

Assessing TANGEDCO's Compliance to Distribution Standards of Performance (DSOP): An Analysis of RTI Data for the Year 2016 (Part -1)

Introduction: In India, access to electricity supply is highlighted as a fundamental right. Towards this end, policy initiatives such as '[24 X 7 Power for all](#)' aim to ensure that **reliable and quality supply of electricity** is made available to all households, industry, commercial businesses, public needs, agriculture and any other electricity consuming entity. To ensure utilities do not deviate from the parameters of quality and reliable supply of power, the [Electricity Act 2003](#) under Section 57 has mandated that utilities should adhere to certain standards of performance to protect consumers of electricity. Further, the Act has also stated that non-adhere to standards of performance will attract a penalty.

The Act left the formulation of detailed regulations to the respective State Electricity Regulatory Commissions (SERCs). The SERCs are mandated to monitor if utilities comply with the regulations. The SERCs, as regulators of the sector, are responsible for balancing the interests of the utility and consumers. Their functions include, determining electricity tariff, ensuring fair policies on the subsidy, managing electricity demand and supply, and ensuring transparency in the sector.

From the utility's perspective, its compliance to standards of performance is essentially seen as a benchmark to its adherence. However, in practice not much information is available on the same. There are only broad compliance targets given by utilities, especially Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO), the case study candidate. These do not reveal the true nature of compliance. This study will seek to understand the extent of its compliance by analysing the data from various TANGEDCO distribution circles or field offices. Given the scope of work which will be spelt out in the next issues, the data has been sought for only 2016 which will form the basis for analysis.

In this context the [Tamil Nadu Electricity Regulatory Commission \(TNERC\)](#) has put in place [Distribution Standards of Performance Regulation 2004 \(DSOP 2004\)](#). Under **Section 3**, TNERC's DSOP defines quality of service as "providing uninterrupted, reliable electric supply at stipulated voltage and frequency, which will be the end result of its planning, designing of network, operation and service management to ensure stability in supply and prompt compliance of consumers' complaints on metering and billing". The regulations further highlight that the supply with frequent power failure, fuse of calls, voltage fluctuations will not ensure continuity in supply and will adversely affect consumer satisfaction. It is among the 18 regulations/codes which regulate the behaviour and functioning of the utility ie., TANGEDCO.

Overall, the DSOP regulation issued by the TNERC outlines the standards of performance i.e the minimum standards of service that TANGEDCO should perform, within specified timelines, while supplying electricity to its consumers. This includes providing services such as provision of new/temporary supply or additional load; shifting of service and transfer of service connection, among others. And, the failure of TANGEDCO to achieve the targeted standards of service entail payment of compensation to the consumer as per prescribed regulation.

(to be continued...)

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Internet of Things (IoT) (Part -1)

Internet of Things (IoT) is a system of Internet-connected objects that is able to collect and exchange data over a network without requiring human-to-human or human-to-computer interaction. In simple [terms](#), Internet of Things (IoT) is defined as different smart devices, embedded with sensors and other electronics, communicating with each other over the internet. These devices can be electrical devices such as air conditioning, refrigerator, washing machine, etc. This also applies to humans e.g. a person with a heart monitor implant for monitoring his/her heart beat remotely or say for analysing and understanding animals' migratory movements using a [biochip transponder](#) etc. It is increasingly used in [cars](#) for predictive maintenance before it occurs. With this in context, a consumer of goods and services can actively monitor and control his surrounding environment, home or office automation systems, environmental or biological monitoring, smart grids etc.

Another important aspect of IoT is the ability to collect data to enable collecting, sharing it with devices while undertaking complex predictive analysis. According to [Finoit](#), they serve to collect data, pushing it and sharing it with a whole network of connected devices. This ecosystem of data sharing and analysis make it possible for devices to function autonomously while becoming "smarter" day by day. Any object/device can be [changed](#) in IoT, if it is connected to the internet, to be controlled or communicate information. There are four main components of IoT: 1.Sensors/Devices 2. Connectivity 3.Data processing 4.User Interface

1. Sensors/Devices: In an IoT system, [sensors](#) play a vital role. Each device requires a sensor. Sensors are embedded in the devices where it collects data from the surrounding environment and shares it with the connected network (Wi-Fi, GSM, Ethernet, etc). It should be noted that devices may use a variety of sensors depending on the need and technical interface. Example include - a) Proximity sensors are used in four wheelers; the sensors set off an alarm if there are obstacles while taking reverse. b) Temperature sensors are used in air conditioners to maintain the optimal temperature set by the user. It detects the temperature of air passing through the coils with the surrounding air and based on this, it manages the working of the compressor. This [link](#) will help one understand different types of sensors and its uses.

2. Connectivity: In IoT, connectivity plays a major role as smart technology completely relies on better communication. The data collected by the sensors requires a medium to transfer to the cloud infrastructure (which is also called as IoT Platforms). These transactions need a medium like satellite networks, Wi-Fi, Bluetooth, Wide-Area Networks (WAN). Therefore, it is important to choose a medium based on three parameters namely, a) range, b) bandwidth, and c) power consumption. An ideal connectivity option would consume minimum power, have good range, and would be able to transmit large amounts of data (high bandwidth). The image 2 represents the different types of connectivity.

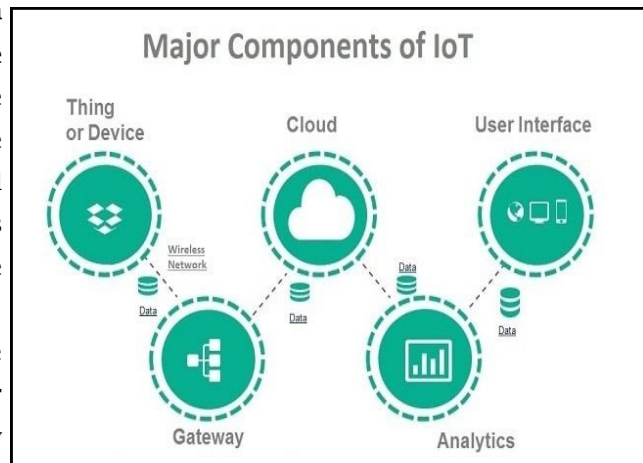


Image 1: Major components of IoT;
Image source: [RF Page](#)

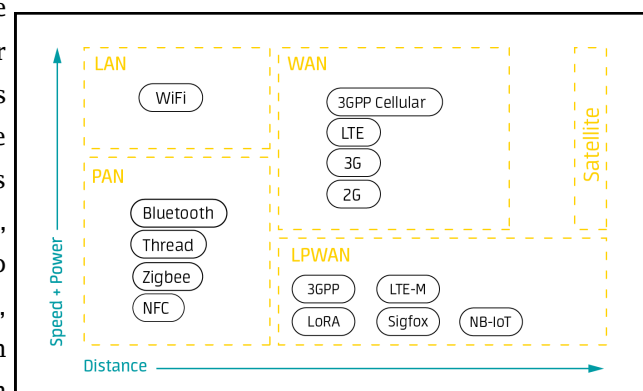


Image 2: Different types of connectivity;
Image Source - www.avsystem.com

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Tamil Nadu News

Tamil Nadu builders now may have to mark space for EB sub-station in big projects

Tangedco is all set to purchase 500MW of solar power at 2.78 per unit from Solar Energy Corporation of India for the next 25 years for the discom to fulfil its renewable (solar) purchase obligation (RPO).

According to the ministry of new and renewable power (MNRE), about 9,000MW of solar power is required for 2021-22 to meet Tamil Nadu's solar purchase obligation.

"As on January 31, 2020, approximately 4,000MW of solar power capacity has been commissioned in the state and another 5,000 MW of solar power is required within the next two years. Considering the on-going projects, only 250MW capacity can be added for the year 2019-20," said a senior Tangedco official.

Based on this, the discom sought the permission of Tamil Nadu Electricity Regulatory Commission for purchasing 500MW of solar power from SECI.

"There is a shortfall of solar power obligation even after floating tenders in four phases since 2016 as not many solar power companies came forward to invest in the state," said the official.

"SECI, On November 22 last year confirmed allotment of 500MW to Tangedco subject to opening of letter of credit (LC). TNERC has now given its nod", said the official. The TNERC order said, "We have carefully considered submissions made by the petitioner (Tangedco) and the commission approves the present proposal of procurement of 500MW solar power through the SECI for 25 years at the rate of 2.711 per unit + 0.07 per unit as trading margin, totalling 2.781 a unit". Each year, the solar power obligation within the PRO has been increasing. "In 2016-17, we had to purchase 1.983MW and this year it is going to be 8,051MW and the next year it will be 9,3898MW. Tangedco's 500MW Kadaladi solar park project is a non-starter and another floating solar project with 250MW is also not ready for commissioning," said the official.

Source: [Times of India](#), June 19, 2020

India News

Indian Energy Exchange launches real-time electricity market to meet power needs

Energy trading platform Indian Energy Exchange on Monday launched the real-time electricity market (RTM) on its platform, a move that will help utilities buy and sell power just an hour before the requirement. The RTM enables consumers, including distribution companies (discoms) and captive users, to buy power on exchanges just an hour before delivery.

The real time market is an endeavour by the regulator, CERC, to make the power market dynamic by enabling trade in electricity through half-hourly auctions, Indian Energy Exchange (IEX) said in a regulatory filing. There will be 48 auction sessions during the day with delivery of power within one hour of closure of the bid session, the filing added. "With the launch of RTM, the Indian energy markets are moving towards global standards of electricity trading and establishing the new energy order in the country. It will support the utilities in reducing dependence on grid deviation framework, of the order of 20 BU in fiscal year 2020," IEX Ltd CEO and Managing Director Rajiv Srivastava said. Srivastava further said that the primary purpose of the real-time market is to allow utilities to manage their power demand dynamically, save on huge deviation related penalties and integrate renewables in an effective way.

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Source: [Business Today](#), June 1, 2020

Consumer Focus

The petitioner, a domestic consumer, submitted an application for 16 new service connections for her housing complex on 11.09.2017. Based on the application, TANGEDCO officials prepared a sketch (sketch -1) for the electrical line paths which included the Vacuum Circuit Breaker (VCB) and new transformer. An estimated amount was prepared for the same. On 06.12.2017, TANGEDCO Officials informed the petitioner to pay an amount of Rs. 3,61,060/- for erecting the transformer, which was paid on 28.12.2017. However, just before the commencement of work on 02.01.2018, the public, including neighbours in the local area objected to the erection of the electrical poles. TANGEDCO officials prepared another sketch (sketch-2) after consulting with the petitioner to continue the expansion work. In order to test the VCB, TANGEDCO officials gave a letter to the Meter Reading Test (MRT) on 14.02.2018 and informed the petitioner to get the service connection. In the meantime, another consumer objected and informed that the place where the pole was being erected was private property. A dispute was ongoing in the High Court. The consumer gave a letter for changing the electrical path.

TANGEDCO officials prepared yet another sketch (sketch-3) to erect the pole. This was prepared after receiving mutual consent and agreement from the petitioner, the consumer who raised the objection, citizens living in the local area, and the MLA of the constituency. Thereafter, the work was completed on 10.03.2018 and the petitioner received 16 new service connections. TANGEDCO subsequently sent a notice to the petitioner to pay an amount of Rs. 1,18,510 on 21.07.2019 for the work done. A notice was sent to the petitioner on 20.08.2019 for the same. TANGEDCO stated that the additional amount was raised due to removal and replacement of poles and due to changes in the electrical path sketches. Aggrieved by the demand, the petitioner approached Consumer Grievance Redressal Forum (CGRF). The petitioner contended she was not liable to pay as electrical infrastructure was erected in a public place and as no work was being undertaken in her premises. The CGRF dismissed the petition. She appealed to the Electricity Ombudsman on 16.10.2019.

On hearing both sides, the Electricity Ombudsman found that based on [Tamil Nadu Electricity Supply Code, 5\(6\)](#) - if a consumer requests for changing the electrical path, the consumer should bear the cost. The cost should be collected before starting the work and receipt should be given to the consumer. However, it was noted that the TANGEDCO failed to do proper inspection and assessment of the electrical path. This led to changing the electrical path twice. It is inappropriate to collect the amount from the petitioner for TANGEDCO's lack of diligence. Hence the Ombudsman ordered TANGEDCO to cancel the payment notice given to the petitioner to pay the amount of Rs. 1,18,510/-.

Source: [Ombudsman Case](#)

ECC VOICE

திருவண்ணாமலை மாவட்டம், துரிஞ்சாபுரம் கிராமத்தில் வசிக்கும் திருமதி. S.அஞ்சனா அவர்கள், அவலூர்பேட்டை சாலையில் புதியதாக வீடு கட்டுவதற்கு தற்காலிக மின் இணைப்பு பெறுவது தொடர்பாக திருவண்ணாமலை மின் நுகர்வோர் மையத்தை தொடர்பு கொண்டார். மின் ஆலோசகர் திரு.ஆனந்தன் அவர்களின் ஆலோசனையின்படி தற்காலிக மின் இணைப்பு பெறப்பட்டது. வீடு முழுமையாக கட்டி முடித்த நிலையிலும், மின் கட்டணம் அதிகமாக செலுத்துவதாக அவர் மீண்டும் திருவண்ணாமலை மின் நுகர்வோர் மையத்தை தொடர்பு கொண்டார்.

மின் ஆலோசகர் திரு.ஆனந்தன், தற்காலிக மின் இணைப்பை, வீட்டு மின் இணைப்பாக மாற்றுவதற்கு மனு ஒன்றினை எழுதி, அம்மனுவுடன் மின் கட்டண ரசீதை இணைத்து சம்பந்தப்பட்ட மின்சார வாரிய அதிகாரியிடம் கொடுக்குமாறு அறிவுறுத்தினார். அவரின் ஆலோசனையின்படி திருமதி. S.அஞ்சனா மின்சார வாரிய அதிகாரியிடம் மனுவினை அளித்தார். மனுவினை பெற்றுக்கொண்ட மின்சார அலுவலர்கள் உடனடியாக வீட்டிற்கு வந்து, வீடு முழுமையாக கட்டி முடிக்கப்பட்டதா என்பதை ஆய்வு செய்து, மின் அளவீட்டை குறித்து கொண்டனர். மேலும், அதற்கான கட்டணத்தை செலுத்துமாறு கூறினர். அதன்படி திருமதி. S.அஞ்சனா கட்டணத்தை செலுத்தினார். பிறகு, தற்காலிக மின் இணைப்பில் இருந்த இணைப்பை LA1A ஆக (வீட்டு மின் இணைப்பு) மாற்றிக் கொடுத்தார்கள். அடுத்த பில்லிங் சுழற்சியின் போது குறைவான மின் கட்டணம் செலுத்தியதாகவும், மின் இணைப்பை மாற்றி அமைக்க உதவிய திருவண்ணாமலை மின் நுகர்வோர் மையத்திற்கும், மின் ஆலோசகர் திரு.ஆனந்தன் அவர்களுக்கும் திருமதி.S. அஞ்சனா தமது நன்றியினைத் தெரிவித்தார்.

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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.

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World News

Japan launches tender for floating wind farm off Nagasaki

Japan has kicked off its first tender for offshore wind capacity, seeking parties willing to build and operate a floating wind farm off the southern prefecture of Nagasaki.

The tender for the Goto project was initiated on Wednesday, the Ministry of Economy, Trade and Industry said. The proposed wind farm will have a capacity of at least 16.8 MW.

The deadline for submitting proposals is December 24, 2020, and a winner will be selected in June 2021. The tender is capped at JPY 36 (USD 0.336/EUR 0.299) per kWh.

The competition is the first one under the country's law for promoting wind development in its waters, which was adopted in the spring of 2019 to support the national clean energy targets. The government then designated specific areas suitable for offshore wind projects, enabling developers to use the zones for 30 years. The sea off the Goto City coast was picked as the first promotion area.

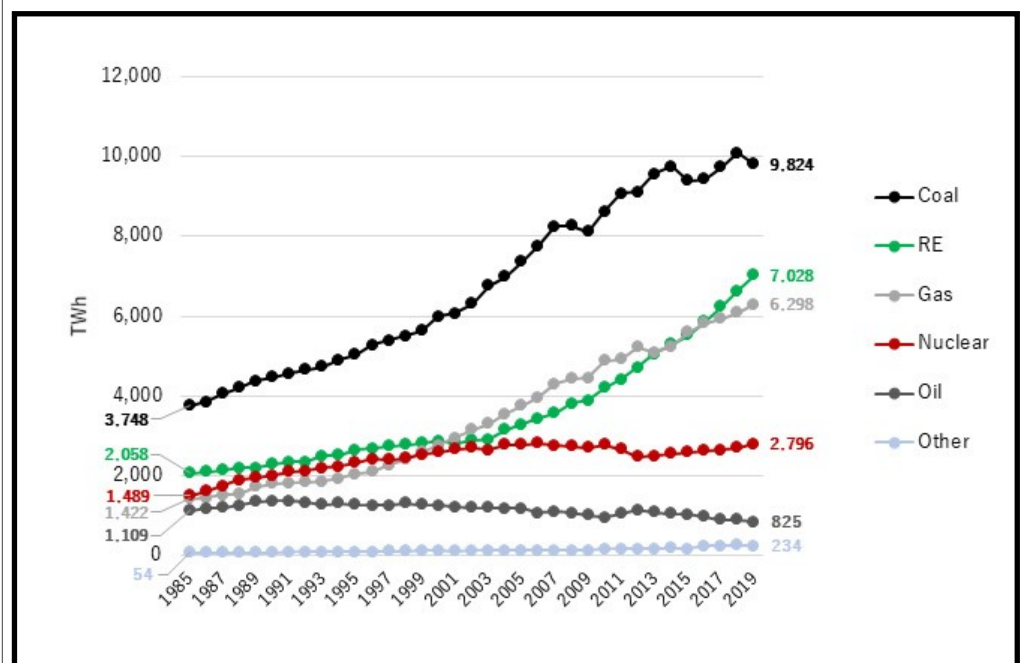
Japan aims to make renewables account for 24% of its total power generation by 2030. This share stood at about 17% last year.

Source: [Renewables Now](https://www.renewablesnow.com), June 25, 2020

Publications / Regulations

- Benchmark costs for Off-grid Solar PV Systems for FY 2020 -21, [MNRE](#)
- Guidelines for installation of innovative standalone solar pumps, [MNRE](#)
- Post - COVID recovery : An agenda for resilience, development and equality, [IRENA](#)
- Renewable Power Generation Costs in 2019, [IRENA](#)

Global Trends in Electricity Generation 1985-2019



Source: [Renewable Energy Institute \(REI\)](https://www.renewableenergyinstitute.com)