



PEP-6

Design & Simulation of a New Renewable Energy Plant for the New Egyptian Capital

A. Abdel-Salam, Y. Gamal, A. Abdo, Z. Mokhtar, M. Nady, B. Sobhi, A. Zaher,
*Heliopolis University, Egypt, first.author@email.edu, second.author@email.com,
third.author@gmail.com*

Supervisors: Hady H. Fayek, Assistant Lecturer & Heba Mosalam, Lecturer
Heliopolis University, Egypt, hady.habib@hu.edu.eg & heba.mosalam@hu.edu.eg

The new Egyptian capital is a smart city which means that it should be supplied through a smart grid. In smart grid the penetration level of Renewable plants are higher than conventional one. This paper presents three proposals for the new plant which its installed capacity is 150 MW. The three possibilities of the plant are chosen to be Wind farm or PV farm or CSP station. The Design and simulation are carried out using System Advisory Model (SAM) software version 2016 for each type with full installed capacity. The power factor correction is taken into consideration by selecting the suitable compensators. A full comparison between the three scenarios will be presented including all the points of differences to get the same desired active power.