

“Terms and conditions” that electricity consumers need to understand (Part-2)

The [previous issue](#) outlined the terms and conditions with respect to the electricity supply for the domestic consumers. This editorial will discuss in detail for the multi storey building consumers.

Things to be remembered by individual consumers:

a. The suggested land/ space should be located at the entrance of the premises. The consumer should provide the land/space to TANGEDCO free of cost for the purpose of laying wires and this space should be easily accessible. The term “free of cost” means the suggested space can only be used by TANGEDCO for their technical processes. {TNE Distribution Code, Service Lines, Clause 29,(5)}.

b. The consumer cannot claim for any damages to their property, during the course of erecting the poles, wire lines, structures, cables and installing other equipment in the consumer premises. The cost for damages has to be borne by the consumer. {TNE Distribution Code, Service Lines, Clause 29,(9)}.

Things to be remembered by the multi storied buildings consumers:

When it is for multi storied buildings consumers, either the building contractor or the land promoter will have to apply for supply of electricity. An approved building plan from Metropolitan Development Authority should be enclosed with the application. A separate space should be given to TANGEDCO for installing transformers, switchgears etc. inside the plot. The space requirements are stated below: For any building / premises requiring Low Tension service connections having either a total floor area of 900 square meter and above (excluding the stilt floor / basement floor) or the total electric supply demand of all the Low Tension service connection in the building exceeds 150 kW (Kilowatt). {TNE Distribution Code, Service Lines, Clause 29,(12)}.

A. There should be a separate electrical room with Reinforced Cement Concrete (RCC) roof. The separate room floor area should be 6m x 4m and it should have 2.75m of vertical clearance. The room should be located on the ground floor of storied buildings close to the main entrance. {TNE Distribution Code, Service Lines, Clause 29,(12)(i)(a)}.

B. If there is no provision for a separate room, an open space of 10m x 4m or 5m x 5m to the sky will have to be provided within the consumer premises preferably at the main entrance for installing structure mounted distribution transformers and associated switchgears. {TNE Distribution Code, Service Lines, Clause 29,(12)(i)(b)}.

In case, if the total demand of the housing/commercial complex exceeds 5 MVA (Mega Volt Ampere), a separate space will have to be allotted for establishment of a substation. A substation is a set of equipment reducing the high voltage of electrical power transmission to that suitable for supply to consumers. Specifically, such areas should be shown in the building approval plan. The required land for installing a substation varies with the voltage level. {TNE Distribution Code, Service Lines, Clause 29,(12)(ii)}.

(concluded)

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Voltage Stabilisers

Electricity is now an essential part of our livelihoods. But along with this reliance on electricity, come two other everyday experiences: power outages and voltage fluctuations. While consumers typically face power outages during certain days of the year (when demand exceeds supply), voltage fluctuations (a change in power supply or voltage to the electrical appliances) happen frequently in many parts of the country throughout the year. As per [TNERC's Supply code section 3 Categories of supply](#), Voltage must be supplied to homes between the range of 210V to 240V. As per [Tamil Nadu Electricity Distribution Standards of Performance Regulations, Section 15 Voltage complaints](#), the utility must maintain the said voltage levels. Any variation outside of this range will constitute voltage fluctuations. If these variations are greater than by 10%, they are considered significant and can damage equipment in homes. These fluctuations are made visible through lights that glow dimmer (during low voltage) or brighter (during high voltage).

There are various causes for voltage fluctuations:

1. Supply of electricity: [Overloading](#) the transformer capacity is one of the reasons for low voltage, where the households, commercial entities etc draw more electricity than the transformer can safely supply.
2. [Natural Causes](#): Obstructions in the transmission lines, which are mostly caused by natural factors such as thunder, lightning, fallen trees and heavy rains can cause voltage fluctuations.
3. Improper wiring: [Improper wiring](#) or wires which are not fabricated properly or wires which do not have the capacity to transfer the necessary amount of power required by an appliance can cause voltage fluctuations.
4. [Interference](#): Connecting too many appliances or any faulty appliance with others to the same circuit or the use of heavy loads such as the air conditioner, refrigerator or motors together at the same time can cause voltage fluctuations.

Voltage fluctuations damage appliances, thereby leading to appliance defects, reducing their performance or ending their useful lives much sooner than expected. The reason for this is that while the voltage goes down, the electric current in the appliance increases, which can result in burning of the appliance. Hence voltage fluctuations need to be fixed promptly for the healthy working of an appliance.

Voltage Stabiliser: Voltage fluctuations can be brought within desired levels using a device called a voltage stabiliser. As the name suggests, these stabilise the voltage ie., when a supply voltage fluctuates or varies (less or more than the acceptable range), it brings it to the desired range. During over or under-voltage conditions, voltage stabilisers perform two essential operations, namely [boost and buck operations](#). These operations are carried out automatically through electronic circuits. When the supply voltage is low, the stabiliser performs a boost operation to increase the voltage to the desired level and a buck operation is performed during over-voltage conditions which reduces the voltage to the desired level. The voltage stabilisers do this by using [electromagnetic regulators](#) that use tap changers with autotransformers.

How to choose the right-sized stabiliser?

Generally, the power rating of appliances is mentioned in W (Watts) and the sizes of voltage stabilisers are mentioned in VA (Volt Ampere) or kVA (kilo Volt Ampere). Based on the power consumption of the appliance, a consumer could increase the watts value by 20% and determine the correct stabiliser. For example, if an appliance that needs to be connected to a stabiliser consumes 1000 Watts, then a 1200 VA stabiliser would be the right choice. **Note:** 20% is suitable for residential systems and may not work in industries.



Image: A voltage stabiliser
Source: [Amazon](#)

Power consumption of voltage stabilisers:

The power consumption of the stabilisers depends on their efficiency. If the stabiliser is 95% efficient, it could consume 5 % of the maximum load. For example, if a consumer uses a 1000 VA stabiliser, it would consume about 50 Watts. If the stabiliser runs for 10 hours, it would consume 0.5 units of electricity. Thus leaving the stabiliser on for 24 hours would lead to 1.2 units of electricity consumption. Therefore using stabilisers for individual appliances is more cost effective than for the whole electrical connection. This is therefore the recommended practice. Choosing the right voltage stabilisers can help consumers to protect high-cost electrical appliances from fluctuations and operate with a steady flow of electricity. It is important to bear in mind that voltage stabilisers that do not adhere to these standards might actually be unable to fulfill their protective role. Consumers must therefore research and procure stabilisers that are fit for their purpose to actually benefit from these appliances.

Tamil Nadu News

Significance of TN's power tariff hike

The move by the Tamil Nadu government to hike the electricity tariff is remarkable on several counts. Being a politically-sensitive issue, successive governments had avoided revising tariffs, with no revision since 2014. Performing under one umbrella, the power generation and distribution utility has ratcheted up a massive loss of Rs 1.13 lakh crore by March 2021, while its debt ballooned to Rs 1.54 lakh crore in the absence of annual financial support from past governments. The TN government, struggling to improve revenue resources, has reached a point where mindless funding of the state-run Tamil Nadu Generation and Distribution Corporation Ltd (Tangedco) is no longer an option.

The Central government has meanwhile given an ultimatum to several state-run power companies to undertake immediate reforms. Though the hike looks substantially high, it's barely making up for the loss, primarily because of the ever-increasing transmission and generation costs. Though TN has an impressive array of renewable power plants such as wind and solar, Tangedco heavily depends on thermal power and purchases from private companies to meet the rising demand. Over the years, the cash-strapped utility has found it difficult to spend on infrastructure works such as substations and transmission lines, the lifeline of an electricity network, leaving consumers in the lurch. The state has a vast potential for solar power and needs to focus on generation as a long-term strategy. Apart from the tariff revision, the Stalin government is also investing in enhancing the transmission and distribution lines.

A consortium of consultants led by EY India is handholding Tangedco to improve its overall performance. Unfortunately, the state that tops the list of wind power production and is a model for others to emulate has a long way to go in terms of overall performance.

Source: [The New Indian Express](#), July 27, 2022

India News

Government implements Suryamitra Skill Development Programme to boost Green jobs

The Ministry of New and Renewable Energy is implementing Suryamitra Skill Development Programme through the National Institute of Solar Energy, Gurugram since Financial Year 2015-16 to train the youth of age above 18 years as solar PV technicians for installation, operation and maintenance of solar power projects. Confirming the information, Minister of State for New and Renewable Energy Bhagwanth Khuba in a written reply in Rajya Sabha on Tuesday said, "Up to June 2022, a total of 51,331 candidates have benefited from the skill development training provided under the Suryamitra programme, out of which 26,967 number of candidates gained employment."

The third-party evaluation report of the Human Resource Development Programme submitted in May 2021 has rated the Suryamitra programme with high-level impact in terms of indicators such as scale/spread of operation, fulfilment of skill gap, work readiness of trainees and employability percentage, the minister said.

Further, the Impact Assessment Report for the Suryamitra training programme prepared by Skill Council of Green Jobs (/topic/green-jobs) in December 2020 reported that more than 90 per cent of the trainees have reported improvement in technical know how, improved performance in the sector and 88 per cent of trainees reported an increase in job opportunities, he added. National Institute of Solar Energy (NISE) is an Autonomous Institute of Ministry of New and Renewable Energy.

Government of India recently created by converting its erstwhile Solar Energy Centre to function as an Apex National Centre for research and technology development and related activities in the areas of Solar Energy Technologies in the Country, located at Gurgaon- Faridabad Road, Gwal Pahari, Gurgaon.

Source: [ANI](#), July 27, 2022

Consumer Focus

The appellant is a doctor with a consulting room on the ground floor of his residential building. The consulting room is given a separate three-phase commercial service connection. The appellant requested to convert it to domestic tariff as he lived in the same building, he submitted a petition to convert the tariff. Based on it, the Assistant Engineer (AE) and Assistant Executive Engineer (AEE) inspected the appellant's building on 10.01.2022 and reported that the dental clinic is functioning on the ground floor and is approximately 600 sq. feet in size. Quoting the rule that the facility can be charged at domestic tariff only when the size of the consulting rooms of any professionals attached to the residence of such professionals is limited to 200 square feet, they did not approve the petition. The aggrieved appellant filed a petition before the Consumer Grievance Redressal Forum (CGRF) on 28.12.2021. The CGRF also passed an order dated 02.02.2022, stating the above rule was only for rooms under 200 square feet. In this case, the consulting room was 600 sq. feet and it therefore could not be charged to domestic tariff.

Aggrieved over the CGRF order, the appellant appealed to the Electricity Ombudsman, with the following details: the appellant has been residing in an independent building and his area of the plot is 2420 Sq.ft. The appellant stated that he has been residing in the same building with his family and uses less than 30% area of the total building for running his doctor consultation with first aid materials, pain relieving machines, and dental first aid treatment, with no lab, X-ray or provisions for admissions. He claimed that only a portion of the ground floor was allocated for his professional consultations.

The Appellant further referred to an [apex court judgement](#) where the Court held that a doctor could run a clinic in his residential apartment without converting to a commercial tariff. In [another similar judgement](#), the Supreme Court held that energy consumed in the residential premises of advocates, lawyers & doctors shall be treated for domestic purposes, even though these persons carry out some professional work in the residence. The appellant further argued that the respondents refused to change the tariff because there used to be a clinic and lab functioning out of that portion, which was no longer the case.

The Ombudsman analysed the Supreme Court judgments and observed that the Tamil Nadu Electricity Regulatory Commission (TNERC) in the present tariff order provides domestic tariff to the consulting room of the professionals attached to the residence of such professionals. The issue is the size of the consulting room which is limited to 200 square feet of the residence of such professionals as per the Tariff Order. The Appellant did not deny the report that the consulting room was 600 sq. feet.

Considering the facts of the case, arguments put forth, the Respondent's report, cases cited, and the statutes relied upon, the Ombudsman passed the following order: a) The TNERC in its Tariff Order [T.P.No.1 of 2017](#), dated 11.08.2017 specified the size of the consulting rooms of any professionals attached to the residence of such professionals is limited to 200 square feet. Further, such a facility is extended exclusively to take advantage of using the residence by the professionals. Therefore, the request of the appellant to tariff change of his service connection from the existing commercial to domestic tariff was not feasible since the size of the appellant's clinic / consulting rooms was more than 200 square feet. b) The petition was disposed of, with no costs.

Source - [Ombudsman Case, TNERC](#)

ECC VOICE

திருச்சி மாவட்டம், பெட்டவாய்த்தலை கிராமத்தில் வசிக்கும் திரு. ரவி, அவருடைய வீட்டிற்கு அருகாமையில் அமைந்துள்ள மின் கம்பத்தின் கீழ் பகுதி பழுதடைந்த நிலையில் பல மாதங்களாக இருப்பதை அறிந்து அக்கிராமத்தில் இருக்கும் மின் வாரிய ஊழியரிடம் கூறியுள்ளார். மின் அலுவலகத்தில் புகாராக பதிவு செய்யும்படி அவர் கூறியதால் திரு.ரவி அருகில் உள்ள மின் அலுவலகத்திற்கு சென்று தனது புகாரை இளைய பொறியாளரிடம் தெரிவித்துள்ளார். அடுத்த நாள், இளைய பொறியாளர் உதவி பொறியாளர் மற்றும் மின் வாரிய ஊழியர்கள் பழுதடைந்த மின் கம்பத்தினை பார்வையிட்டனர். மேலும், இந்த புகாரை ஒரு வாரத்தில் நிவர்த்தி செய்கிறேன் என்று உதவி பொறியாளர் கூறினார். ஆனால் அவர் இரண்டு வாரங்களுக்கு மேல் ஆகியும் புகாரின் மீது எந்த நடவடிக்கையும் எடுக்கவில்லை. அதனால் திரு. ரவி, மின் நுகர்வோர் மையத்தின் தொலைபேசி எண்ணை செய்தித்தாள் மூலமாக அறிந்து திருச்சி மின் நுகர்வோர் மையத்தின் ஆலோசகரை தொடர்பு கொண்டார். புகாரினை பெற்ற மின் ஆலோசகர், உதவி பொறியாளரை தொலைபேசியில் அழைத்து மின் கம்பியை விரைவில் மாற்றி தருமாறு கேட்டுக்கொண்டார். மின் நுகர்வோர் மையத்தின் புகாரை பெற்ற மூன்று நாட்களில் மின் அலுவலர்கள் மின் கம்பத்தினை மாற்றி அமைத்தனர். திரு. ரவி தனது புகாரின் மீது நடவடிக்கை எடுக்க உதவி செய்ததற்காக திருச்சி மின் நுகர்வோர் மையத்திற்கு நன்றியினை 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

Ireland sets targets to halve greenhouse emissions

The Irish government on Thursday agreed targets to limit carbon emissions in key sectors of the economy after the leaders of coalition partners the Green Party, Fianna Fail and Fine Gael compromised on a 25% cut for the agricultural sector. Ireland's agriculture sector is responsible for around 38% of the country's greenhouse gas emissions, and the target replaces a range of between 22% and 30% set out in last November's Climate Action Plan. Ceilings set for greenhouse gas emissions for other sectors will require a 75% reduction for the electricity sector, a 50% reduction for transport, 40% for residential buildings, and 35% for industry. "The targets that have been set today are going to be challenging for all sectors but they are also fair, appropriate and, importantly, based on what is achievable," Environment Minister Eamon Ryan said in a statement. The Climate Action Plan apportioned the burden of reducing greenhouse gas emissions by 51% by 2030 by sector, and will require around 125 billion euros (\$144 billion) of private and public investment. It listed around 1,000 measures including a target of one million electric vehicles and upgrading 500,000 homes by 2030 - including by insulating poorly heated houses and installing energy efficient alternatives such as heat pumps.

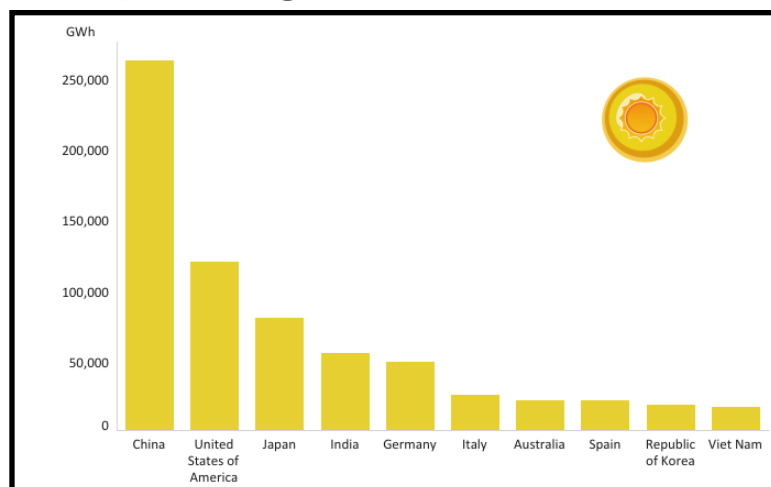
An additional 500,000 people should switch from driving to walking, cycling or public transport. Grants, incentives and taxes will be used to nudge individuals towards investing in climate-friendly technology, while the public sector will be banned from purchasing vehicles and heating systems powered by fossil fuels. Up to 80% of electricity generation should be produced by renewable electricity, much of it from offshore wind, the November report said.

Source: [Reuters](#), July 28, 2022

Publications / Regulations

- Tracking SDG 7: The Energy Progress Report (2022), June 2022, [IRENA](#)
- RE-organising Power Systems for the Transition, June 2022, [IRENA](#)
- World Energy Investment 2022, June 2022, [IEA](#)
- The value of urgent action on energy efficiency, June 2022, [IEA](#)
- Draft Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2022. Notified on June 2022, [CERC](#)

Country Rankings - Solar Generation (2020)



Source: [IRENA](#)