

## Concept Paper

### Webinar on "Building to Grid Integration".

#### **Background:**

The concept of Building-to-Grid (BtG) integration entails exchange of energy data information between the buildings and the grid. This exchange enables the buildings to act as distributed energy assets for the grid thereby resulting in a more efficient, green and reliable energy system. Considering the ever-growing demand of electricity in the cities; the evolution of distributed generation; the advent of smart metering, control and sensing technology, the integration of the buildings and the power grid will become inevitable in smart cities of the future. According to US Department of Energy, building to grid integration offers multiple benefits including but not limited to: energy savings for the buildings; efficient utilization of grid resources; more stable grid with better control over frequency; deferral of investments in power sector.

The potential economic benefits of building to grid integration are massive in magnitude. With intermittent electrical power sources such as photovoltaic systems installed in the buildings along with smart meters and sensors, grid operators will be able to use these distributed resources to support the grid when required. These energy transactions between the building and the grid could potentially result in saving billions of dollars. South Asian countries house nearly 1.83 billion people and one of the most densely populated countries on the planet. To realise the sustainable development of SAARC Member States, futuristic concepts like smart cities and building-to-grid integration could play vital roles.

#### **Introduction:**

SEC, under its thematic area of "Programme to Successfully Implement Technology Transfer" (POSIT), proposes a webinar on "Building to Grid Integration". The proposed webinar will be a 2 to 2.5 hours long activity and will consist of presentations from various experts to share their knowledge/experience on BtG integration. Given the nature of this subject, majority of speakers from outside the SAARC region shall be invited.

In this webinar experts will share an introduction to the concept of building-to-grid integration and its underlying vision; current status; possible framework for its realisation; the enabling technology; technical opportunities and resulting benefits; challenges and barriers. The webinar will share suitability, viability and other aspects of this integration with reference to building owners, grid operators and technology developers. The motive is to educate participants from SAARC Member States on the importance of building-to-grid integration.

#### **Objectives:**

The objective of the webinar is to share the information on Building-to-Grid integration to the participants and sensitize the policy / decision makers on the importance and benefits of such integration.

#### **Major Aspects /Topics to be covered during the Webinar:**

The following aspects of Building-to-Grid (BtG) Integration shall be covered in the webinar:

1. Introduction to Building-to-Grid Integration, its history and the vision behind
2. Prerequisites for BtG Integration

3. Discussion on the nature of possible framework for realisation of such integration
4. Importance of BtG integration from the perspective of all stakeholders involved
5. Enabling Communication and Information Technology
6. Opportunities and benefits on offer
7. Expected challenges and barriers
8. Way Forward
9. Knowledge sharing and interactive discussions

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

The proposed webinar is relevant to SEC thematic area of Programme on Successful Implementation of Technology Transfer (POSIT). SEC, in the past, has conducted a number of events under POSIT and this webinar shall add to that list. Through this webinar, SEC shall enhance knowledge of participants on the concept of BtG integration. This will in turn give multiple benefits i.e., create awareness among the participants on the potential benefits of BtG integration, enabling technology and way forward to its realisation. The webinar will also cover the discussion on perspective of the stakeholders, regulatory framework and future expected challenges on BtG integration.

### **Potential Professional Resource:**

International experts/speakers having experience in BtG integration shall 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 Webinar:**

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