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Current News
மின் செய்திகள்

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Consumer guide to grid-connected rooftop solar - Part 5

The previous issue explained about mounting structures, cables and online monitoring parameters in the quotation. This part will explain the cost mentioned in the quotation for the installation and maintenance of rooftop solar.

Maintenance

- Maintenance includes three major items i.e. servicing of inverters, electrical wiring, and solar panel efficiency for output.
- A consumer has to ensure that annual maintenance is included in the base price. The consumer should also keep a check on what services are covered under or excluded from the Annual Maintenance Contract (AMC).

[Note: For all rooftop solar for which subsidy is availed, annual maintenance for 5 years is already included from the date of installation – consumers should confirm the same. However, for non-subsidised rooftop solar, maintenance is usually covered for the first year, free of cost. Subsequently, a consumer may enter into an AMC with the service provider.]

- Be sure to check the processes for identifying performance issues, point of contact, and estimated time to inspect and resolve the issue; check whether there will be additional charges.

Subsidies (if any):

- Subsidies are given by MNRE and state renewable energy departments in order to encourage consumers to install rooftop solar. Earlier 30% of the benchmark cost or 30% of the actual cost of the project, whichever is less was provided as subsidy by MNRE. In addition to this, in Tamil Nadu, under incentive for domestic solar rooftops - Individual, a subsidy amount of Rs 20,000 was provided by TEDA (state renewable energy department of Tamil Nadu) for residential consumers who installed 1kWp grid connected rooftop panel.
- Presently, under Phase II of the Grid-connected Rooftop Solar Programme for achieving 40 GW capacity from Rooftop Solar by the year 2022, MNRE is providing a subsidy to consumers for installation of the grid-connected rooftop solar system. The details are given below.

S. No.	Total capacity of rooftop solar installations	Applicable subsidy in terms of benchmark cost or costs arrived at through tender, whichever is lesser
1	Up to 3 kW	40%
2	Above 3 kW and up to 10 kW	40% for first 3 kW and 20% for balance capacity
3	Above 10 kW	40% for first 3 kW and 20% for the next 7 kW. No subsidy beyond 10 kW capacity

- As per guidelines, only MNRE and/or TEDA approved developers should give quotation after deduction of subsidies while other developers will only provide guidance on how to get subsidies from the government. ***(to be continued...)***

INSIDE THIS ISSUE:

Please send your feedback to ecc@cag.org.in

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Electric Vehicles (Part - 3)

The previous issue explained about battery parameters: 1) Battery capacity and voltage 2) Cost 3) Lifespan 4) Performance. Part 3 will explain the battery parameters: Charging time and Safety. This is followed by most common battery technologies used in electric vehicles.

5) Charging time

The charging time is nothing but the time taken to fully charge the battery. The charging time for different batteries ranges from 20 minutes to 20 hours. The factors determining charging time are: a) type of battery; b) battery capacity; and c) type of electric vehicle supply equipment (EVSE), commonly known as EV chargers.

6) Safety

Safety is a major concern while choosing batteries for EVs. There are chances of fire outbreaks due to heat emission, overcharged batteries or short circuits in batteries. Some batteries may also emit harmful gases. Hence, a consumer should ensure that the electric vehicle has a robust battery management system (BMS) which monitors and controls factors such as operating temperature, input/output voltage, heat emission, charge and discharge, etc.

Battery technologies

Following are the most common technologies of batteries in EVs.

1) Lithium-ion (Li-ion) batteries 2)Lead-acid batteries and 3)Nickel-metal hydride (Ni-MH) batteries

1) Lithium-ion batteries

Lithium-ion battery is a rechargeable battery in which lithium-ions move from the positive electrode to the negative electrode during charging and vice-versa when discharging. Lithium-ion batteries are the common battery technology used in consumer electronics like laptops, cell phones, etc. They are a popular choice for EVs as well. But the chemistry of the lithium-ion batteries used in EVs varies from those used in other electronics.

The major features of lithium-ion batteries used in EVs are high energy efficiency, less self-discharge, safety, and good performance at high temperature. It is expensive in comparison to other battery technologies. Due to the increasing demand and economies of scale in the manufacturing process, the cost of lithium-ion batteries is showing a declining trend in recent years and it is projected to decline further in future.

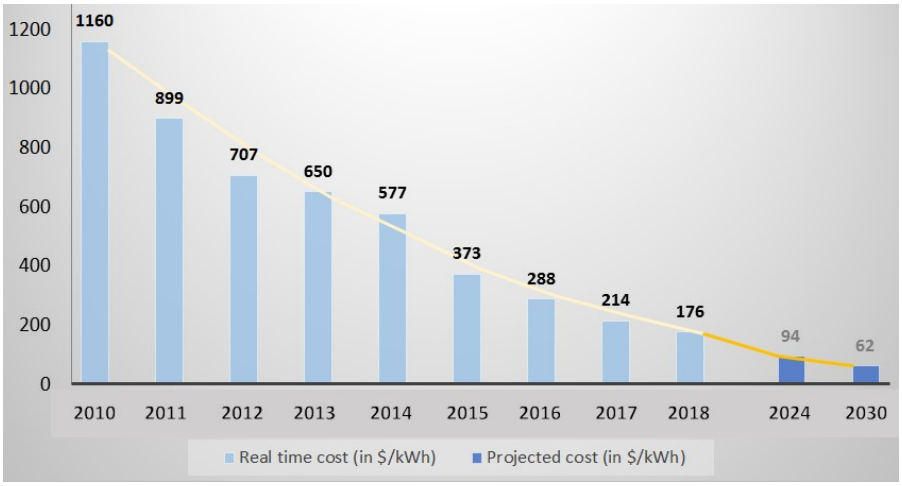

Figure: Cost of Li-ion batteries from 2010 to 2018 and future projection

Source: Bloomberg New Energy Finance (BNEF) (as of December, 2018)

According to recent research work, the lithium-ion battery market in India, which was 2.9 GWh in 2018, is expected to reach about 130 GWh by 2030. Many components of the lithium-ion batteries can be recycled, but the material recovery is expensive. It is also estimated that the recycling market will touch 22-23 GWh by 2030. However, this will require a well defined regulatory and policy framework. As of now there are no guidelines for lithium-ion battery disposal and recycling in India.

(to be continued...)

Tamil Nadu News

Tenders floated for first phase of smart meter project in Chennai

Tamil Nadu Generation and Distribution Corporation (TANGEDCO) has floated tenders for smart meters in Chennai's Thyagaraya Nagar (T.Nagar) at a cost of Rs 120 crores, sources told to media. "Consumers can choose between prepaid and postpaid connections just like mobile connections. Once the balance gets over, power will be disconnected after a warning message," the TANGEDCO official said.

It can be recalled that the Union Minister of State (Independent charge) Raj Kumar Singh had said all meters in the country would be smart meters in a span of three years and instructed Distribution companies (DISCOMs) in the state accordingly, however, according to sources Tamil Nadu is yet to initiate the system. According to observers, even in the first phase not a single meter has been installed.

The smart meter system reduces errors in reading, data entry errors by removing need for manual reading. It can reduce transmission and commercial loses and address billing inefficiencies. These meters, connected through a web-based monitoring system, would enhance revenue and serve as a crucial tool in power sector reforms. Owing to fund crunch, TANGEDCO was so far unable to select bidders as the company had to shell out more than Rs 3,000 on every instrument to provide meters for free.

Source: The New Indian Express, October 09, 2019

India News

Solar, wind farms soon along India-Pak border

To address the issue of land availability for clean energy projects, India will set up solar and wind projects on fallow land along its international border with Pakistan, according to a top government official.

The idea was first mooted by Prime Minister of India and will help tackle the problem of agricultural land being diverted for such projects. Accordingly, a 30km long and 20km wide parcel of land has been identified along the border in Kutch district of Gujarat and stretches along the border in Bikaner, Barmer and Jaisalmer districts of Rajasthan.

"We are looking at border areas as they offer wasteland, where such projects can be set up," new and renewable energy secretary Anand Kumar said in an interview over the phone. India is running the world's most ambitious renewable energy programme, with a target of achieving 175 gigawatt (GW) of renewable energy capacity by 2022 as part of its climate commitments. Currently, India generates 82,580 megawatt (MW) of clean energy, or 23% of its total power production.

"Hon'ble Prime Minister has desired that renewable projects be installed along 20km of international border. He also desired that renewable energy be used to generate drinking water in desert areas close to the border. Accordingly, the Ministry has requested both Rajasthan and Gujarat to identify suitable land near international border (20-25km strip) where solar and wind projects can be installed," according to a government document.

As part of its commitments to combat climate change, the government has proposed that state-run companies build massive clean energy parks at a cost of around $2 billion each, with built-in incentives to ensure states and operators are invested in the success of the parks. The proposed renewable energy power parks of 2,000MW each will help developers achieve economies of scale and further bring down solar and wind power tariffs. "We should consciously utilize wastelands. Why should good agricultural land be used for setting up such projects?" said another government official, who did not want to be named. "These are desert areas with no habitats. These are large stretches that can be utilized post defence clearances because security is paramount," said the second government official cited earlier.

Source: Livemint, October 10, 2019

Consumer Focus

The appellant, residing in an independent house, having ground and first floor, had applied for a separate service connection for the upstairs portion of her house on 21.08.2018 by paying Rs.1600/- as registration fee. On 23.08.2018, the utility had examined the appellant's premises for laying wires and to install the energy meter. However, TANGEDCO had noted there was inadequate area to lay wires due to the passing of low tension wires in the vicinity of appellant's house. As a result, the service connection was not given.

On 14.09.2018, the appellant took up the matter with the Chief Engineer. He, in turn, appointed an enquiry officer to do a feasibility report for the service connection. Based on the report, the Chief Engineer issued orders to provide supply to the upstairs portion on 23.10.2018, and, the service connection was effected on 24.10.2018.

Aggrieved by the delay in getting the service connection the appellant registered a complaint with the Consumer Grievance Redressal Forum on 10.12.2018. But CGRF ruled in favour of the utility due to the perceived lack of communication between the parties.

The appellant was not satisfied with CGRF's order. So, he decided to approach the Electricity Ombudsman. On hearing both sides, the Ombudsman noted Regulation 4 of Tamil nadu Electricity Distribution Standards of Performance Regulation, 2004 under Section 43 - Duties of the Licensees to Supply on Request, which states *"every distribution licensee, shall, on an application by the owner or occupier of any premises, give supply of electricity to such premises, within one month after receipt of the application requiring such supply. Further, the Licensees shall endeavor to give supply within a week but not exceeding 30 days wherever no extension or improvement works are involved in giving supply".*

He further added that in this case, the utility had taken 58 days for effecting the service connection. As per Regulation 21 of Tamil nadu Electricity Distribution Standards of Performance Regulation, 2004 *compensation payable for delaying the new service connection is Rs.100 per day of delay, subject to a maximum of Rs.1000/-.* Thus, the Ombudsman issued orders to compensate the appellant to the tune of Rs.1000/- and the compensation amount was to be credited to the appellant's account in the next billing cycle.

ECC VOICE

ஒரு காலகட்டத்தில், பொதுவாக எல்லோர் வீட்டிலும் ஒரு மின் விசிறி மற்றும் சில பல்புகள் அத்தியாவசிய தேவையாகவும், 10 வீட்டிற்கு ஒரு வீட்டில் டிவி, கிரைண்டர், மிக்ஸி, பிரிட்ஜ் அனைத்தும் ஆடம்பர பொருளாகவும் இருந்தது. ஆனால், இன்று இவை அனைத்தும் ஒரு வீட்டிற்கு மிக அத்தியாவசிய தேவையாக மாறிவிட்டது. நாம் பயன்படுத்தும் உபகரணங்களுக்கு தேவையான வோல்டேஜ் (voltage) மற்றும் மின்சாரம்(current) இவை இரண்டையும் தாங்கக்கூடிய அளவிற்கு நுகர்வோரின் சர்வீஸ் ஒயர் அமைந்து இருக்க வேண்டும். ஆனால் நாமோ, அன்று சர்வீஸ் ஒயர்க்கு (service wire) பயன்படுத்திய 3-20 ஒயரையே இன்றும் அதே சர்வீஸ் ஒயர்க்கு பயன்படுத்துகிறோம்.

இந்த சர்வீஸ் ஒயரானது சூடாகும் போது மின்தடை (Resistance Value) அதிகரிக்கும்; மற்றும் உபகரணங்கள் இயங்குவதற்கு அதிகமான மின்சாரத்தை எடுத்துக்கொள்ளும். இச்சமயத்தில் சர்வீஸ் ஒயரானது சூடாகி ஒயர் உருகி (Fuse of Call) மின்தடை ஏற்பட வாய்ப்புள்ளது.

மேலும், ¾' அங்குலம் (INCH) ஒயரிங் பைப்பில் அதிக பட்சமாக 6 ஒயர்களும்,1'அங்குலம் (Inch) ஒயரிங் பைப்பில் அதிக பட்சமாக 10 ஒயர்களையும் கொண்டு செல்லலாம். அளவிற்கு அதிகமாக ஒயரிங் பைப்பில் ஒயர்களை கொண்டு செல்லும் பொழுது ஒயர்கள் சூடாகி வோல்டேஜ் ட்ராப் (Voltage Drop) மற்றும் மின்தடை ஏற்படும்.

இவ்வாறு வோல்டேஜ் ட்ராப் ஏற்படும் பொழுது, உபகரணங்கள் இயங்க, அளவிற்கு அதிகமான மின்சாரத்தை எடுத்துக்கொள்ளும் சூழ்நிலை இருக்கிறது. இதனாலும் மின்தடை (FUSE OF CALL) ஏற்பட வாய்ப்புள்ளது. ட்ரான்ஸ்ஃபார்மரில் (Transformer) உள்ள வைண்டிங்கில் லோடினை சரிசமமாக இணைக்க முடியும். அவ்வாறு செய்தால் அனைத்து மின் இணைப்புகளுக்கும் சரிசமமாக வோல்டேஜ் சென்று மின்தடை ஏற்படாது. இவ்வாறு குறைக்கும் பொழுது வருவாய் இழப்பீடு, ட்ரான்ஸ்ஃபார்மர் (Transformer) கோளாறு, மின் அளவி பழுதினை முற்றிலும் தடுக்கலாம்.

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Initiative of

CAG
Citizen consumer and civic Action Group

Citizen consumer and civic Action Group (CAG) is a non-profit, non-political and professional organization that works towards protecting citizen's rights in consumer and environmental issues and promoting good governance processes including transparency, accountability and participatory decision making.

World News

Renewables set new records in Germany, but 'second pillar' solar needs to accelerate even further

Renewables contributed some 43% of electricity consumption in Germany in the first nine months of 2019 – a new record – however doubts remain over the country's chances of meeting future targets.

New research compiled by both the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) and the German Association of Energy and Water Management (BDEW) produced the figures.

That analysis shows that, in the first three quarters of the year, solar, wind and other renewables produced around 183 billion kWh of power, eclipsing the 125 billion kWh generated by lignite and bituminous coal-fired plants in the country.

Onshore wind was the leading provider of renewable power, producing 72 billion kWh, with solar second at 41 billion kWh.

While Stefan Kapferer, chairman of BDEW's general executive management board, described it as "gratifying" to see renewables' contribution to German power demand grow so strongly, he warned the figures "stand in sharp contrast" to the "dramatic situation" in the growth of renewables in the country.

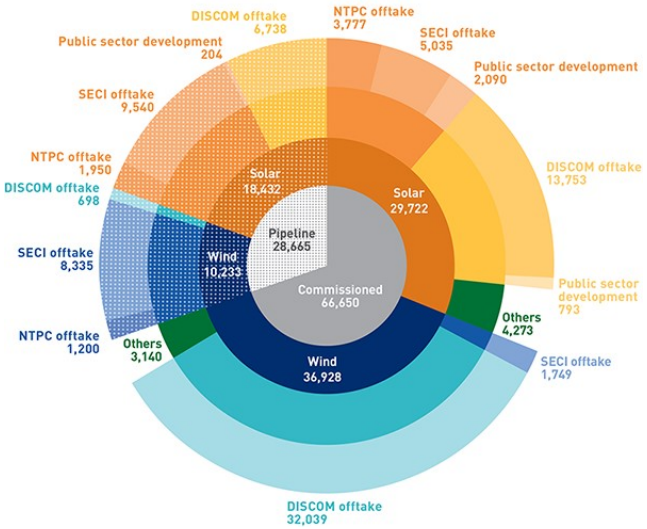
"We are sliding into a real recession for a lack of land and increasingly prohibitive distance regulations. If politicians don't ease off the brakes on the expansion of wind farms, we are going to fall well short of the 65 percent target,"

Source: PVTECH, October 31, 2019

Publications / Regulations

- Order on non-tariff miscellaneous charges, Tamil Nadu Electricity Regulatory Commission (TNERC), October 2019
- Charging infrastructure for electric vehicles - Revised guidelines & Standards. Ministry of Power (MoP), GoI, October 2019
- Future of wind, International Renewable Energy Agency (IRENA), October

Total utility scale wind and solar capacity in India as on September, 2019 (in megawatt)



Source: BRIDGE TO INDIA, October 2019