

# Unplugging electrical hazards: Towards better public safety in Karnataka



A wire dangerously hanging on a footpath in Bengaluru. | Photo Credit: K. MURALI KUMAR

## Rishu Garg

### Accidents mostly occur due to poor operation and maintenance of the distribution infrastructure

Last month, the unfortunate news of a [father-daughter duo dying from electrocution](#) due to a transformer blast in Bengaluru put a big question mark on electrical safety in public places. The Thanjavur tragedy has again put the spotlight on the risks of inefficient and inadequate electrical infrastructure.

According to a Karnataka Government site, data from the last three years (FY 18-19 to FY 20-21) show that 58 departmental and 1,077 non-departmental fatal accidents took place at five state electricity distribution companies (DISCOMs) during this period.

The DISCOMs are usually responsible for the laying of distribution infrastructure that supplies electricity to the end consumers (residential, industrial, commercial, agriculture, and others). Though several public safety measures are in place, electrical accidents do occur, causing injury and/or loss of life and property.

Such accidents mostly occur due to poor operation and maintenance of the distribution infrastructure. Uninsulated overhead electrical lines are a common cause of electrocution. Any contact or close proximity with such lines can allow electricity to be conducted to the earth, causing an electric shock, fire, or explosion. Poor maintenance of electrical assets such as distribution transformers and continuous use of faulty equipment constitute another safety hazard.

### **Distribution transformer**

As per the Central Electricity Authority (Technical Standards for Construction of Electrical Plants and Electric Lines) Regulations, a distribution transformer should be installed either on pole structures (depending on the transformer capacity) or on a plinth. The pole structure/plinth is to meet the ground clearance level (around three metres by two metres) for setting up a transformer.



An unguarded transformer in Bengaluru. | Photo Credit: FILE PHOTO

The transformer areas should be protected with fences, anti-climbing devices, and locked doors to avoid any unauthorised access. The transformers also need frequent check-up/maintenance visits to gauge the correctness of crucial parameters such as oil temperature and leakage, and to identify any loose nuts and bolts etc, which could lead to transformer failures or blasts. However, such compliance and proactive maintenance visits are mostly overlooked, resulting in an unsafe environment for people.

While the Karnataka Power Transmission Corporation Limited has brought in certain compensation provisions to give some relief to the victims of electrical mishaps and/or their family members, a lot more needs to be done. To start with, steps should be taken to ensure that such accidents do not occur.

### **Preventive measures**

For this, independent third-party audits should be conducted to detect any safety issues. The audits would also help in ensuring strict adherence to the conditions laid out by the Central Electricity

Authority for distribution network infrastructure. In case of overhead lines, a minimum height from the ground as per the voltage should be ensured, in accordance with The Indian Electricity Rules, 1956 (Section 77).

Another measure could be underground cabling that can avoid electrocution due to overhead lines. However, while underground cabling is effective, it is more expensive to build and maintain. Thus, DISCOMs will need to perform a thorough cost-benefit analysis for laying underground cables.

The Central Government has also initiated various schemes and reforms to tackle the issues related to poor electrical infrastructure, the most recent being the Centre's Revamped Distribution Sector Scheme (RDSS), which aims to provide reliable power supply to all by improving the operational and financial efficiency of DISCOMs and strengthening the supply infrastructure.

The scheme has a total outlay of ₹3.03 lakh crore, of which Karnataka is expected to receive ₹8,298 crore for its power infrastructure. If used efficiently, this investment can help in considerably improving the state's infrastructure, which can translate into better electrical safety for all.

*(The author works in the Energy and Power sector at the Center for Study of Science, Technology and Policy, a research-based think tank.)*