



An Industrial visit during S2 was planned to the Solar Power Plant at CIAL (Cochin International Airport Limited) on 26th March 2018. Our aim was to understand the working of the Solar Power Plant at CIAL. We were accompanied by our HOD Dr. Saira Joseph and Mr. Jerry Kuriakose (Assistant Professor ECE)

The Engineers of Bosch who were manning the plant explained each and every function of the Solar Plant at CIAL. At present research aims to analyse the operational performance of the Plant 14.4MWP solar powered Airport commissioned by CIAL. The performance of the plant is stimulated using mono-crystalline modules monitored by **SCADA-remote monitoring**.

Bosch Energy and Building Solutions was in-charge of the installation of the Solar plant and it's monitoring. Each Solar Panel consist of 60 Solar cells. The Solar Panels are kept at South facing angle with the coordinates with CIAL ( $10.1518^{\circ}$  N ,  $76.3930^{\circ}$  E). A huge stretch of approximately 50 acres of land is covered by solar panels.

The project includes **PV-modules** of 265WP capacity. The plant system is without any battery storage as it is directly connected to KSEB Grid. CIAL gives as much power as it produces during the day time to the grid and buys back the power from them as need during night time. The temperature at which the Solar Panel works with maximum efficiency is at  $25^{\circ}$ . But since the temperature at CIAL is higher it might result in damaging the solar panels. Due to high temperature a black spot is observed on the panel which is replaced by monthly supervision.

The panels used in this plant is solar radiation absorbing and not temperature utilizing. The power obtained through solar energy is in the form of **dc** which is converted into **ac**. By the use of a step up transformer it is converted from 400V ac to 11Kv ac. This is taken to the KSEB grid and for utilization at CIAL.

A safety feature of the Plant is that if the mains at the grid of the KSEB is turned off no flow of current takes place from the Solar Plant to the grid. This safety feature helps to protect the workers at KSEB during maintenance works.

It was a very useful Industrial visit. The staff at the Plant were very helpful and supportive. It was a very wonderful and informative visit for all of us.

