

Concept Paper

Webinar on “Use of Drones in Operation / Maintenance of Power Transmission Lines”

Monday, 3rd May 2021 : 1000 – 1130 hrs Pakistan Standard time (PKT)

Background:

The Transmission and Distribution (T&D) through overhead power lines ensures the continuous flow of electricity from generation sources to the consumption point. Due to relatively old age of these structures, most electric utilities operating power transmission lines encounter some typical maintenance problems. The electric utilities must also cope with unforeseen issues that cause electrical system disturbances such as tree-induced cascading line failures, failed electrical protection systems, major storm damage and other component failures etc.

The operation and maintenance measures for these power lines must be carried out regularly to avoid damages to them which could lead to power outages and have an impact on the whole community and the economy. The inspection of Power Transmission lines is an expensive and time-consuming affair. The electric utilities regularly require a visual inspection of each power line every 1–2 years and a detailed inspection every 3–5 years. Such inspections usually require one of three methods: walk, drive, or fly. For rural power lines in remote areas, rough terrain makes walking or driving nearly impossible or excruciatingly slower.

These inspections are typically completed manually using climbing, bucket trucks, long-range photography or helicopter. Clearly, manual inspections involving climbing or using buckets have inherent hazards. Moreover, Ground-based data collection typically lacks the required detail and flexibility.

Introduction:

The increased usage of drones in transmission & distribution both, opens up new possibilities and replaces existing work. Such commercial use of drones is growing quickly. The drones provide a practical solution for the inspection of transmission and distribution (T&D) lines, as well as substations. The drones support business efforts to avoid hazardous man hours; reduce costs for maintenance, inspections, and repairs; and minimize downtime.

In the SAARC Region, electric utilities may save time and cost with the use of drones. For example, with a drone, substation inspections can be completed within an hour and no shut-down is required. The webinar shall feature presentations, and interactive discussion sessions led by resource person(s) from regional/ international markets.

Objectives:

The objective of this webinar is to introduce and familiarize the professionals with the latest technologies used in the drone which could be used for inspection, operation & maintenance of power transmission lines in the SAARC Member States. This webinar shall serve as a knowledge dissemination event specifically for those officials who are working in the public/private Electric utilities, and the Regulator/Energy Ministry.

Major Aspects /Topics to be covered during the Webinar:

During the course of this Webinar, the experts shall cover those latest technologies which are currently being used for Inspection, Operation and Maintenance of Power Transmission lines through the use of Drones. These include High-resolution digital and thermal cameras, Light Detection and Ranging (LiDAR) sensor, Geographic information system (GIS) sensors, Forward-Looking Infrared (FLIR) or Ultraviolet sensors, etc.

Potential Professional Resource:

The Expert(s)/Resource person(s) from leading firms shall be engaged during the webinar. They shall deliver their presentations and respond to questions by the participants.

Venue of the Webinar:

The Webinar shall be broadcasted from the office of SEC on Monday, 3rd May, 2021.