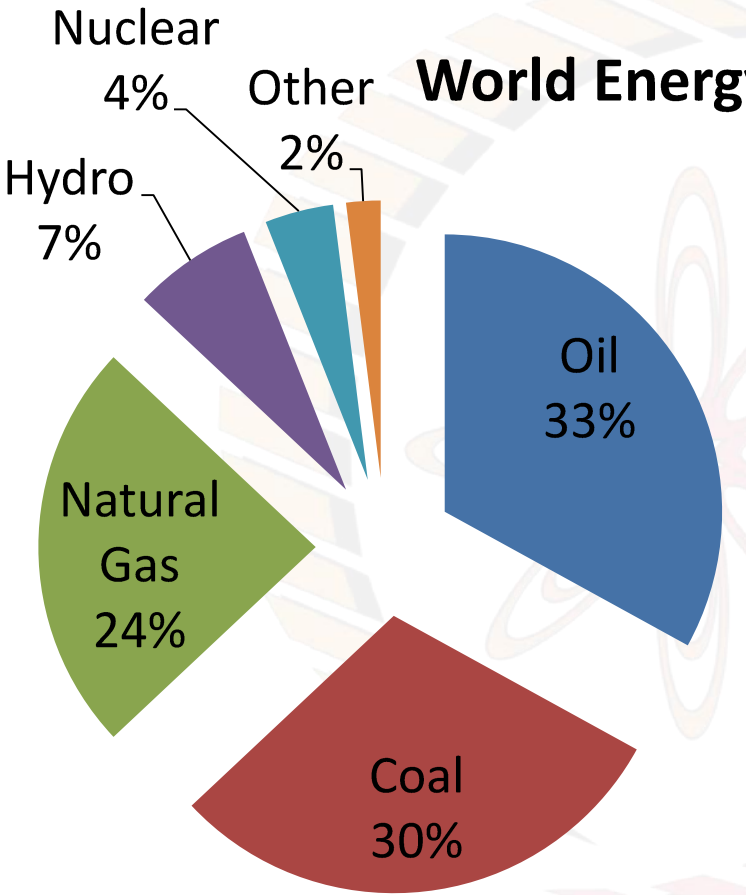
Non-Conventional Sources of Energy: An overview

Learning objectives:

1) To become familiar with the various non-conventional sources of energy
2) To understand the relative advantages and disadvantages of these non-conventional sources of energy

GDP and Energy Consumption seem to be closely linked!

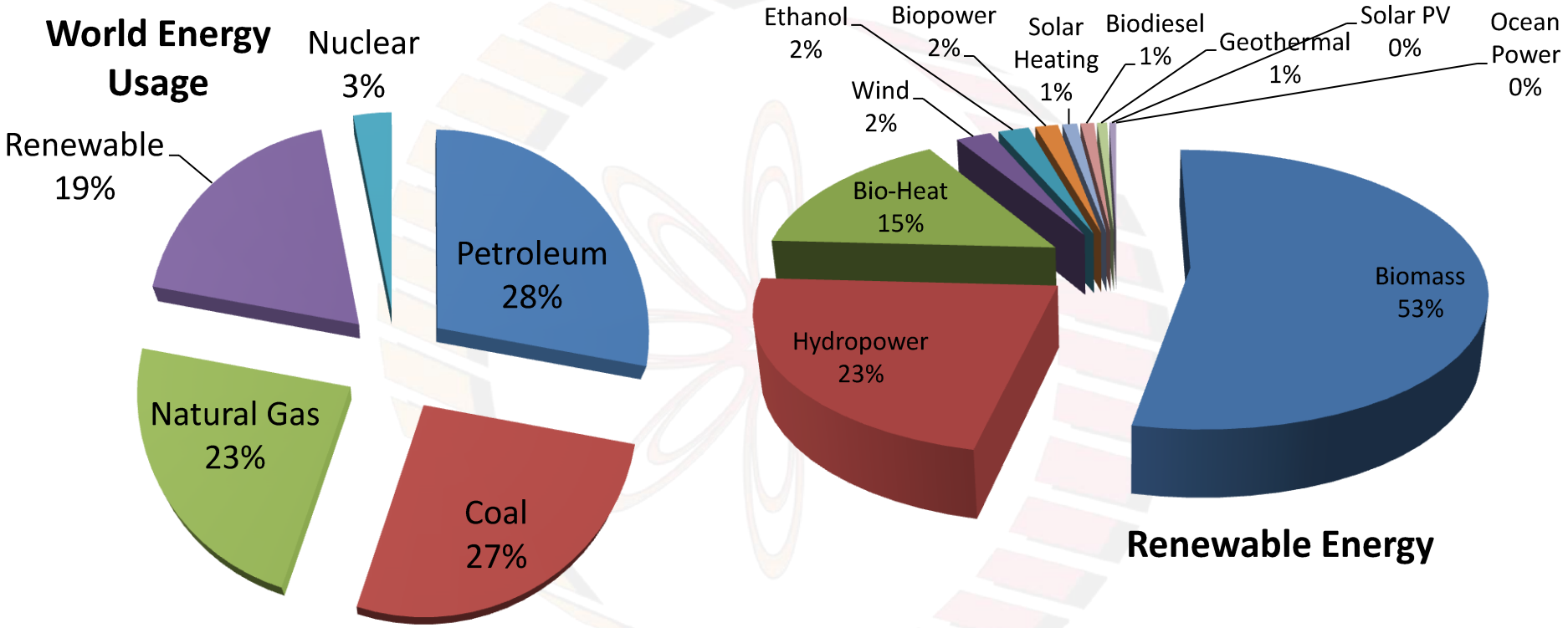
Important to find cleaner sources of energy to save ourselves!



World Energy Usage

Humanity depends on fossil fuels for 87% of our energy needs.

Source of data: https://en.wikipedia.org/wiki/World_energy_consumption

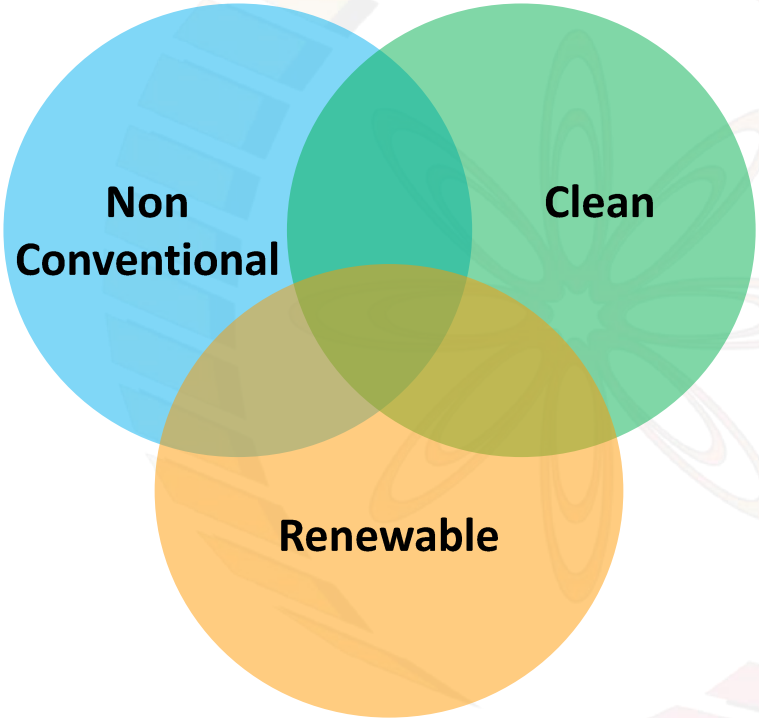


Source: https://en.wikipedia.org/wiki/Renewable_energy

Non-Conventional Energy
Renewable Energy

Vs

Clean Energy


Non
Conventional
Clean
Renewable

Biomass

Burning of wood or other organic matter

Hydro Power

Cities and States

Large Hydro: 100 MW to 10 GW

Small Hydro: up to ~ 30 MW

Isolated Homes and Small Communities

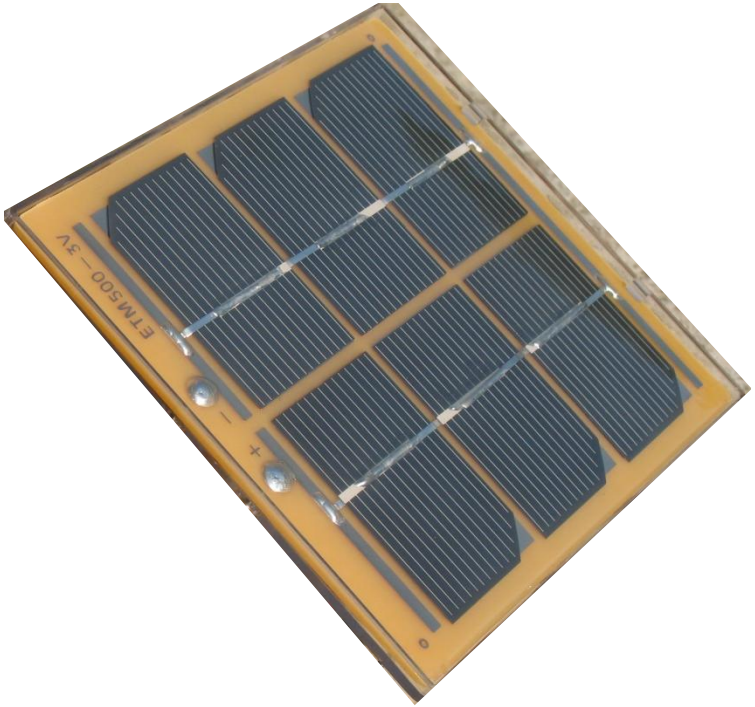
Micro Hydro: 5 kW to 100 kW

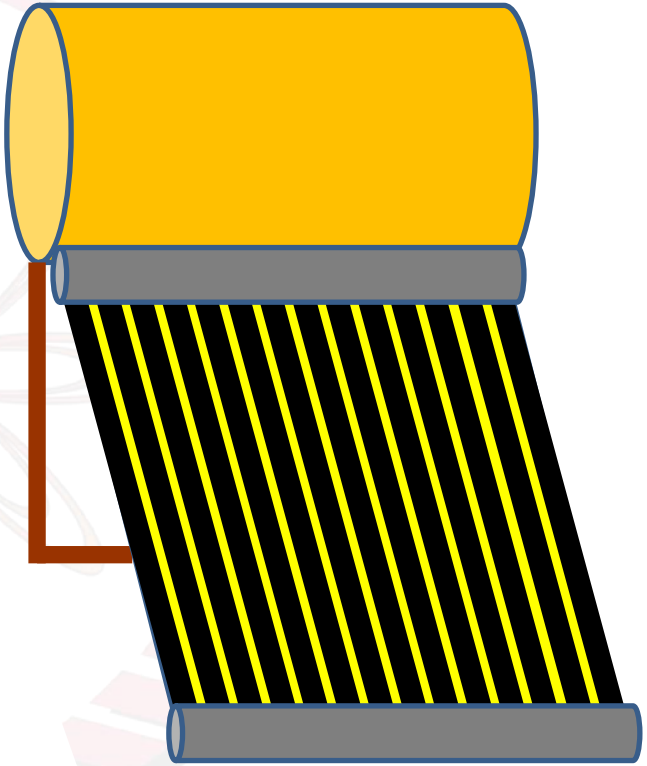
Pico Hydro: Below 5 kW

Wind Energy

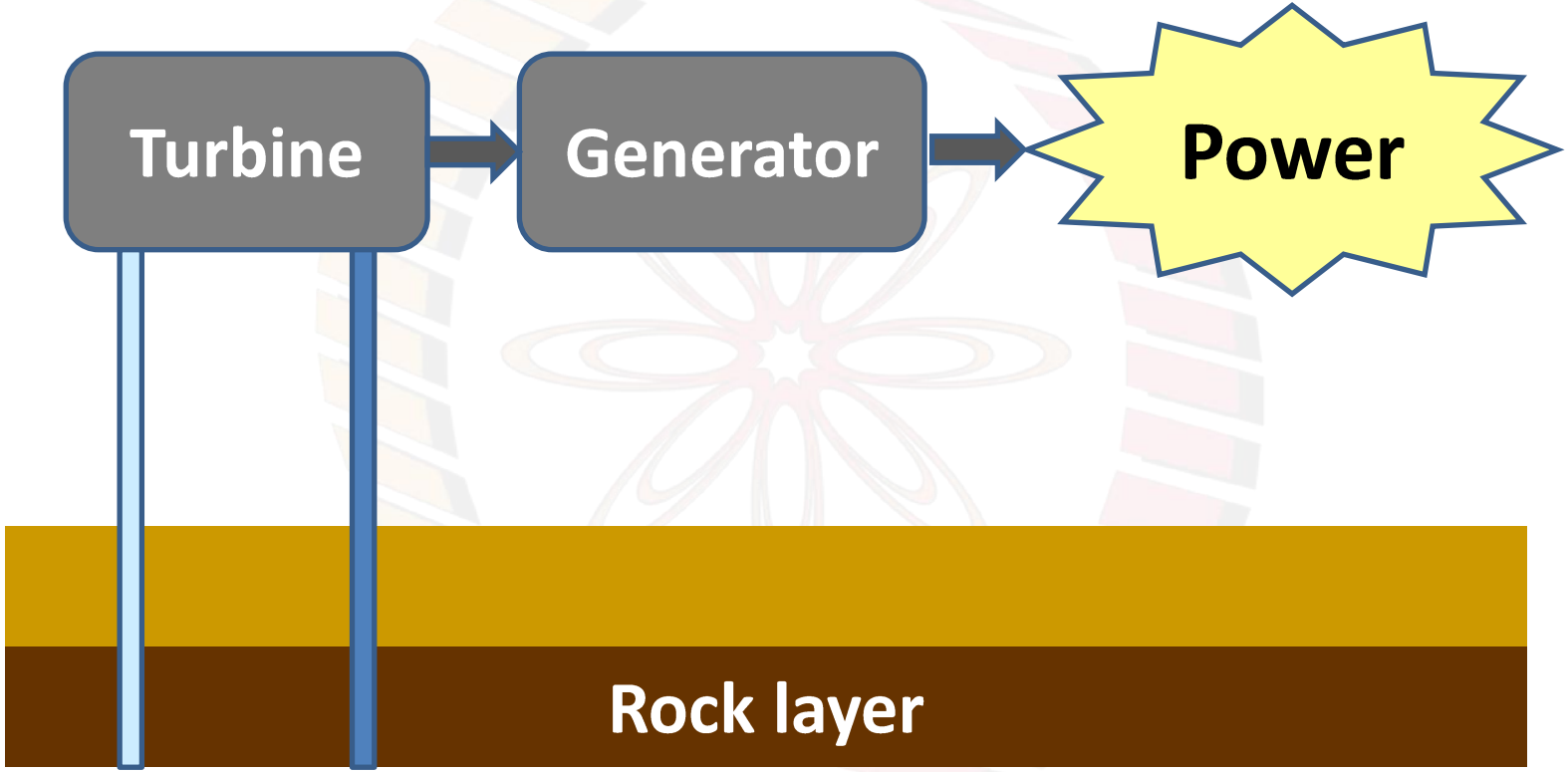
Gansu Wind farm China
Largest off shore: London Array
Jaisalmer Rajasthan

Solar Energy

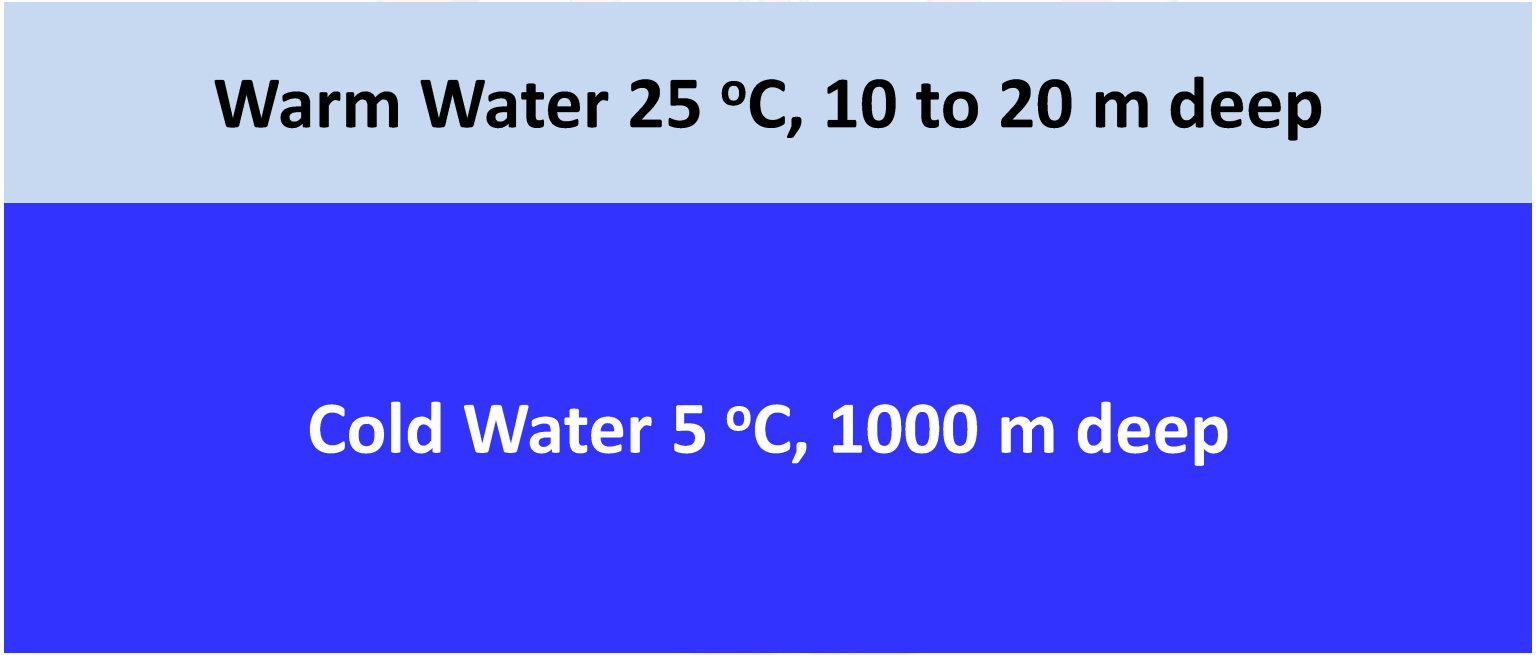




Geothermal Energy



OTEC (Ocean Thermal Energy Conversion)

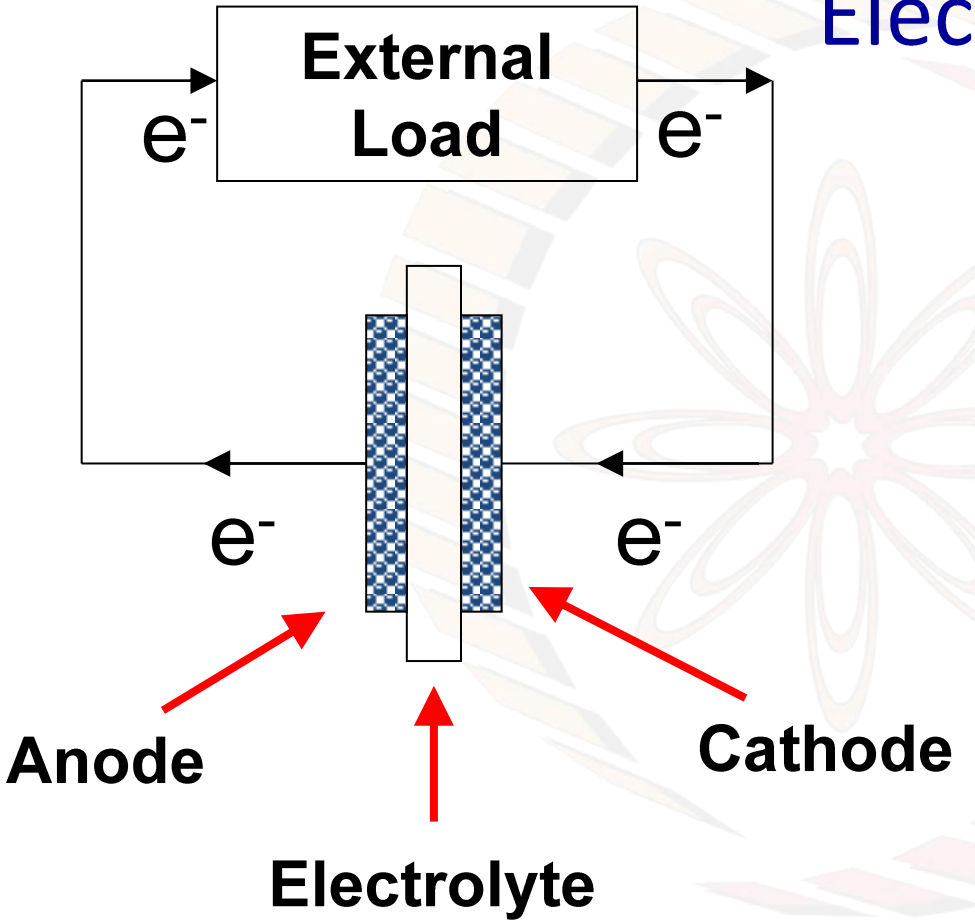


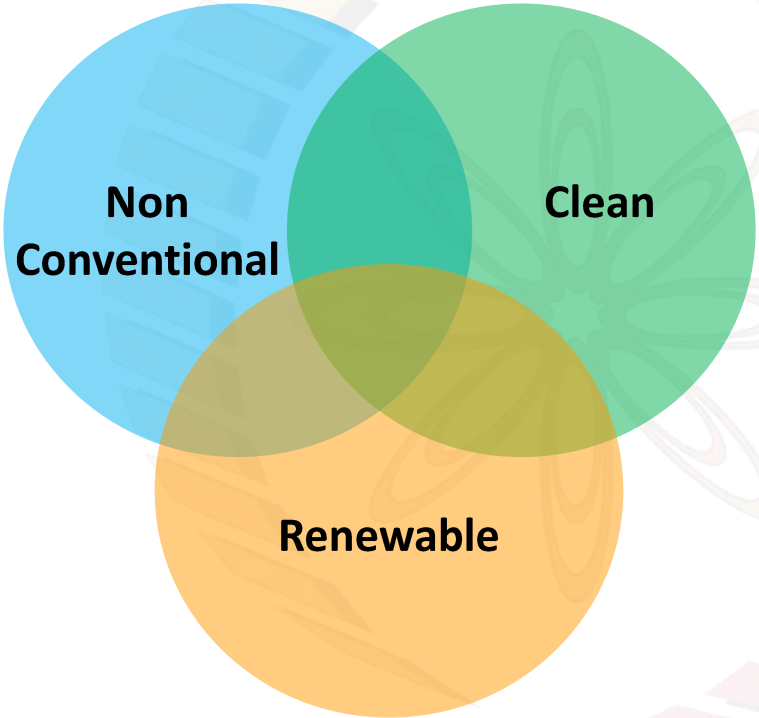
Wave and Tidal Wave

Oscillating water column compresses air and drives a turbine
Can be noisy

Tidal Barrage
Strategically locating specialized dams

Electrochemical Devices

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