

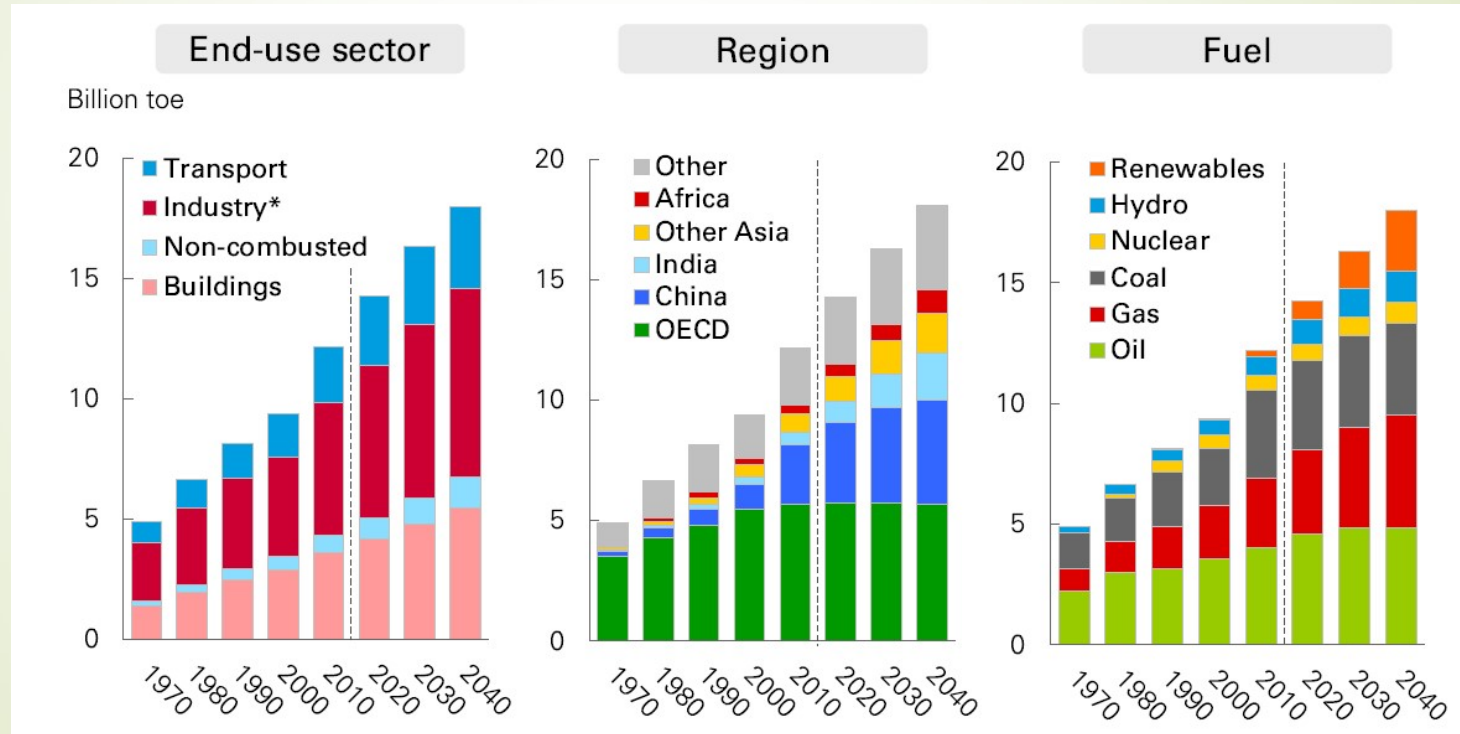
A Review on solar energy technologies

Fall 2018-2019

Presented by Hooman Azad



Energy demand and renewable energies



Energy demand and renewable energies

- World demand for fossil fuels will exceed the annual production during almost next two decades
- At the current rate of consumption, proven oil and gas reserves could be sufficient for world energy demand only for less than 70 years

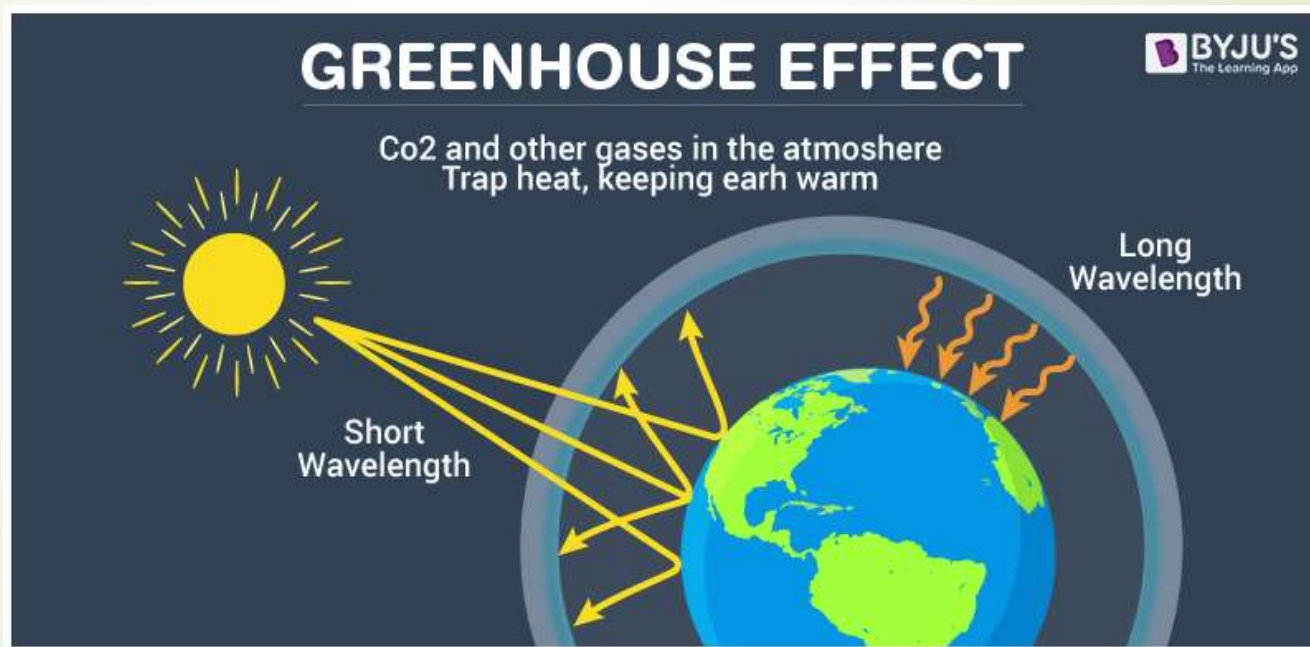


Energy demand and renewable energies

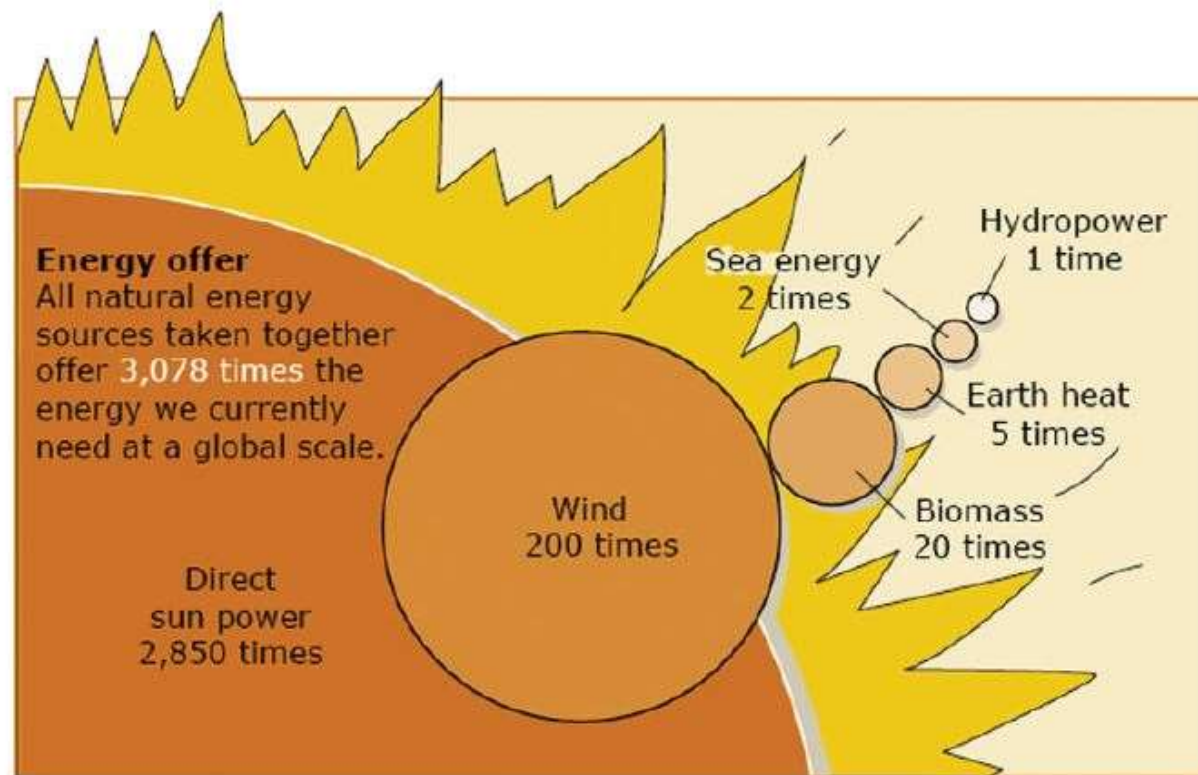
- Environmental issues and climate change have become one of the most urgent worldwide problems



Energy demand and renewable energies



Energy demand and renewable energies



Energy demand and renewable energies

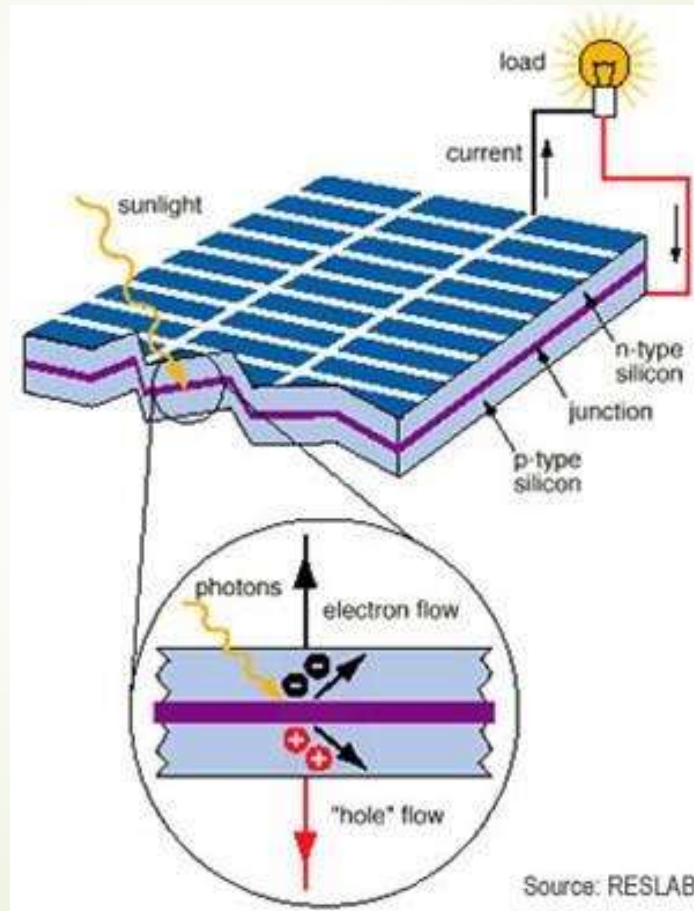
- Solar thermal energy is the most abundant source of renewable energy among of all alternative ones
- About 0.01% of the total annual solar radiation reaching the earth's surface is sufficient to meet the world's total annual primary energy consumption of 450EJ



Photovoltaic



Photovoltaic



Photovoltaic



Solar Thermal Processes





Solar Thermal Processes

1-Domestic hot water



Solar Thermal Processes

2-Space heating



Solar Thermal Processes

3-Space cooling and refrigeration



Solar Thermal Processes

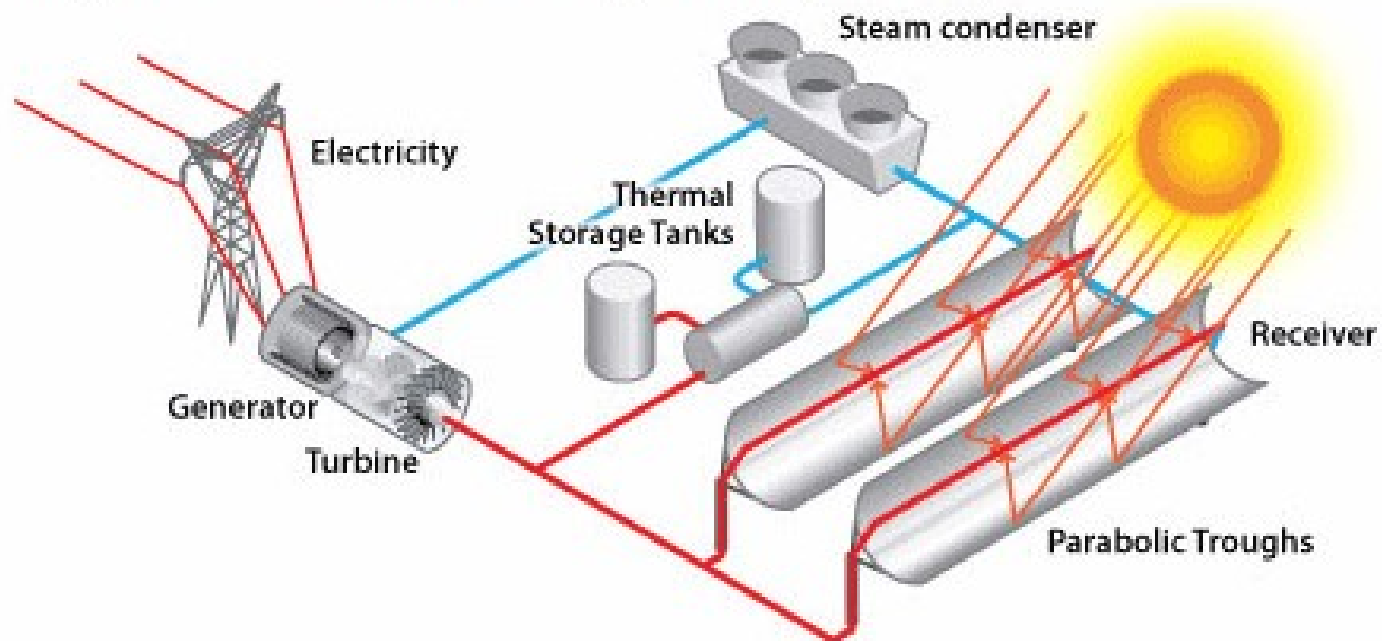
4-Industrial process heat

- Sterilising
- Pasteurising
- Drying
- Distillation



Solar Thermal Processes

Diagram 2. Parabolic trough solar power plant



Solar Collectors



Solar Collectors



Thank you for listening

