

# Solar Power:

## Energy from the sun

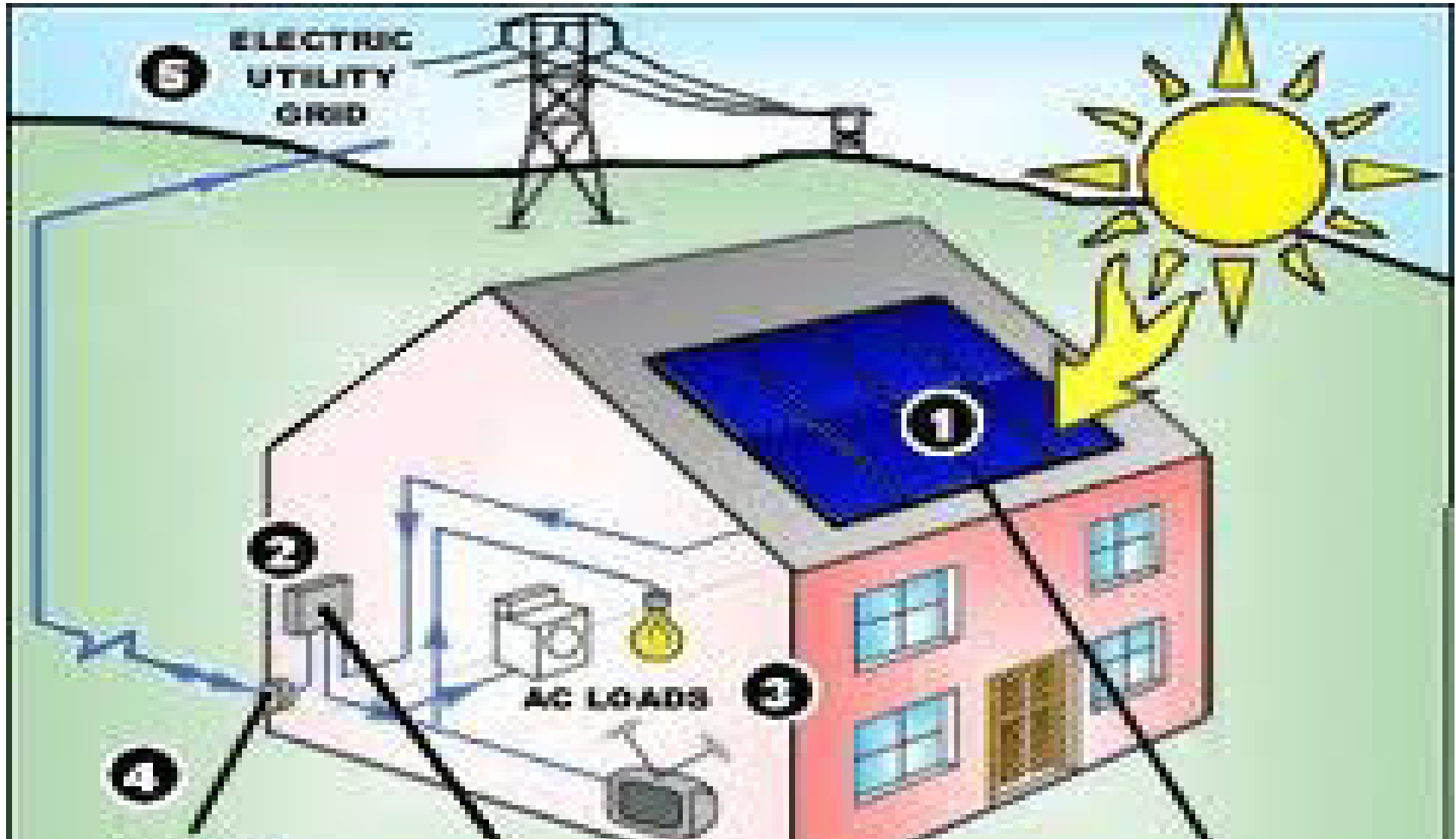


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**The Sun** is **150 million kilometres** away, **and amazingly powerful.**

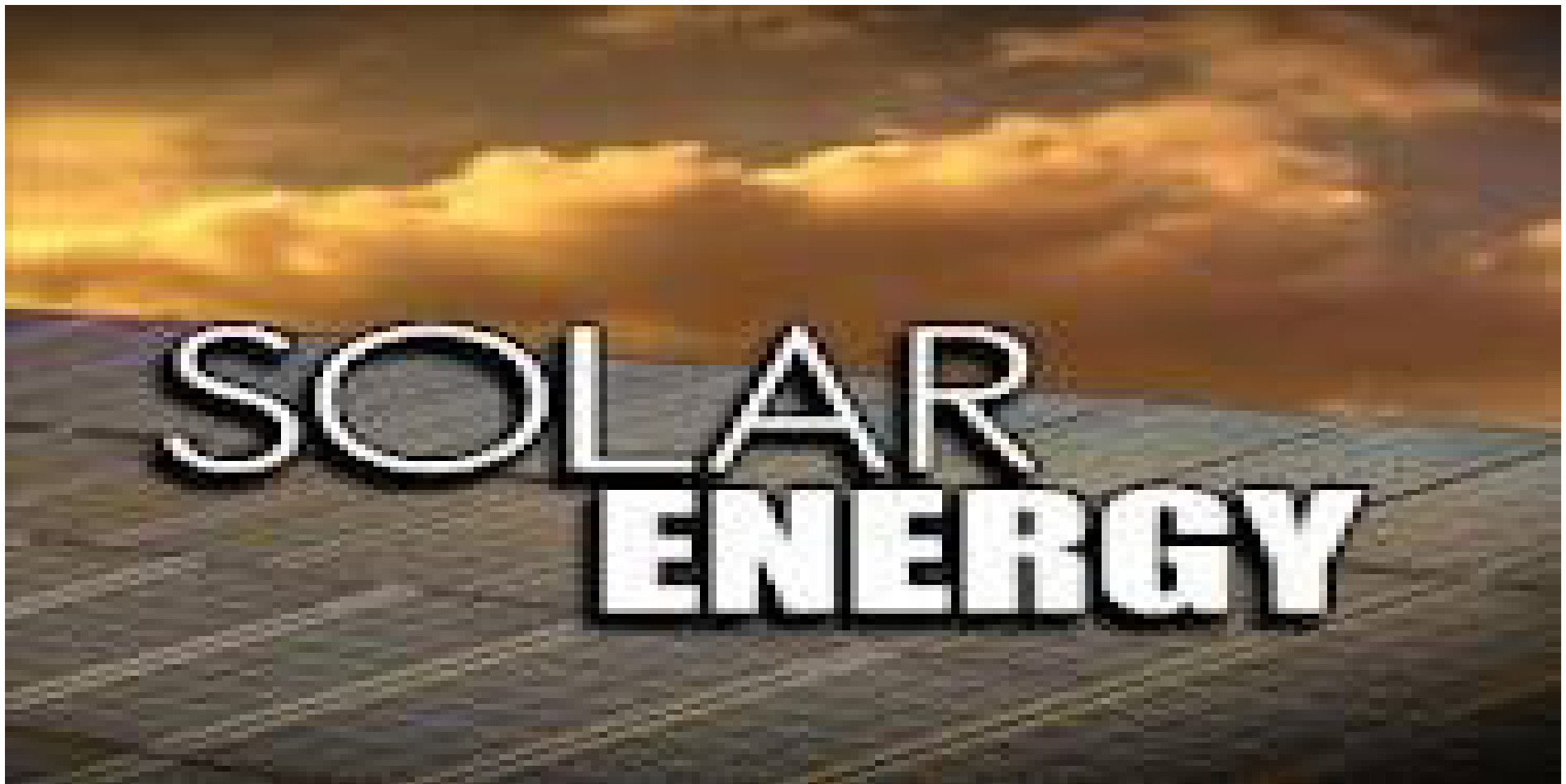


**In fact, every minute, enough energy arrives at the Earth to meet our demands for a whole year**



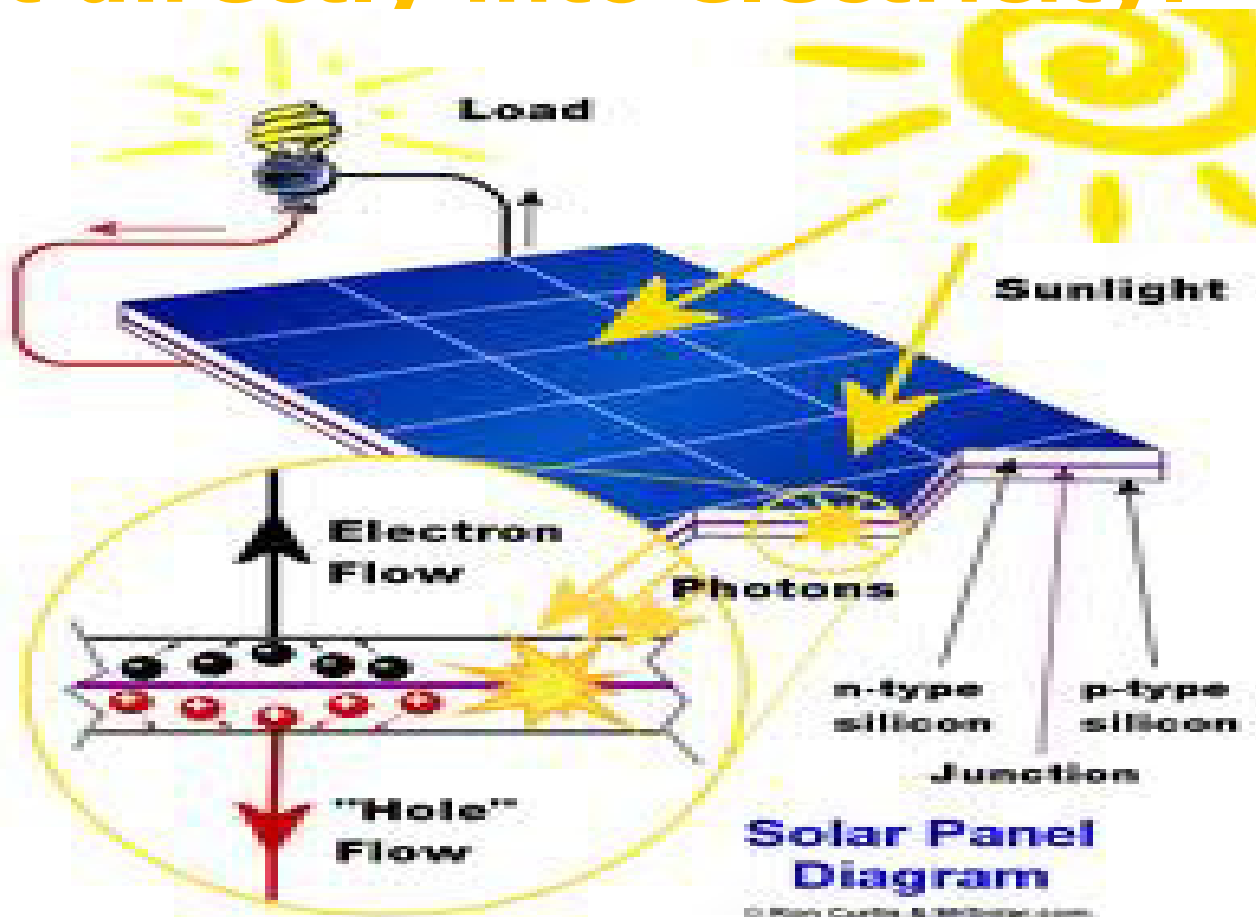
## **How it works:**

**There are three main ways that we use the Sun's energy:-**



# 1 Solar Cells

(really called "photovoltaic", "PV" or "photoelectric" cells) **that convert light directly into electricity.**



**People are increasingly installing PV panels on their roofs.**



**Solar cells provide the energy to run satellites that orbit the Earth. These give us satellite TV, telephones, navigation, weather forecasting, the internet and all manner of other facilities.**





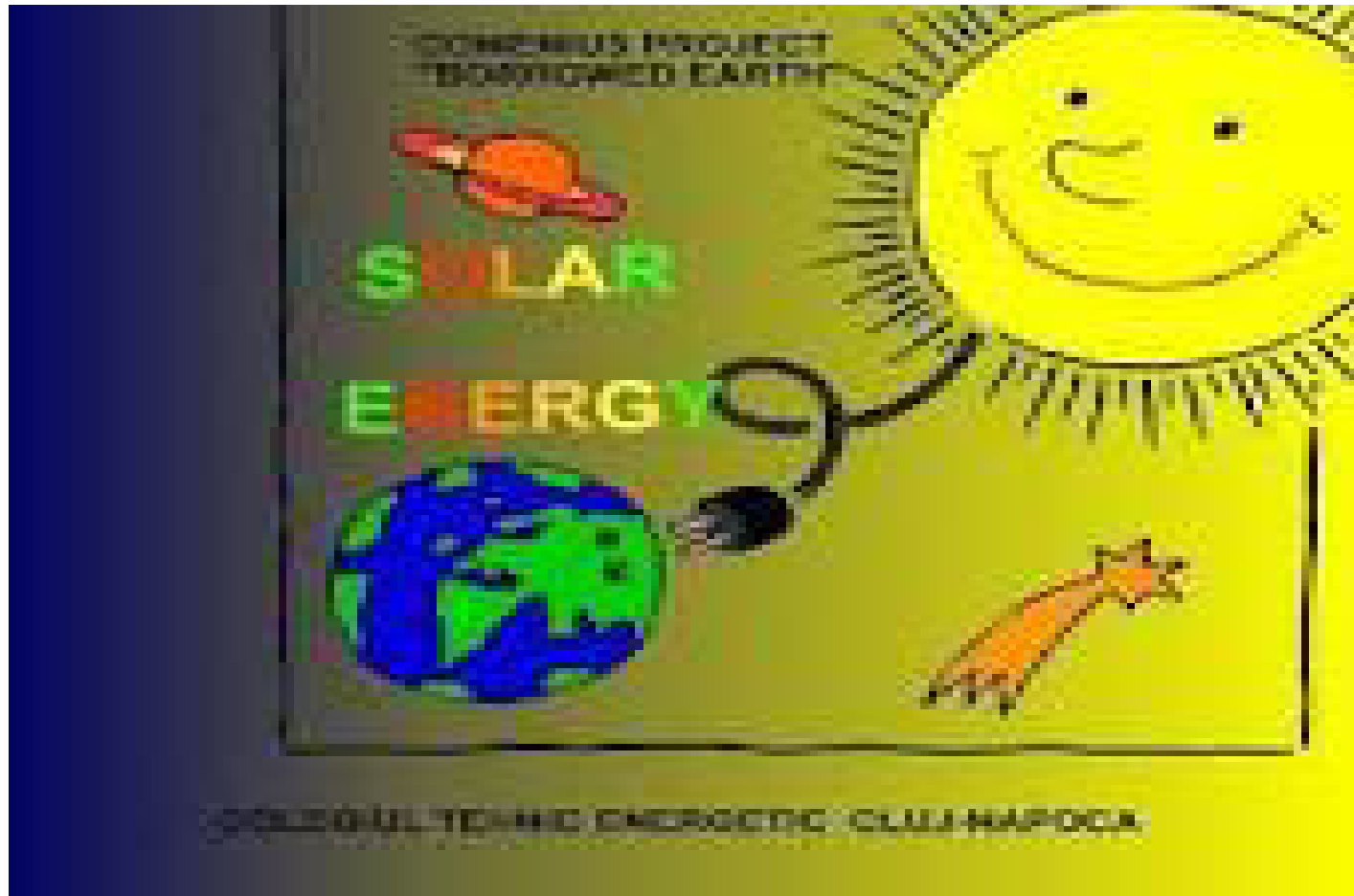
## Advantages

- **Solar energy is free - it needs no fuel and produces no waste or pollution.**  
**In sunny countries, solar power can be used where there is no easy way to get electricity to a remote place.**  
**Handy for low-power uses such as solar powered garden lights and battery chargers, or for helping your home energy bills.**



Solar power **is** renewable.

**The Sun will keep on shining anyway, so it makes sense to use it.**



- **Disadvantages**

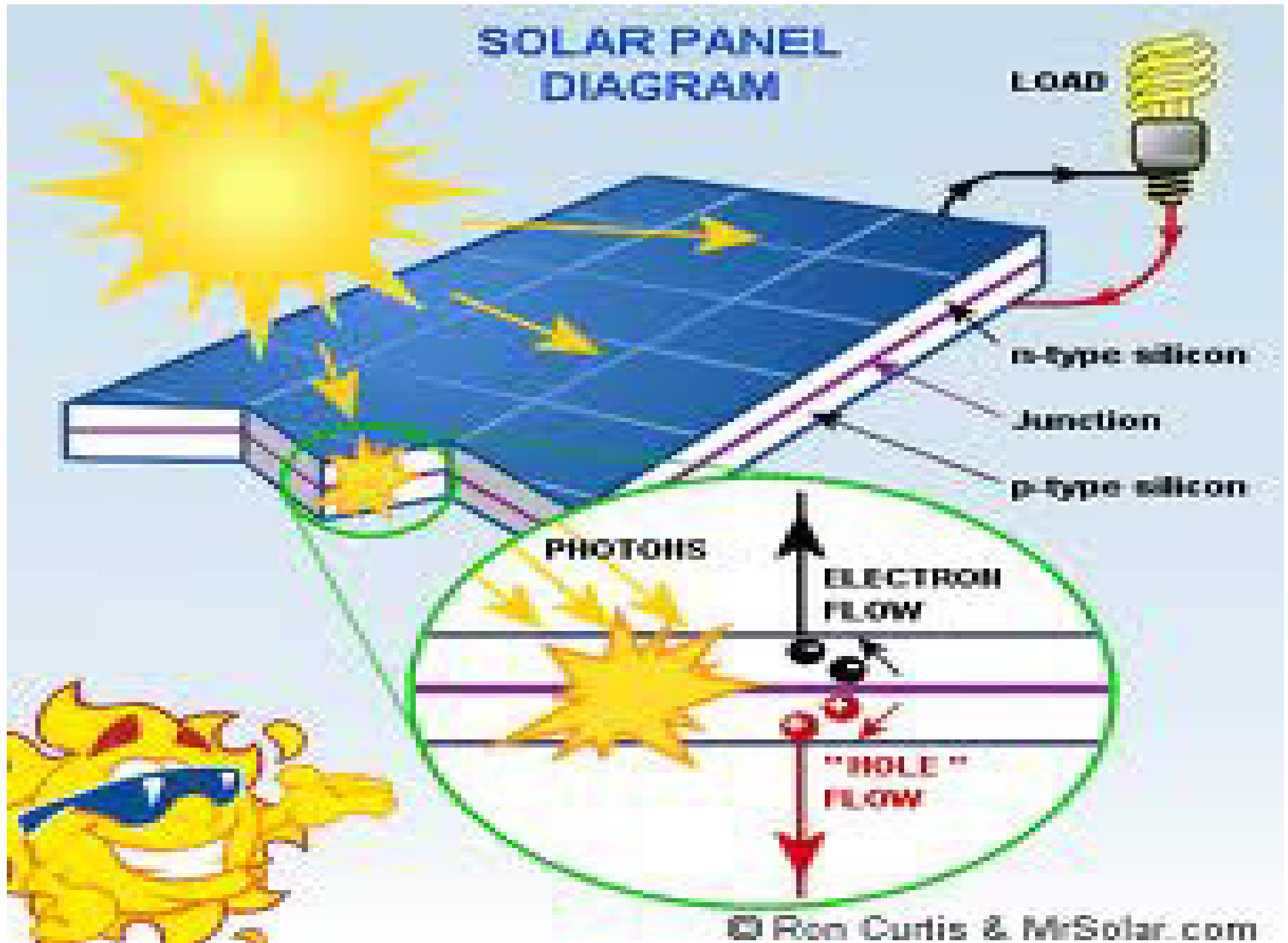
- Doesn't work at night.

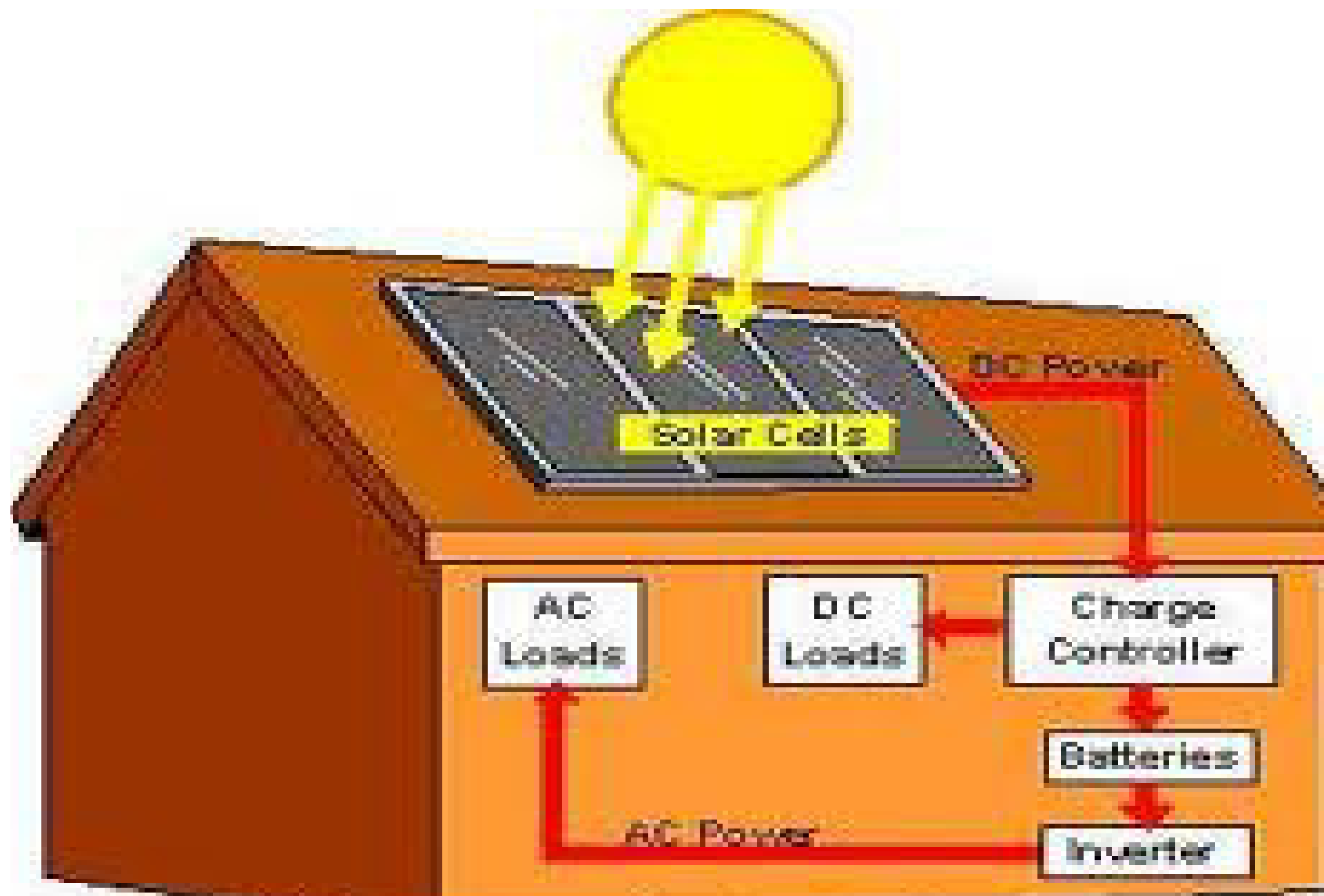
Very expensive to build solar power stations,

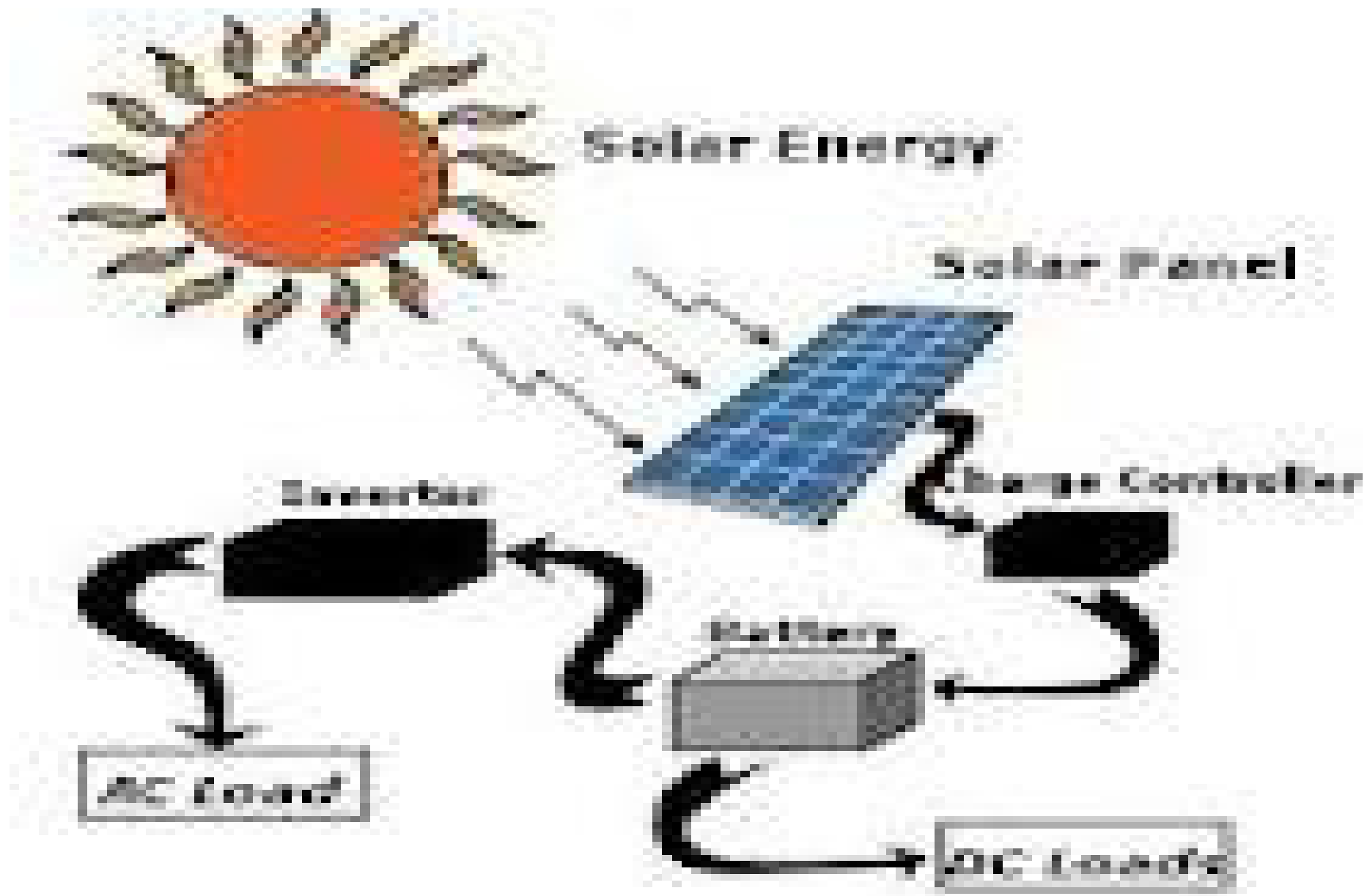
- **Can be unreliable unless you're in a very sunny climate.**



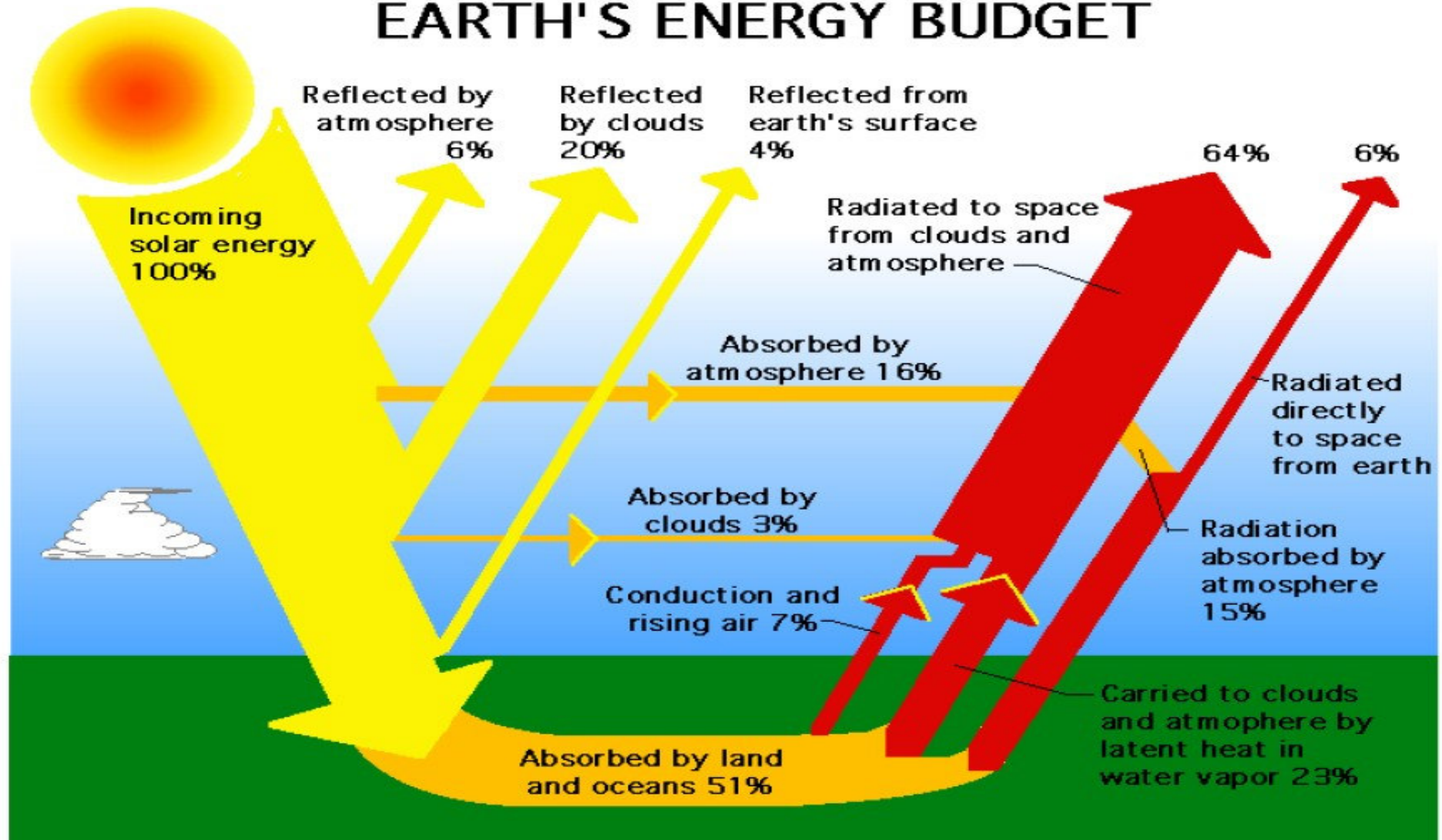
# SOLAR PANEL DIAGRAM







# EARTH'S ENERGY BUDGET

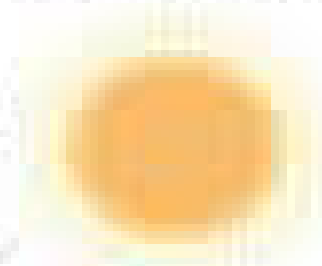




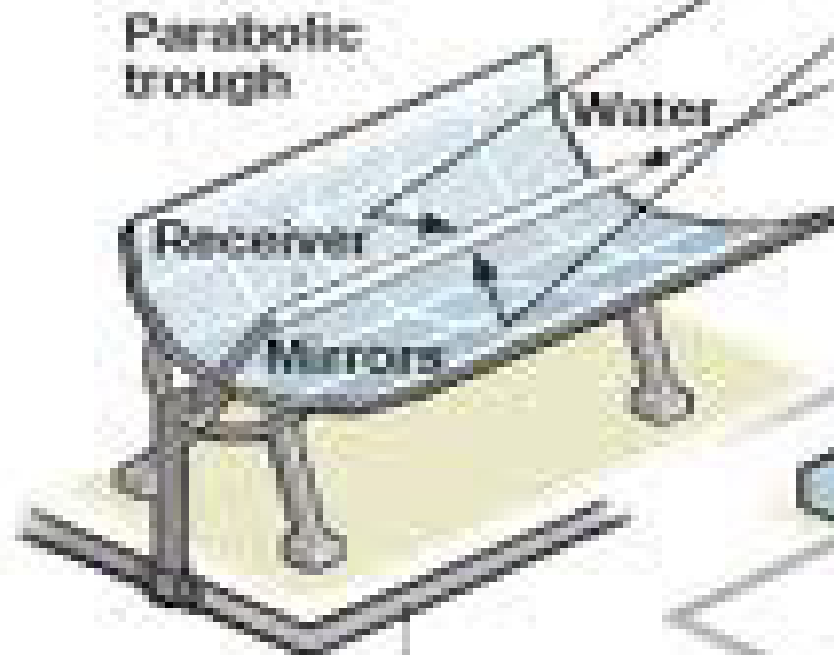
# Making electricity from the sun's heat

## Concentrated solar power

A field of tracking mirrors focuses sunlight onto a glass receiver containing water that can be heated to over 750° F.



The sun's reflected radiation intensifies 30 to 100 times on receiver.



Heated water circulates through miles of pipes.

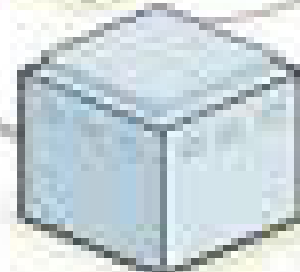
Water passes to heat exchangers for additional heating using natural gas to make high-pressure steam.



Steam is fed to turbines which generate electricity.



Electricity is transferred from storage substation.





# Enjoy your SUN!!!!!!!!!!



