

## Concept Paper

### Webinar on “Intelligent Lighting Systems”

#### **Background:**

Adequate lighting conditions are important for nearly every task of human life. The artificial lighting makes the modern life possible by enhancing our productivity. The light units consume about 20% energy of world's total energy consumption<sup>1</sup>. This high consumption of energy by lights can be reduced through the employment of new and smart technology in lighting called as intelligent lighting system.

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. As a result, some power management and control of lighting system in a home, office or street is needed in order to save energy. 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 “Program on Successfully Implement Technology Transfer (POSIT)”, is proposing a webinar on “Intelligent lighting Systems”. The webinar will include presentations from experts having knowledge and expertise of intelligent lighting system design utilizing smart LED lights. The webinar will discuss in detail the economics, technology and performance of intelligent lighting system vis-a-vis the conventional lighting system. Local manufacturing requirements and existing market condition in SAARC region shall also be discussed.

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. Presenters will also highlight the energy efficiency improvements achieved as well as energy savings made with an intelligent lighting system

#### **Objectives:**

The overall objective of this webinar is to spread awareness among the people of South Asia about the use of efficient and comfortable light for their satisfaction and wellbeing. Intelligent lighting system offers benefits such as automatic switching of unused lights, reduction in maintenance cost, reduction in CO<sub>2</sub> emissions and light pollution, reduction of cooling load, wireless communication,

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

energy saving and reduction of manpower.

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

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

1. LED technology.
2. Basic principles and architecture of intelligent lighting system.
3. Types, size and rating.
4. Sensing (motion, light intensity, hours of the day, touching) and control strategy.
5. Potential energy savings.
6. Environmental, social and health benefits.
7. Case studies and successful examples of intelligent lighting system.

### **Venue of the Webinar:**

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