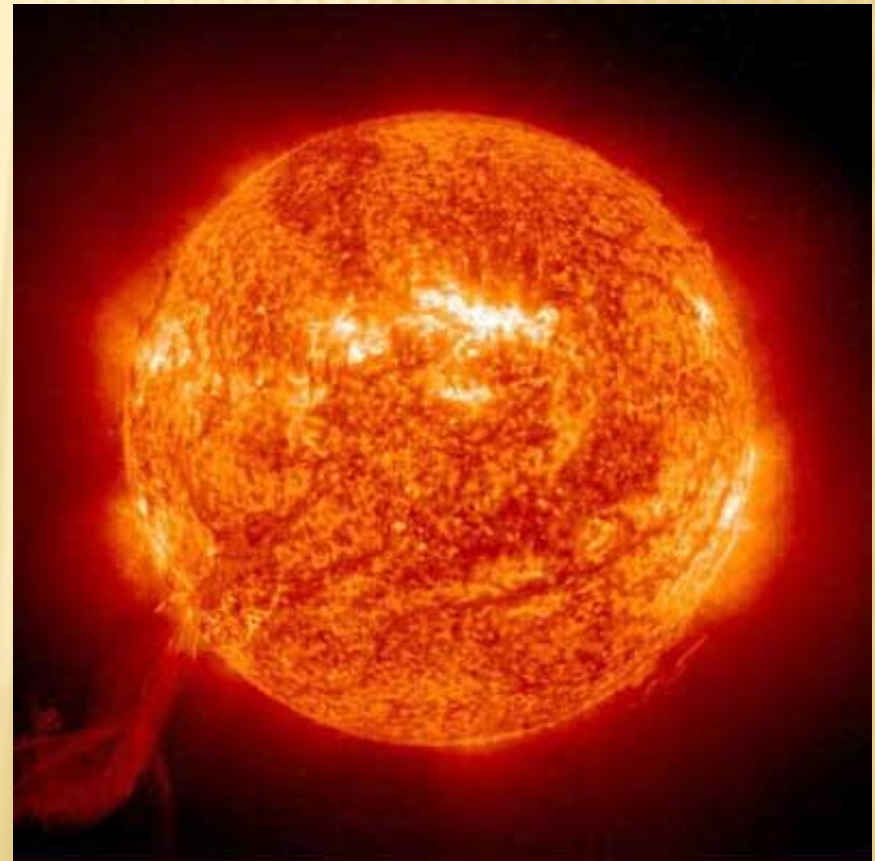


# SOLAR ENERGY

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**The sun is the source of life, giving the opportunity to be born and grow to every living organism on Earth for several billion years. .**



# The history of solar energy development

**Alexander  
Edmond  
Becquerel**

discovered the  
photovoltaic  
effect in 1839.



1883 **Charles Fritts**  
covered a silicon  
semiconductor with a  
thin layer of gold and  
received a solar  
battery - the efficiency  
was no more than  
1%.



# Benefits of using solar energy

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An endless source of energy, availability.



In theory, completely safe for the environment

# Problems of using solar energy



The flow of solar energy on the Earth's surface is highly dependent on latitude and climate

The problem of finding large areas of land for solar power plants





# Technical problems

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- high cost of solar photovoltaic cells;
- insufficient work efficiency at night and in the evening hours, as well as when the weather changes
- the surface of the photo panels, with an area of several square kilometers, must be cleaned of dust and other contaminants;



Silicon photocells



Thin film photocells





photocells



Hot air power plants



solar sail



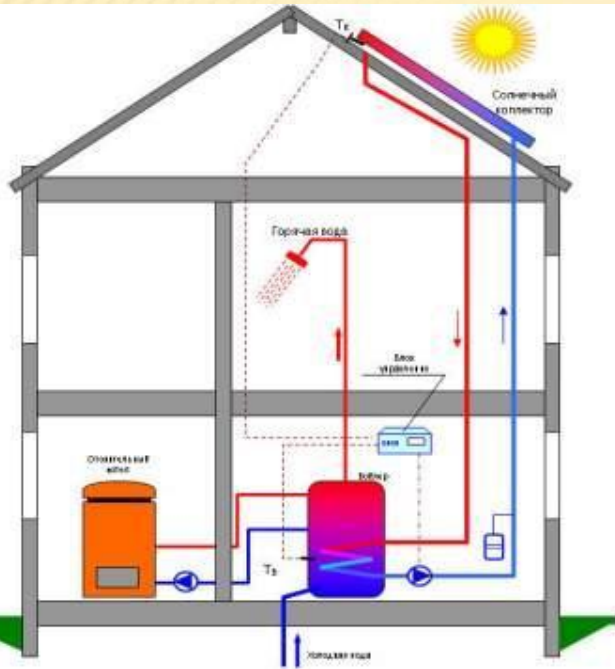


silicon (the main resource for the production of most types of solar cells) is the second most common element on our planet.

It is difficult to obtain pure "solar" silicon, its cost is equal to the cost of uranium for a nuclear power plant



# "Solar" technologies



## Solar heating units



a method of focusing the sun's rays to generate electricity



sunlight - an alternative to lamps



photovoltaic electric motor scooter





solar energy is used to heat  
water in tanks



oven for cooking by the power of  
sunlight



Solar concentrators



Natural lighting systems