

Concept Paper		
Intelligent Lighting Systems		
Webinar	PRG-221/2021/POSIT	SEC

Background:

Adequate lighting conditions are important for nearly every task of human life. The artificial lighting makes the modern life possible and enhances our productivity. The lighting systems consume about 20% energy of world’s total energy consumption¹. This high consumption of energy by lights can be reduced through the deployment of intelligent lighting systems.

Traditionally, we control a light using a simple on/off switch inside our homes or offices, which cannot take into account ambient conditions or human comfort and does not have communication capability. Similarly, during night time the street lights are left turned on even if no traffic is passing for hours, thereby wasting energy. To overcome this, some power management and control of lighting system at home, office or street is needed. The intelligent lighting system is an energy efficient smart system that uses motion and light sensors as well as wireless communication technology to control luminous intensity of lighting fixtures with respect to user movement and ambient lighting conditions.

Introduction:

SEC, under its thematic area of “Programme on Successfully Implement Technology Transfer (POSIT)”, is conducting a webinar on “Intelligent lighting Systems”. The webinar would be of 1.5 hours activity, including presentations from experts having knowledge and expertise of intelligent lighting systems. The webinar will discuss in detail the economics, technology and performance of intelligent lighting system vis-a-vis the conventional lighting system. Manufacturing requirements and existing market conditions around the globe and in SAARC region shall also be discussed.

¹ Patil N, Wani A, "Intelligent Lighting System with Energy Efficiency," in International Journal of Engineering Sciences & Research, 2016.

The webinar will disseminate useful information about the components and features of an intelligent lighting system such as system controller, sensors and wireless or remote-control capability. The experts will also highlight the energy efficiency improvements as well as energy savings achieved through an intelligent lighting system.

Objectives:

Intelligent lighting system offers benefits such as automatic switching of lights, reduction in maintenance cost, reduction in CO₂ emissions and light pollution, reduction of cooling load, energy saving and reduction of manpower. The overall objective of this webinar is to spread awareness among the people of South Asia about the use of intelligent lighting system for their comfort and wellbeing.

Major Aspects /Topics to be covered during the Webinar:

The following aspects will be covered in the webinar (but not limited to):

1. LED Technology
2. Basic principle of intelligence system
3. Types, size and rating
4. Architecture of Intelligent Lighting System
5. Sensing (motion, light intensity, hours of the day, touching) and control strategy
6. Potential energy savings
7. Market of Intelligent Lighting Systems
8. Environmental, social and health benefits
9. Case studies and successful example of Intelligent Lighting System

Relevance, Coherence and Sustainability:

The webinar is relevant to the efforts of SEC for implementation of and best practices to improve energy efficiency and reduce energy wastage by sharing advanced knowledge. In the past, SEC has conducted numerous events – workshops, trainings and webinars – on energy conservation, energy audits and energy efficiency. Through this webinar, SEC shall share basic knowledge about

intelligent lighting systems in SAARC region. As the importance of energy conservation and energy efficiency is likely to increase in South Asia, SEC will hold more such events in future.

Potential Professional Resource:

In this webinar, experts of intelligent lighting system, within and outside the SAARC region, will share their knowledge. They will present and respond to the questions by the participants. SEC Program Coordinator will supplement the event program in coordination with the speakers.

Venue:

The Webinar shall be broadcasted from the office of SAARC Energy Centre, Islamabad.