

<b>Concept Paper</b>		
<b>Webinar on “Use of Covered Conductors in Medium Voltage Power Transmission”</b>		
<b>Webinar</b>	<b>PRG-218/2021/POSIT</b>	<b>SEC</b>

**Background:**

Traditionally, medium voltage distribution networks (1 kV to 35 kV voltage level as per IEEE1585) employ bare aluminium overhead conductors for power transmission. The uninsulated bare conductors are vulnerable to line trip-outs and ground faults due to brief electric crosses or contacts with tree branches and oversized vehicles. Bare conductors also require more spacing between different phases. Covered conductor systems were developed in the 1970s and are used extensively in Europe, Australia, America and the Far East. The use of covered conductors allows for more compact assemblies and lower masts and poles, and helps to minimise the environmental impact of transporting electricity by reducing the visual intrusion of wires, poles and transmission towers.

The covered single conductor forms the basis of all MV covered conductor systems. The covered conductor system, although not a touch-safe screened cable system, is designed to provide protection from initiation of flash-overs due to clashing of conductors, bird or animal incursions, and tree branches or debris which has blown or fallen on to the line, especially in conditions of severe weather and high pollution. Covered conductor consists of single core conductors with a variety of insulation layers and outer sheath coverings. The conductors are generally of aluminium, aluminium alloy or aluminium core steel reinforced construction (ACSR).

**Introduction:**

SAARC Energy Centre (SEC), under its thematic area of “Programme to Successfully Implement Technology Transfer (POSIT)”, and upon the request of the Member State Sri Lanka is organizing a webinar on “Use of Covered Conductors in Medium Voltage Power Transmission” for the FY 2021. The webinar will be a 1.5 hours activity and will consist of presentations from various experts who will share their experience on the usage of covered conductors for medium voltage power transmission.

In this webinar, experts will delve into the benefits of the covered-conductor system, various types of the covered conductors, the applications of each type and the economics associated with the covered-conductor system. The webinar will share a comparison of underground cable

with the overhead covered conductor system. The discussion will also cover a cost-effective approach for the SAARC Member States to employ covered-conductor distribution network in congested areas.

### **Objectives:**

The objective of the webinar will be to share information on the application of the covered-conductor system in the distribution network. The motive shall be to enable the distribution utility network planning engineers working in the SAARC region to make an informed decision on the choice of medium voltage distribution covered-conductors best suited to their specific planning constraints.

### **Major Aspects /Topics to be Covered:**

The following aspects shall be covered during the webinar:

1. Advantages of covered-conductor system.
2. Types of covered-conductors.
3. Comparison of underground cable and covered-conductors.
4. Cost-effective method to utilise covered-conductor system.
5. Knowledge sharing and interactive discussions.

### **Relevance, Coherence and Sustainability:**

The webinar is covered under its thematic area of “Programme to Successfully Implement Technology Transfer (POSIT)” and is related to SEC’s goals to enhance SAARC expertise in energy development and management. Through this webinar, SEC will strive to disseminate useful information to the participants on modern methods of mapping out distribution network.

### **Potential Professional Resource:**

The experts/speakers specializing in distribution networks and the application of covered-conductors for power transmission will be engaged during the webinar. They shall deliver their presentations during the webinar and respond to questions by the participants. SEC Program Coordinator will finalize the event program in close coordination with the speakers.

### **Venue of the Workshop:**

The webinar shall be broadcasted from the office of SAARC Energy Centre.