

BIPV based sustainable building in South Asian countries

Akash KumarShukla^a; K.Sudhakar^{ab}; PrashantBaredar^a; R.Mamat^b

^a Energy Centre, Maulana Azad National Institute of Technology, Bhopal, India

^b Faculty of Mechanical Engineering, Universiti Malaysia Pahang, 26600 Pahang, Malaysia

ABSTRACT

In building integrated photovoltaic (BIPV) systems, PV elements are integrated along with the building which often serves as the exterior weathering skin. PV researchers from various countries have been working for several years to optimize these systems. Sustainable BIPV system has many benefits such as the building itself becomes the PV support structure, and the BIPV components displace the conventional building materials and labor cost, thereby reducing the net installed cost of the PV system and building construction. It also provides on-site generation of electricity and architectural elegance, which increases the market acceptance of the buildings. The BIPV systems can be interfaced with the available utility grid or used as off-grid systems. This paper identifies sustainable building concept in South Asian countries and role of BIPV applications in sustainable building. This article gives review of BIPV applications in South Asian countries. Finally, Barrier and challenges of BIPV system have been discussed and future direction is highlighted.

KEYWORDS:

PV; BIPV; Sustainable building; Energy; Grid