ESCOMS has been directed to provide new connection for irrigation and drinking water pumpsets only if they conform to latest energy efficiency standards, Shivakumar said, speaking to reporters here on Wednesday.

The minister has also directed the officials to take up awareness campaigns to convince the consumers to use LED lamps in their homes and offices.

Shivakumar also claimed that there was no load shedding in state. The peak hour demand is around 8,800 MW per day and the grid is facing a gap of about 20 to 300 MW.

“But we are managing it without resorting to load shedding,”he claimed.

He refused to comment on the ESCOMS approaching KERC seeking a hike in power tariff.

Cutting power subsidies – by giving new pumps free!

The Indian Express: January 21, 2016

Simply put, what is a 5-HP pump, on paper, actually draws electricity that a 6.7-HP motor would, consuming 5 units rather than 3.73 units per hour.

State governments and power distribution companies (Discoms) can save huge sums on electricity subsidies to farmers by simply replacing old inefficient pump-sets with new ones that consume less energy for watering fields.

A standard 5-horsepower (HP) electric motor pump-set shouldn't — under ideal field conditions of three-phase supply at consistent 440V voltage — consume more than 3.73 kilowatt-hours of energy (one HP equals 0.746 kilowatts).

But most 5-HP pumps that farmers use today consume at least 5 units (kilowatt-hours) of electricity, going up to even 7-7.5 units. "The bulk of the 2.1-2.2 crore electric pump-sets presently energised in India are 10-years-old or more. Farmers rarely replace their pumps even after repeated motor burnouts. They, instead, choose to rewind these locally, often using poor-quality copper wires that lead to lower motor efficiency and increased energy consumption," says Shashi Kant, senior manager (Technical) at Energy Efficiency Services Ltd (EESL), a joint venture of public sector undertakings under the Ministry of Power.

Simply put, what is a 5-HP pump, on paper, actually draws electricity that a 6.7-HP motor would, consuming 5 units rather than 3.73 units per hour.

The implications of this aren't small for Discoms that, according to Power Finance Corporation data, sold 150.98 billion units to the farm sector in 2013-14. While agriculture accounted for 21.69 per cent of total electricity consumption, it generated just 8.03 per cent of the revenues of Discoms. The average revenue per unit of electricity from sale to agricultural consumers was only Rs 1.75, as against Rs 6.66 to industry.

Farmers in many states are now charged on a fixed per-HP per month basis. At an average rate of Rs 300 per HP, the monthly electricity bill for a farmer with a 5-HP pump connection works out to a flat Rs 1,500, irrespective of how many units he actually consumes. But that also makes him less inclined to invest in an energy-efficient pump, while encouraging overdrawing of groundwater. An old 5-HP pump that guzzles 5 units per hour and runs six hours daily for 300 days of the year will consume 9,000 units. If, however, replaced by a new star-rated pump of similar horsepower requiring only 3.73 units an hour, the annual consumption will drop by over 25 per cent to around 6,715 units. The annual savings from it, taking an average cost of supply of Rs 5/unit, comes to Rs 11,430. That is significant, when seen against the roughly Rs 35,000 cost for a new energy-efficient 5-HP pump-set. "We have replaced nearly 2,000 pump-sets of farmers in Hubli and Mandya districts of Karnataka with new BEE (Bureau of Energy Efficiency) star-rated pumps.

Our findings show the resultant energy savings to be anywhere from 25 to 35 per cent," claims Shashi Kant. EESL is also implementing a similar project of replacing 2,500 pump-sets in Rajanagaram mandal of Andhra Pradesh's East Godavari district. The immediate beneficiary of replacing old energy-guzzling pumps would be the Discoms, to the extent their sale of power at below cost to farmers comes down by 25 per cent. The Discoms are, in fact, funding the replacement of pump-sets under EESL's pilot scheme, as the payback on an investment of Rs 35,000 is not even 3.5 years.

But how does the farmer gain by replacing inefficient pump-sets, especially in a regime of flat-rate pricing for agricultural power that reduces the marginal cost of pumping water to near-zero?

"The farmer spends around Rs 3,000 every time his old overheated submersible pump is taken out from 100 feet below and put back after its burnt-out motor has been rewound. Here, not only are we giving the new pump free (since it is funded by the Discoms), but also not charging him for any repair and maintenance for five years," explains Shashi Kant. Saurabh Kumar, managing director of EESL, believes that state governments/Discoms should even consider supplying solar pumps against new connections free of cost. A 5-HP solar pump currently costs about Rs 4.5 lakh.

The savings from this, and also not having to incur losses on future power sales, can pay for giving free solar pumps in over 6-7 years time

What may happen if India's energy demand were met by an almost complete shift to solar, wind and other renewable - Devangshu Datta

Business Standard: January 20, 2016

By 2022, India aims to have an installed solar energycapacity of 100 gigawatts (Gw) and wind turbine capacity amounting to another 60 Gw. In total, it hopes to have 175 Gw worth of renewable energy (RE) capacity by 2022. The next target is to double this, to 350 Gw of RE by 2030.

Assuming all targets are met, about 40 per cent of total power capacity will be RE by 2030, with solar and wind forming the backbone. (Much less than 40 per cent of actual power generation would be from renewables because RE load factors are low.)

RE has been enthusiastically supported across the political spectrum. Prime Minister Narendra Modi was an early advocate of solar energy during his days as chief minister of Gujarat. The Bharatiya Janata Party has ramped up the targets set during the United Progressive Alliance era. Solar and wind costs have dropped to competitive levels, compared to thermal.

There are many positive public associations with renewables. It is assumed that the environmental footprint is small. In tree-hugger circles, it is believed that woes like anthropogenic global warming, conflicts in petroleum-rich regions, atmospheric pollution, environmental damage and conflicts caused by coal mining etc, will ease off as RE becomes a larger part of the energy mix.

The reality does not bear such a close resemblance to Disneyland. Solar, wind et al, will mitigate some problems. But renewable technologies have significant downsides. Solar and wind will also cause major and messy shifts in employment patterns.

Huge sums are required. Solar alone needs $95-100 billion equivalent of investments (at Rs 65/USD) to meet the 100 Gw target of 2022. To put that in perspective, the current outstanding bank credit to the entire Indian power sector (conventional and RE) is $85 billion equivalent.

There are also enormous technical challenges in integrating intermittent power generation via solar and wind, with conventional grids. Grid-balancing becomes tricky - they must get much smarter, which is of course, a good thing. Smart solutions for net metering - adjusting power bills to reflect RE generated and put on the grid by the consumer - will also be required.

Solar and wind need specific natural conditions (sunshine, wind consistency). Both place pressure on land and other resources. Instead of being dependent only on imports of crude, gas and coal, India could end up dependent on rare earth imports as well as crude and gas. The only big exporter of rare earth metals is China and it has put the squeeze on that market many times.

In environmental terms, everybody focuses on the bright side of RE. So, let's look at the dark side.

First, wind. Wind kills birds. it is estimated that literally millions (by some estimates more than 10 million) of birds are killed all over the world every year by wind turbines. Plus, each turbine installation consumes large amounts of concrete and steel, PVC and fibre-reinforced plastics. These are all materials with nasty footprints. Wind can coexist with crops. But it needs a lot of land with consistent wind speeds.

Ideally, wind turbines can be located offshore where noise doesn't matter, and there are fewer birds to kill. But then there are problems connecting to the grid, due to the necessity of laying undersea cables. Offshore facilities also incur much higher maintenance costs due to the corrosive effects of sea water.

Now, solar. India is well-suited to solar because it averages nearly 300 days of sunshine across a very large tropical region ("high solar irradiation" in the jargon). Still, enormous amounts of land is required.

Setting up a capacity of 50 Mw in India needs about one square km of land. A Gw (1 Gw=1,000 Mw) therefore, needs about 20 square km and 100 Gw will require upwards of 2,000 square km. Delhi city (area 1,485 square km) currently consumes over 6 Gw. In fact, 40 Gw of that by 2022 is to be built on roofs. Gujarat has built arrays on top of canals.

That brings us to another requirement. Solar needs water (or lots of manual labour) to keep panels clean. Installations in deserts must solve that problem. And yes, some solar energy concentration technologies also kill birds by flash frying them in large numbers.

Labour is another interesting factor. Solar and wind are more labour-intensive than conventional power. Manual supervision is required to install, maintain and repair installations, quite apart from the labour requirements of factories manufacturing RE equipment.

The high labour intensity is welcome in India. But there could be loss of employment and loss of revenues in two major employment-generating industries as RE takes hold. RE requires far less construction activity compared to conventional power (or hydro, or nuclear). Construction employs over 40 million people at present. Second, there would be an impact on coal mining and the associated value chain. The transition phase where coal miners and construction workers are laid off would have to be managed well.

As with all new technologies, RE will bring some new problems in its wake. Of course, the net effects of diversifying the energy mix and reducing the environmental footprint should be positive. But there will be downsides and some of those could be destabilising. We should be prepared for that.

Discoms petition CERC over expensive power

Times of India: January 12, 2016

The three discoms - BSES Rajdhani, Yamuna and Tata Power Delhi - have taken their plea over surrendering of "costly" power to the Central Electricity Regulatory Commission (CERC). They have filed separate petitions saying they had more than sufficient electricity to serve Delhi consumers till financial year 2019-20.

The discoms also said that scheduling power from these plants was taking a toll on their financial health. This is detrimental at a time when the state regulator, Delhi Electricity Regulatory Commission (DERC), was pushing them to bring down costs. The next hearing on the issue is scheduled to be held on January 15, sources said.

The petition by Tata Power Delhi has made a case to surrender all power from NTPC, NHPC and Delhi government plants. The discom said several attempts were made with the Union ministry of power to surrender this electricity, but it did not yield any results.

"Tata Power Delhi has significant surplus power due to availability from various sources. As a result, we have to pay the entire fixed cost of the generating station without being able to utilise the entire quantum. The reallocation of power from these plants to needy states would help in optimum utilisation," says the petition.

In 2015, Delhi government had supported the demand of discoms with power minister Satyendar Jain writing to Union power minister Piyush Goel. The Centre is yet to respond, said sources.

Plants from which the discoms propose to surrender power include Dadri, Badarpur, Auraiya, Anta, Aravalli, Koldam, Dulhasti, Chamera, Parwati and Tehri. The companies claimed that their scheduling from these plants were very low and many of them were aged over 25 years, thus old and inefficient.

If CERC rules in favour of the power companies, then all PPAs would be declared null and void. Sources, however, report that a ruling would take time. Three hearings have already been held since the petitions were filed last month.

Sources in the Union ministry, however, hinted that surrender would be accepted only if alternate buyers are found. "The PPAs were made for 20-25 years. Fixed costs aside, the power has to be reallocated elsewhere and for that another state has to agree to buy it," said a source.

Save Energy. Save Money. Save the Planet