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Outcome of Energy Production in India.

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A B S T R A C T

In India number of energy sources is available but there are issues connected with pollution and its control. Therefore Government is also finding the way to produce non pollution way to generate energy. Now a day's Wind and Solar energy are most popular. Solar energy is available in India but problem is concerned with the high temperature of the plate. So cooling is also required for the plate for proper working of panels. where coal- and lignite-based power plants are preferred after slow-down of a renewable energy boom, and (2) with high utilization of renewable energy supported by natural gas and nuclear energy.

Keywords: Power generation, Flue gases, unwanted contents, Heat loss, Heating of panel, Cool the panels by water pipe lines.

1. Introduction.

There are number of ways to generate energy. Solar power is mostly non polluted way to generate energy. Solar panels are heated as continuous sun rays are impacted on the panels. Although there have been efforts to diversify the options, particularly in the case of renewable energies, coal energies, coal remains the dominant source of electricity. Considering an increase in coal production of 5% each year, the coal reserves are expected to last for another 40–50 years [31]. The World Institute of Sustainable Energy prepared a research report for coal electricity in India and predicted that the total coal power plant capacity by the end of 2032 would be 400 TW if coal-based power plants are favored or 220 TW if renewable energy and gas are favoured. In India till we are mostly generating power by coal base thermal power plant.

These type of power plants are generating large amount of Co2 and other poisonous gases. Number of changes have been done in design of Boiler and combustion method. Therefore we are generating power with less pollution.ESP is one of the best component to reduce the amount of polluted gases. It can reduce the unwanted gases by 96 % and clean gas will be sent to atmosphere.

A high voltage is applied to the discharge electrode, generating a corona discharge that produces minus ions. The electrically charged dust is accumulated on the collecting electrode.

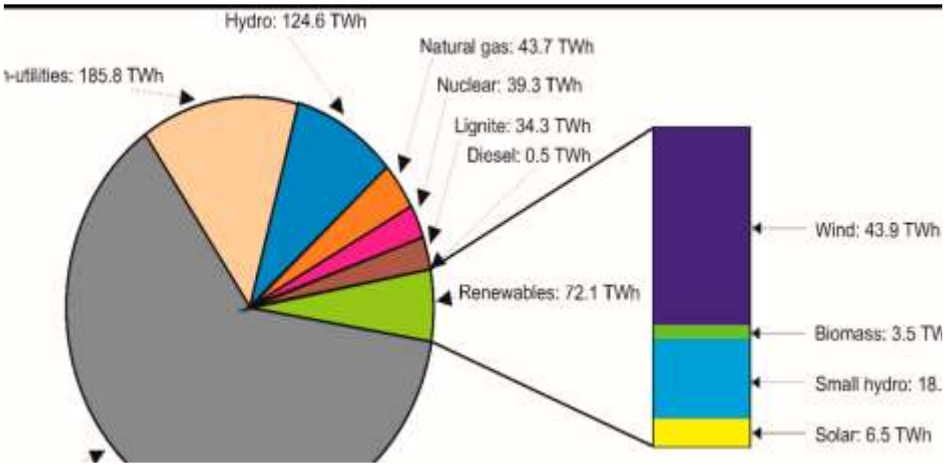

Figure 1 Energy distribution in India

1.1 ESP Performance Improvements to counter High-Resistivity Dust

The most important consideration in ESP for coal-fired boiler applications is to maintain and increase the dust collecting performance of high-resistivity dust. Several improvements to counter high-resistivity dust have been established based on the investigation into the mechanism of back corona phenomenon. Our technologies are shown in the following table. One can offer suitable technologies for plant applications and operations and can realize both compact design and high efficiency.

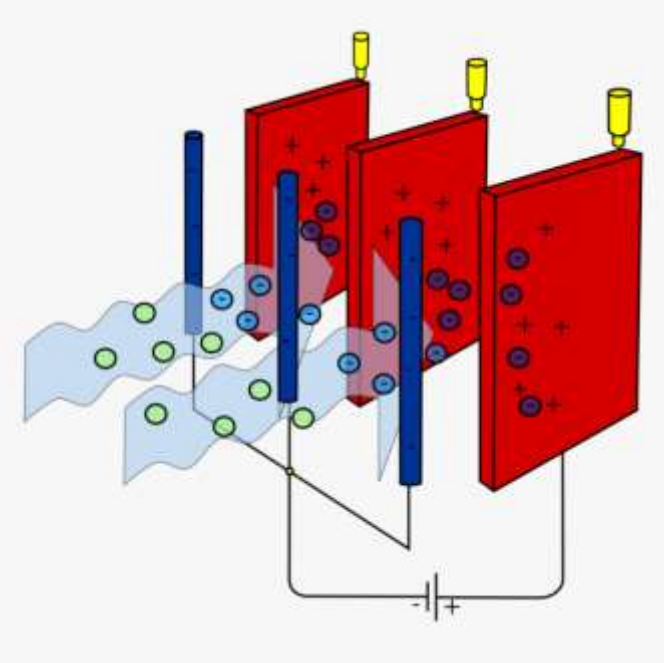

Figure 2. ESP working at High voltage difference

When working with ESP, the following requirements are imposed on the control and recording equipment:

- stable work with IM and PMM motors
- versatility of equipment for working with IM and PMM
- minimum commissioning time of the installation
- maintaining the operation of the installation in emergency situations
- 100% guarantee of working off protection in emergency situations
- minimum dimensions with maximum performance

Nomenclature

SU	Super heater
Wall tem	Temperature of Turbine wall
NW	Normal water
CL Water	Cooling of water
WT time.	Waiting time
Eff TB.	Turbine efficiency
Vol de	Voltage decrement
Con Temp	Temperature of Condenser .
Cool-TB =	Turbine cooling rate

2. Solar panel system

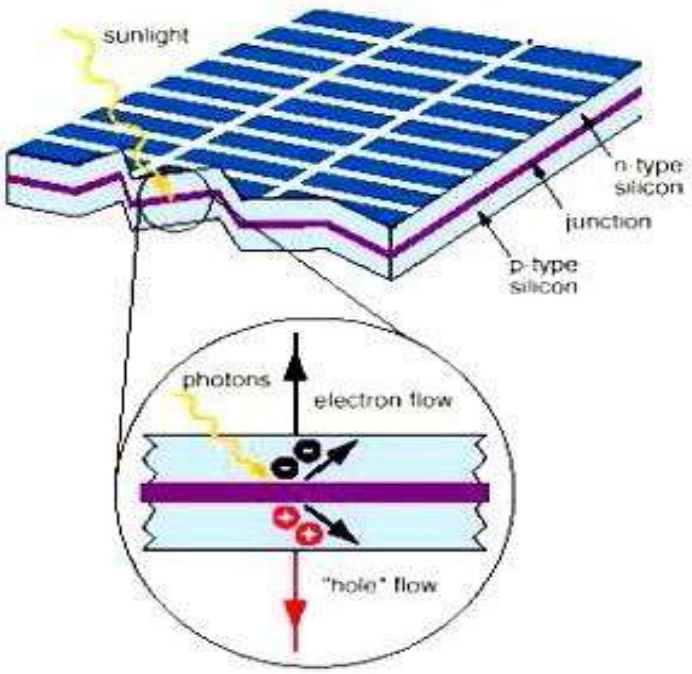

Figure 3 Working of Panel

Number of electrons will flow from one direction to other direction and this flow of electron is known as electricity. Till there are some loop holes and that must be removed for better power generation. PV cells Convert Sunlight to Direct Current (DC) electricity. Charge Controller work as control the power from solar panel which reverse back to solar panel get cause of panel damage. Battery System act as storage of electric power is used when sunlight not available (i.e. night).From this system connected to inverter for convert Direct Current (DC) into Alternating Current (AC).

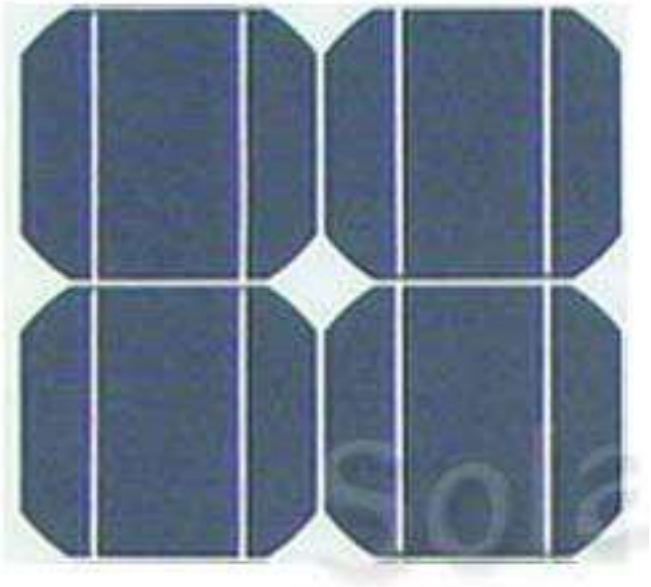

Figure 2 PV cell view.

As in all the ALM labs we use the following terminology when referring to the connections to the M1000 connector and configuring the hardware. The green shaded rectangles indicate connections to the M1000 analog I/O connector. The analog I/O channel pins are referred to as CA and CB. When configured to force voltage / measure current -V is added as in CA-V or when configured to force current / measure voltage -I is added as in CA-I. When a channel is configured in the high impedance mode to only measure voltage -H is added as CA-H. Scope traces are similarly referred to by channel and voltage / current. Such as CA-V , CB-V for the voltage waveforms and CA-I , CB-I for the current waveforms.

A solar cell is a semiconductor PN junction diode as shown in figure 1. The large surface area indicated in light blue is exposed to incident light energy. Solar cells are usually coated with anti-reflective materials so that they absorb the maximum amount of light energy. Normally no external bias is applied to the cell. When a photon of light is absorbed near the PN junction a hole / electron pair is produced. This occurs when the energy of the photon is higher than the energy bandgap of the semiconductor. The built in electric field of the junction cause the pair to separate and head toward the respective + and - terminals. The energy from the light causes a current to flow in an external load when the cell is illuminated.

A typical voltage vs. current characteristic, known as an I/V curve, of a PN diode without illumination is shown in green in figure 2. The applied voltage is in the forward bias direction. The curve shows the turn-on and the buildup of the forward bias current in the diode. Without illumination, no current flows through the diode unless there is external potential applied. With incident sunlight, the I/V curve shifts up showing that there is external current flow from the solar cell to a resistive load as shown with the red curve.

Short circuit current, ISC, flows when the external resistance is zero (V = 0) and is the maximum current delivered by the solar cell at a given illumination level. The short circuit current is a function of the PN junction area collecting the light. Similarly, the open circuit voltage, VOC, is the potential that develops across the terminals of the solar cell when the external load resistance is very large, RLOAD = 8. For silicon based cells a single PN junction produces a voltage near 0.5V. Multiple PN junctions are connected in series in a larger solar panel to produce higher voltages. Photovoltaic cells can be arranged in a series configuration to form small modules, and modules can then be connected in parallel-series configurations to form larger arrays. When connecting cells or modules in series to produce higher output voltages, they must have the same current rating (if not the cell with the lowest current specification will limit the ultimate current of the module), and similarly, modules must have the same voltage specification when connected in parallel to generate larger currents.

3. Application of Solar energy

» Food processing companies

» Pharmaceutical

Restaurants

» Dairy industry and its derivatives

» Hotels I Motel

» Textile

» Brewing alcoholic beverages

» Sports Clubs I Gyms

» Brewery

» Slaughterhouses

» Hospitals

Conclusion

Energy generation is very important factor for India. Now Nuclear power is very focused area for less maintained area. Less amount of Uranium is capable to generate large amount of energy. Also Solar panels are important for renewable energy sources. Panels cleaning are important factor for more power generation. In Nuclear sector Fusion and fission process must be under control for better power generation . renewable energy sources are important factor as non polluted way to generate energy. In this direction Geo thermal , tidal and solar and wind power play vital role to generate energy. Coal base thermal power needs some improvement to reduce the pollution and also coal mines must be under control.

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