

# Solar Sunflower: Mimicking nature for solving energy crisis

Theme : Energy

Name of the school: DPS Megacity, Kolkata

Team code: KOL 1125

Team Name: Solar Energy Group

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Problem statement : Energy crisis and climate change are impacting the world like never before. We see undeniable climatic events that are causing global increase in temperature. With depleting fossil fuel reserves, the cost is shooting up beyond imagination. The whole fraternity of scientists, engineers and policy makers are involved in finding ways that can make our life better. Solar Energy is perhaps of the most reliable solutions the only problem being its low efficiency. Apart from internal properties one of the problem is Net Solar Incidence which keeps on changing as the sun moves as the receiving face of solar panel is fixed and static. So only for a small portion of the day the solar energy to electricity conversion is maximum i.e. there is direct sunlight falling on solar panels. Due to efficiency issues the energy production per unit solar energy incident in that area is low.

Proposed solution : We designed a system in which the solar panel will follow the movement of the sun thus allowing direct sunlight to fall on the solar panel throughout the day. Our basic plan is to attach photosensitive diodes and DC motors to the solar panel. Biasing the photosensitive diode with a cutoff such that if the net solar incidence falls below that limit, it activates the DC motor which rotates the solar panel to again achieve the maximum solar energy incidence. We will be conducting surveys in our community taking feedback about solar electricity replacing the conventional coal electricity. We plan to develop a working model of the proposed idea with low cost and indigenous method. We will also be conducting a sustainability and impact analysis.

Impact of the project : Such a technology once adapted in a large scale will reduce our dependency on coal for generating electricity. This will provide clean energy without affecting environment in anyway. We can also use such systems to charge electric vehicles in hybrid electric car stations. In the course of the project, we aim to explore all of these aspects and prove the impact of this proposal.