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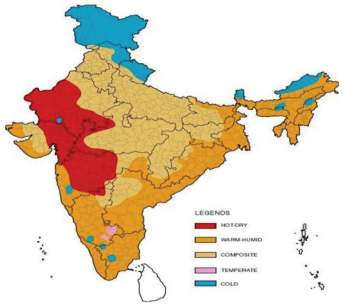
Current News
மின் செய்திகள்

March, 2023

Energy Conservation Building Code for Residential Buildings (Part-2)

The previous issue of this series, we saw how energy consumption is increasing within the building sector, especially within the residential building sector. We also saw that air conditioning load is the biggest culprit in terms of residential energy consumption. Now, in continuation to this, we will analyze the causes of this increase in use of air conditioners in the residential building sector. Not only are we seeing increased need for air conditioners (space cooling) in **cooling dominated climates,** but also there is a need for heating equipment in buildings in **heating dominated climates.**

Cooling dominated climates: These are climates where the ambient temperatures are high during a major part of the year and mechanical space cooling is required for thermal comfort. **Heating dominated climates:**These are climates where the ambient temperatures are low during major part of the year and mechanical space heating is required for thermal comfort.



Climate zone map of India
Source: BEE

The heating load is the amount of heat energy that would need to be added to a space to maintain the temperature within an acceptable range. The cooling load is the amount of heat energy that would need to be removed from a space (cooling) to maintain the temperature within an acceptable range. The heating and cooling loads, or "thermal loads", take into account: the dwelling's construction and insulation; including floors, walls, ceilings and roof; and the dwelling's glazing and skylights; based on size, performance, shading and overshadowing. Lower thermal loads indicate that, relatively, the dwelling will require less heating and cooling to maintain comfortable conditions.

Figure 1: Walls included in the design of building envelope. Source: BEE

Building Envelope: The elements of a building that separate the habitable spaces of dwelling units from the exterior and are exposed to the ambient (i.e., exposed directly to external air and opening into balconies). It does not include walls facing open corridors and enclosed shafts, as well as walls of common services such as lifts and staircase. (Dotted lines show the walls included in the definition of building envelope).

In the upcomin series we will discuss in detail about the components of creating an energy efficient building envelope and why it is key for energy efficient building design in light of the Energy Conservation Building Code for Residential Buildings.

(To be continued)

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Role of electricity in the lives of Indian women & girls (Part-1)

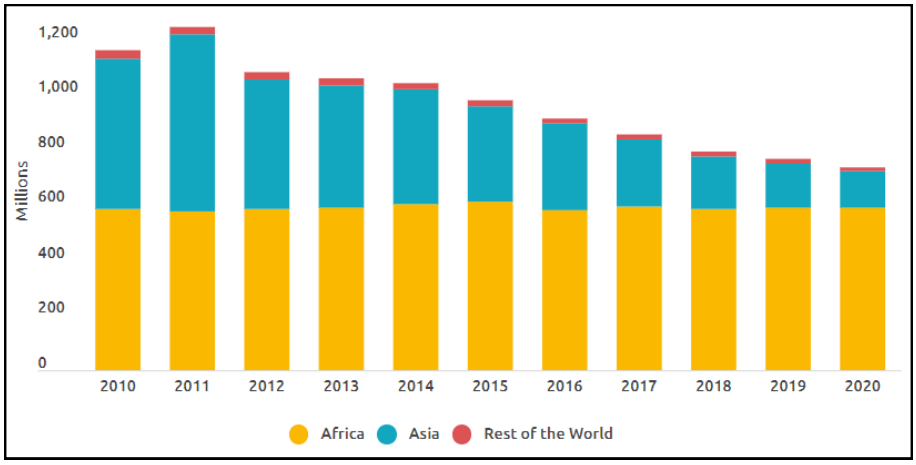
India is the third largest energy consumer, says the India Energy Outlook 2021. According to reports, 99% of the Indian population already have access to electricity - the critical infrastructure. However, in India, a village would be declared as electrified if it has:

- Basic infrastructures such as distribution transformer and distribution lines;
- Electricity supplied to its public places like schools, panchayat office, health centers, dispensaries, community centers etc;
- Electricity connections to at least 10% of the total number of households of the village.

So by definition, 99% of India could be considered electrified, but in reality, many, especially the marginalized, still struggle with no, poor or unreliable access to electricity.

The influence of electricity and its uniform access across the country has to be analyzed in a multi-dimensional manner. This article will spell out the 'role of electricity in the lives of Indian women and girls' in that regard.

Energy, time and poverty - the nexus: Globally, though the electrification rate is increasing, 733 million people did not have access to electricity in 2020. According to the International Energy Agency (IEA), this was further projected to increase by nearly 20 million in 2022, reaching about 775 million.



Population without electricity access, millions, 2010-2020, Source: SEforAll

Addressing the gap in access to electricity is crucial for strengthening social inclusion and integration. Affordable, accessible and efficient electrification contributes to the eradication of 'energy poverty' and its consequent 'time poverty'.

Time poverty is a condition when we have several responsibilities but not enough time to do it. One or many reasons contribute to time poverty such as busy work schedules, family commitments, lack of facilities etc. A time poor person, therefore might not do all of what they have to do, or do many of them, but not at the desired quality. Overall, time poverty gives rise to difficulties in well-being, health, productivity and interpersonal relationships. Energy poverty, which can be defined as the lack of or inability to access energy and energy services, can give rise to time poverty. In households with poor or no electrification, and resources or appliance availability, tasks like cooking, washing, cleaning etc. consume longer, leaving less time and energy for individuals to focus on other activities. Low incomes can be both the cause and the consequence of poor access to desired energy levels.

Unequal distribution of affordable and safe energy across nations can result in vulnerable families living without access to meet their energy needs. When studies highlight that 70% of 1.3 billion people living under poverty are women, it is typically women who shoulder the weight of energy poverty and its consequent time poverty. The dominant reason for this is their disproportionate responsibility of household duties. As women and girls are the chief caretakers of energy related domestic activities, lack of access to energy sources, inefficient or fewer efficient appliances used by them and the disproportionate share of income spent on household energy make them predominant victims of this vicious cycle of energy, time and poverty.

(To be continued)

Tamil Nadu News

TN's power demand touches all-time high

With gradual rise in mercury due to the onset of summer, the state on Saturday saw its power demand touching an all-time high of 17,584 MW with solar and wind generation coming in handy to meet demand. According to the Tangedco data, the state has recorded an all-time high demand of 17,584 MW at 10.30 am on Saturday bettering the previous maximum of 17,563 on April 23, last year. The daily energy consumption on Saturday stood at 361.455 million units. "This summer power demand is likely to be very high. We have already crossed the last year's peak of 17563 MW of 29/4/2022 on a low demand day ie Saturday," Tangedco CMD Rajesh Lakhani tweeted. A senior official of Tangedco said the power demand has gone up early this year and is expected to cross 18,500 MW in April end. "On Saturday, the power demand crossed 16,600 MW by 8 am and it peaked to 17,584 MW at 10.30 am. Last year's maximum peak demand was during the afternoon at 2.30 pm," the official said. Though the demand has gone up suddenly, thanks to the solar and wind generation which helped to meet the demand. Of the 17,584 MW, the solar generation and wind together contributed over 4500 MW.

The official attributed the increase in the power demand to industrial and agricultural demands. "We are providing power supply during the day time for the agricultural consumers to make use of the solar generation," the official said. On meeting the power demand for the peak summer months, the official said the demand during the day time would be met without any hassle due to the availability of solar power. "During the evening peak demand, the power purchases from the exchange and short term basis would be used," the official added.

Source: dtnext, March 06 2023

India News

10.4% growth in energy consumption Y-o-Y from April, 2022 to February, 2023: Union Power & NRE Minister Shri R. K. Singh

The comparison of energy requirement and energy supplied for the month of February, 2023 and February, 2022 and for the period April, 2022 to February, 2023 and April, 2021 to February, 2022 is given at Annexure-I. The growth in energy supplied/consumption in February, 2023 is 8% as compared to February, 2022 whereas growth in energy supplied/consumption for the period April, 2022 to February, 2023 is 10.4% as compared to the period April, 2021 to February, 2022. The peak demand in the month of March, 2023 has been projected as 212 GW whereas only 209 GW has been reported till date in the month of March, 2023. The month of April, 2023 and May, 2023 have been projected as high demand period. During the current year 2023-24, the peak demand is expected to be around 229 GW during the summer period. Following steps have been taken for meeting the increased demand for power: Measures have been taken to ensure the availability of the generation capacity. The generators are directed to complete the maintenance work of their plants well before the period of high demand. No planned maintenance will be taken during the high demand period (say April & May, 2023.

Monitoring and coordination with Ministries of Coal and Railways, on a regular basis, for increase in the production and dispatch of coal as much as possible. All generators have been asked for timely import of required coal for blending purposes so that adequate coal stock is maintained in the plant. All captive coal blocks have been asked to maximize the coal production to supplement the coal supply from domestic coal companies (CIL and SCCL). Additional arrangement for gas for running gas based stations has been planned from GAIL, during high power demand months. Imported Coal Based (ICB) plants have been issued statutory directions to stock coal and generate power during high demand period. The State-wise power supply position for the year 2021-22 and current year 2022-23 (up to February, 2023) is given at Annexure-II. The marginal gap between energy requirement and energy supplied is generally on account of factors such as constraints in distribution network, financial constraints, commercial reasons, etc.

Source: PIB, March 23, 2023

Consumer Focus

Ombudsman Case:

The appellant (consumer) had applied for two new service connections on 12th August 2022, after construction of their new house. After the appellant submitted the application along with required payments, the AE (Assistant Engineer) visited the premises on 17.08.2022. Upon inspection, he stated that the wiring was incomplete.

The appellant was given the clarification by the respondent (utility) that the wiring had not been done from the meter box to the pole. The appellant procured the cable along with other required components and completed the wiring with the help of their own electrician. All the expenses were borne by the appellant. The appellant later came to believe that this section of the wiring (from the pole to the meter box) was to be carried out by the utility.

He therefore filed a complaint in the Consumer Grievance Redressal Forum (CGRF) on 03.11.2022, seeking refund of the expenses of Rs. 17,172/- incurred by him, along with Rs. 5000/- as compensation for stress and mental agony caused by the respondent. But the CGRF did not hear the case. Therefore, the appellant brought his appeal petition to the Electricity Ombudsman.

The appellant submitted that upon being instructed to complete the wiring, they had incurred a cost of Rs. 17,172/-, to complete the work. The appellant argued that under Section 43(2) of the Electricity Act, 2003 the utility has to supply the material and bear the cost of wiring from pole to meter. The appellant wanted a refund of the total cost incured (Rs. 17,172/- from the respondent).

The appellant further argued that this prolonged struggle for getting the connection had caused mental agony and stress. The appellant was aggrieved by the effect on his mental health and seeked for an additional Rs.5000/- as compensation for this.

The respondent argued that they are entitled to collect the actual cost of the materials from the pole up to the meter board under Clause 45 of Tamil Nadu Electricity Distribution Code (TNEDC) from the consumer. The respondent also stated that they did not collect any service connection charges since wiring was done by the appellant. The respondent further stated that there was no deficiency in the service provided. It was also argued that the claim for stress and mental agony is not covered under Clause 21 of Tamil Nadu Electricity Distribution Standards of Performance Regulations (DSOP).

The Ombudsman observed that the claim for refund was not acceptable under TNEDC. The Ombudsman also stated that CGRF had failed in its duty by not hearing the appellant's case and ordered that it must strictly follow the Regulations for CGRF & Electricity Ombudsman, 2004 in future cases.

Considering the facts of the case, arguments put forth and the statutes relied upon, the Ombudsman passed the following order:

- The claim for refund of the cost of materials is not in compliance with TNEDC and claim for compensation due to stress and mental agony is not in compliance with DSOP, hence it is rejected.
- The petition is dismissed with no costs.

Source: **Ombudsman Case**, TNERC

Note: Consumers have to pay for the wiring charges from the pole upto the meter board, this has to be considered before applying for a new connection. For more details on these charges please refer to CAG's article on 'Understanding the different charges when obtaining a new electricity connection'.

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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.

World News

S.African lenders say power cuts detrimental for small, medium industry

Three of South Africa's top four lenders have warned that hours of daily power cuts could hurt small and medium-sized enterprises (SMEs), which are considered the backbone of the nation's economy. SMEs in Africa's most industrialised nation represent more than 98% of its businesses and employ more than half of its workforce, according to a McKinsey study. Issues affecting this sector could in turn further hurt gross domestic product, which shrank a greater-than-expected 1.3% in the final three months of last year.

State-utility Eskom implements daily power cuts, called load-shedding, in stages with Stage 1 the lowest. At stage 6, power could be cut for more than 10 hours a day, resulting in some of the harshest blackouts in living memory. Nedbank (NEDJ.J) said in its earnings release this week that costs to the economy in lost production would escalate exponentially to about 408 million rand ($22.32 million) per day at stage 4, and more than double at stage 6, with the brunt falling on SMEs. "Higher stages of load-shedding towards the end of the calendar year presented a challenge for small and medium-sized enterprises (SMEs) and sole proprietors, in particular," FirstRand (FSRJ.J), the country's biggest bank by market capitalisation, said this week.

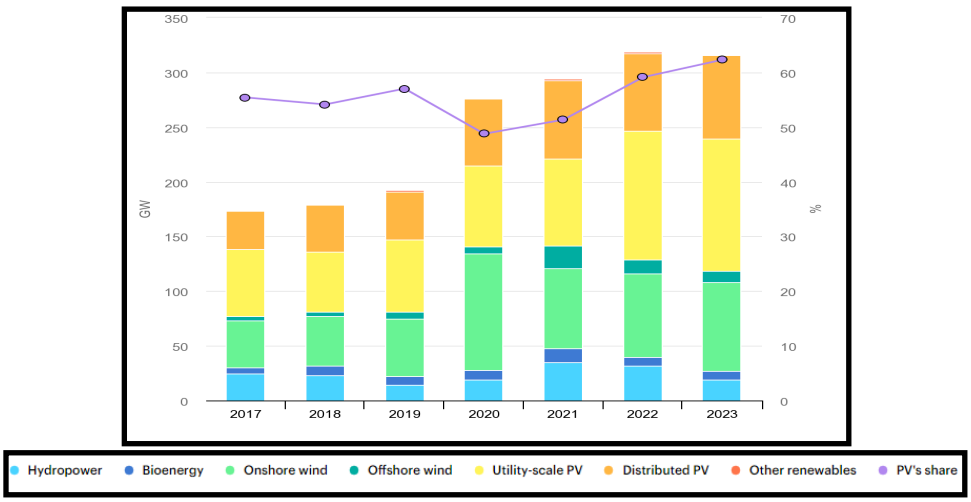
Rating agency Fitch said on Friday persistent blackouts have "caused significant disruption and reduced business confidence, currently at a two-year low." This adds to existing asset quality and profitability pressures for local lenders, who are otherwise said to be among the most capitalized banks in the continent.

Source: Reuters, March 10, 2023.

Publications / Regulations

- Draft Electricity (Rights of Consumers) Amendment Rules, March 2023, Ministry of Power
- Renewable capacity statistics 2023, March 23, IRENA
- Approved Models and Manufacturers of Solar Photovoltaic Modules {Requirements for Compulsory Registration} Order, 2019: Amendment, March 2023, MNRE

Net renewable capacity additions by technology, 2017-2023



Source: IEA