



**HOPE Foundation's**  
**Finolex Academy of Management & Technology,**  
**Ratnagiri**  
**Department of Electrical Engineering**

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### **An Industrial Visit To A 5 Kw Grid Connected Solar Power Plant**

An Industrial Visit to a 5 KW Grid Connected Solar Power Plant was organized on 11<sup>th</sup> October, 2019 by the Electrical Engineering Department for TE students who elected to study REES subject. The visit was conducted by **Ms. Harshal P Gosavi**, Assistant Professor, to give practical exposure to the students about the solar PV plant.

It was a 5 KW Solar Power Plant situated at Shantinagar, Ratnagiri; established for residential load on the premises of Mr. Dhamapurkar. **Mr. Rishikesh Kondekar** from Saurmandal Solar briefed the students during the industrial visit, who had designed and constructed the plant.

The students made following observation regarding the components of 5 KW Solar Power Plant as follows:

#### **1) Solar panels**



- Dimensions: for one panel = 2m \* 1m
- Rating: 320 Wp
- No of panels: 16
- Total installed capacity:  $(320*16)= 5120$  watts
- Make: Australian Premium Solar
- Connection: Series connected
- Fabrication: GI fabrication
- Facing: towards South
- Angle of inclination: 14 degree from ground

## 2) Inverter



- Make: SOLAX
- Sine Wave Inverter
- Ratings: 5.2 KW ,600 volt
- Supports Six battery
- 24 Month Warranty
- Safe for sensitive appliances with Sine wave out-put
- HKVA Inverters can run heavy loads like AC, Geyser, Petrol Pumps, Photocopiers, Dental Chairs etc., depending on its capacity.
- Auto over-load handling capacity
- Installation and maintenance friendly
- Offers high quality and reliable power back-up solution for office and homes
- MCB for protection from Input mains
- Bypass switch for supplying output directly from grid in case of Home UPS fault.
- Noiseless Operations with the help of low harmonic distortion
- Intuitive Display to easily understand status of mains availability, battery status, etc.
- Comprehensive protection against short-circuit, reverse polarity, battery over-charge, deep-discharge etc

## 4. Net Metering

• Import reading: 3479 KWh • Export reading : 2135 KWh • Net units utilised: 1344 Kwh



### **5. Protection**

- DCDB and ACDB are used for overvoltage protection • Lightning arrester

### **6. Cable**

- Cable material: Tinned Copper • Cable size: 4 sq mm.



A total **25** students actively participated in the visit and shared their feedback regarding the visit and responded that they could learn many practical aspects of Solar PV Plant. **Prof. H. P. Gosavi** conveyed her thankful words to **Mr. Rhishikesh Kondekar** for a successful visit.