

# Production of Solar Energy using 3D Lens

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**Abstract:-**

- Now-a-days we are facing many problems due to shortage of electricity and this problem is very high in rural areas, when compared with cities.
- In spite of having many resources, we are not utilizing them properly. Among natural resources available solar energy is the best and cheapest resources.
- We are making use of solar energy by using solar panels but the energy that is generated through solar panel is very low.so we came up with an solution by introducing 3D lens which can divert the photons coming from solar rays directly on to the solar cells without deviation. So that most of the photons are utilized for generating solar energy.

## I. INTRODUCTION

- As the world population is increasing randomly, consumption of electrical energy is more.
- Generation of electrical energy is increasing which results in the depletion of non-renewable sources of energy like coal, natural gas etc.so, we are going for renewable sources like solar energy, wind energy, etc.,

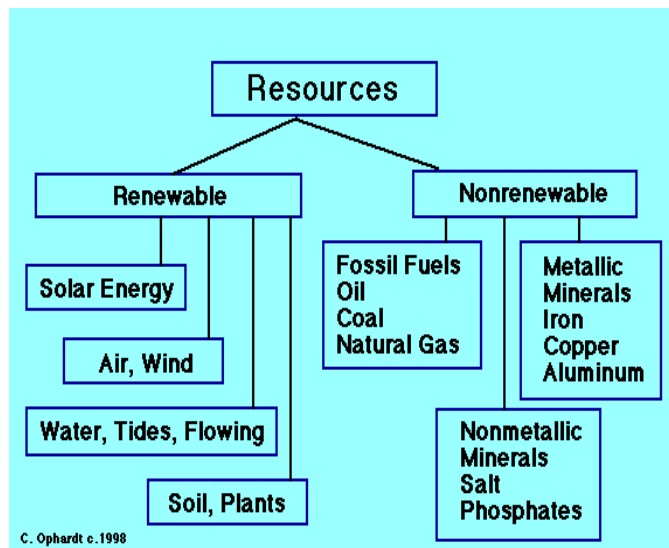


Fig 1:- Chart showing resources.

## II. PROBLEM STATEMENT

- The average power consumption is increasing day by day.

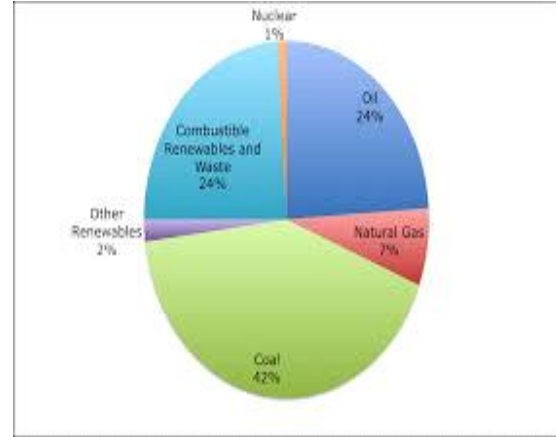


Fig 2:- Consumption of electricity

- Bar graph representing consumption of electrical energy all over India for the following years.

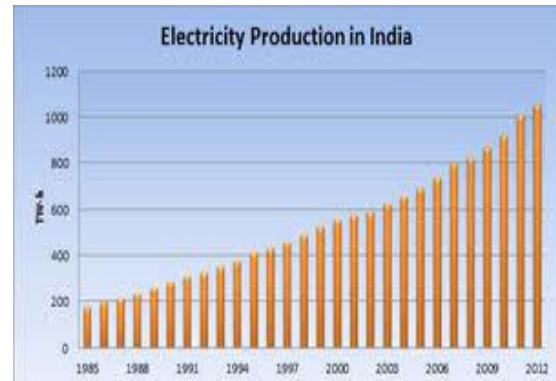


Fig 3:- Graph of electricity production in India

- There is a chance of increasing in demand for electricity for the coming years than it is being produced today.
- Increase in the chance of risk of climate change.
- Reduction in supply due to continuous consumption of energy.
- Since the demand is increasing continuously cost is also increasing.

## III. EXISTING SOLUTIONS

- Since the non-renewable sources are getting extinct, we are using renewable sourcefor generating electricity which is mainly through solar panel.
- These solar panels draws less energy than it rated, so more solar panels are required for generating more energy.

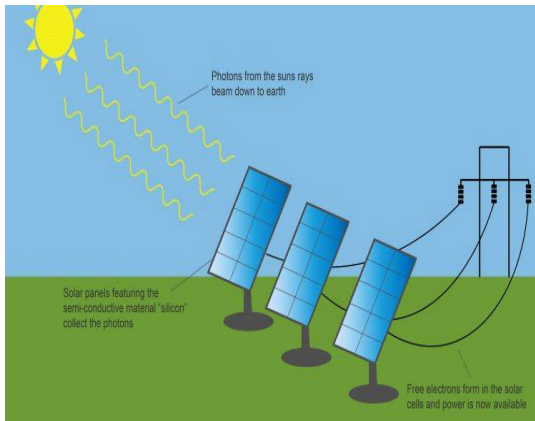


Fig 4:- Solar plant

#### IV. PROPOSED SOLUTION

- Since the power drawn is less in normal solar panels we are using 3D lens which is designed in order to allow maximum amount of photons to fall on the solar cells of the solar panel in 360\* degrees.
- These 3D lens will direct more solar photons to the solar panel.so,the amount of induced energy increases than with the normal solar panel.
- Solar energy passing through 3D lens.

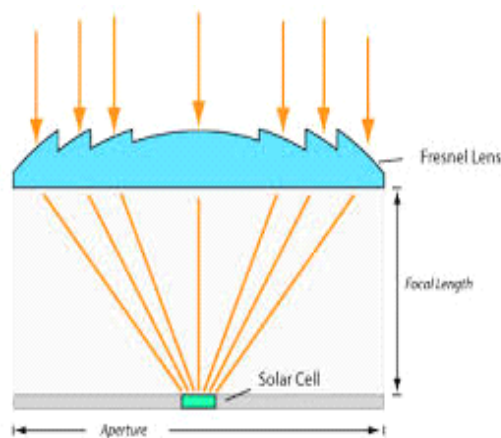


Fig 5:- Project setup with 3D lens

#### V. CONCLUSION

- Non-renewable energy sources can be saved, since the renewable sources are being used.
- We can generate large amount of solar energy compared to before.
- Usage of solar panels increases in the market.
- Electricity consumptions amount decreases in large amount per annum.
- By using solar energy we can avoid have power cable lines and save money.

- We can also sell our solar energy to government in excess production.

#### REFERENCES

- [1]. <https://www.offgridweb.com/survival/starting-fires-with-a-fresnel-lens/>.
- [2]. <http://www.engpaper.com/solar-power-management.htm>
- [3]. [www.engpaper.com/solar-cell-2015.htm](http://www.engpaper.com/solar-cell-2015.htm)
- [4]. <https://www.ieee-pes.org/.../applications-of-solar-energy-to-power-systems-cfp-final.p...>
- [5]. <https://www.renewableenergyworld.com/articles/2012/04/spain-imposes-temporary-halt-to-new-renewable-energy-co-generation-projects.html>.