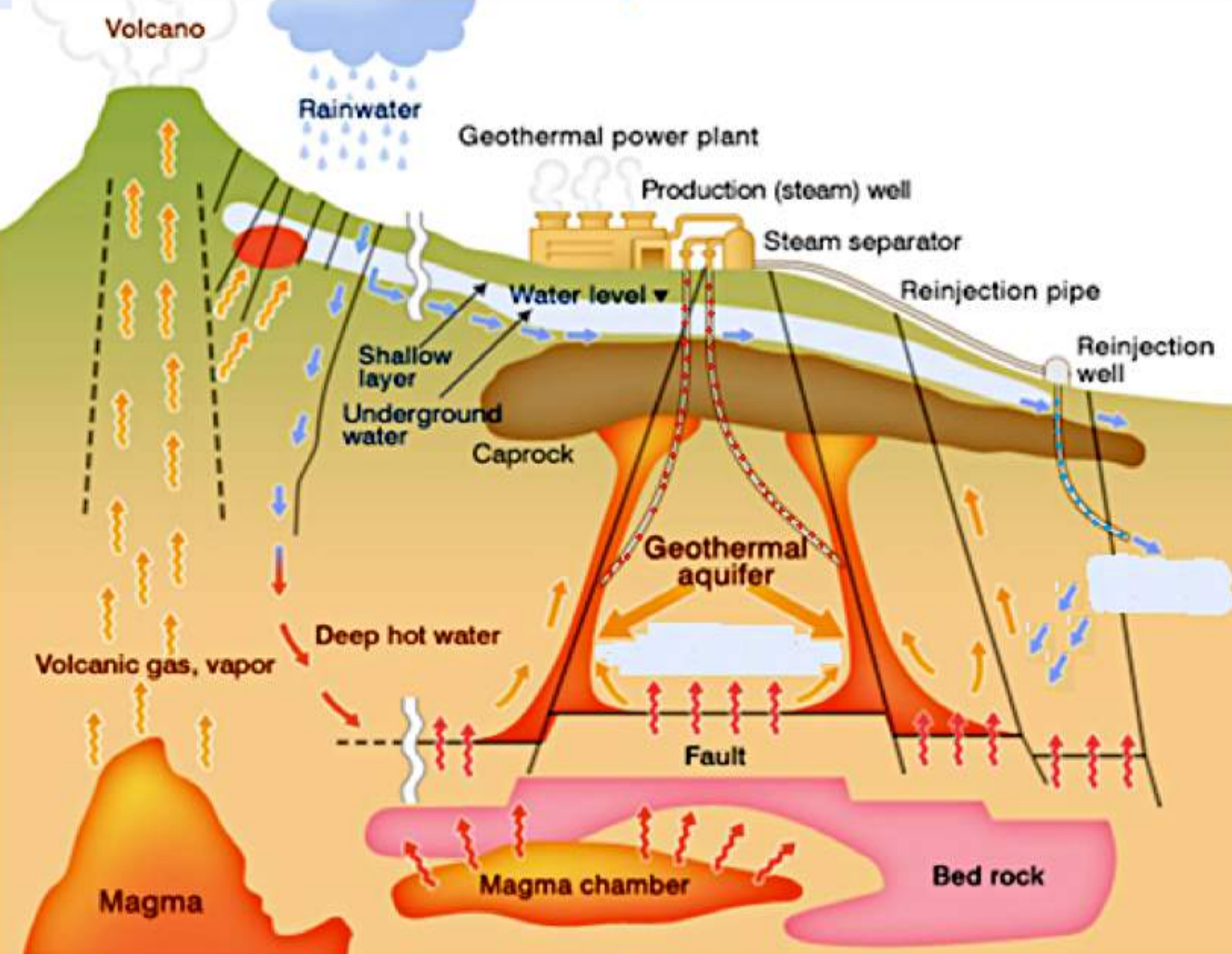


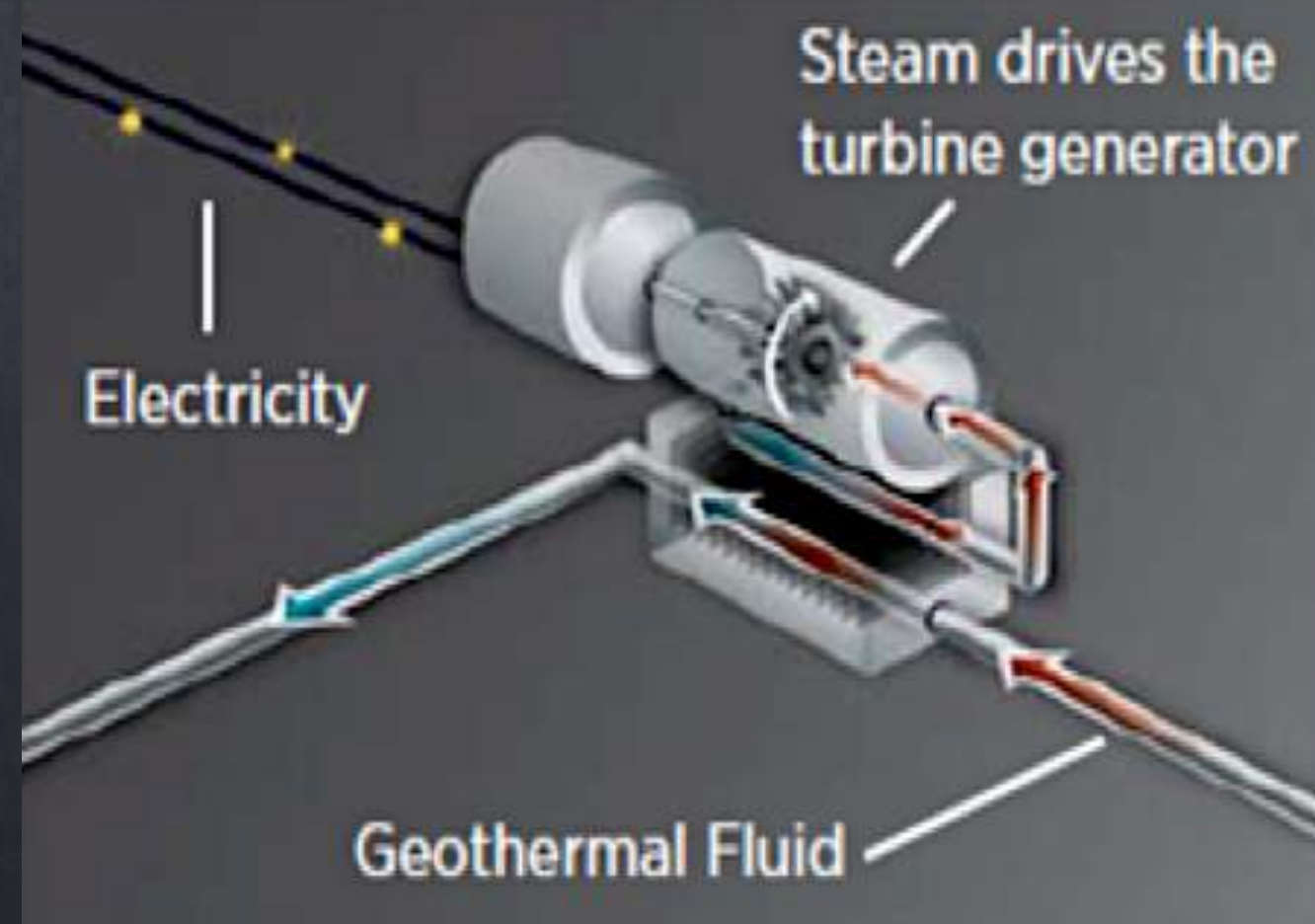
RENEWABLE ENERGY

Geothermal



Explore Potential of Geothermal Energy in the Kingdom

- Geothermal Energy refers to the power generated using heat from the Earth's core. The Earth's thermal energy is tremendous and could be extracted to generate electrical power or for direct applications such as heating and cooling
- Global installed capacity is expected to grow from 10.5 GW to over 31 GW by 2020



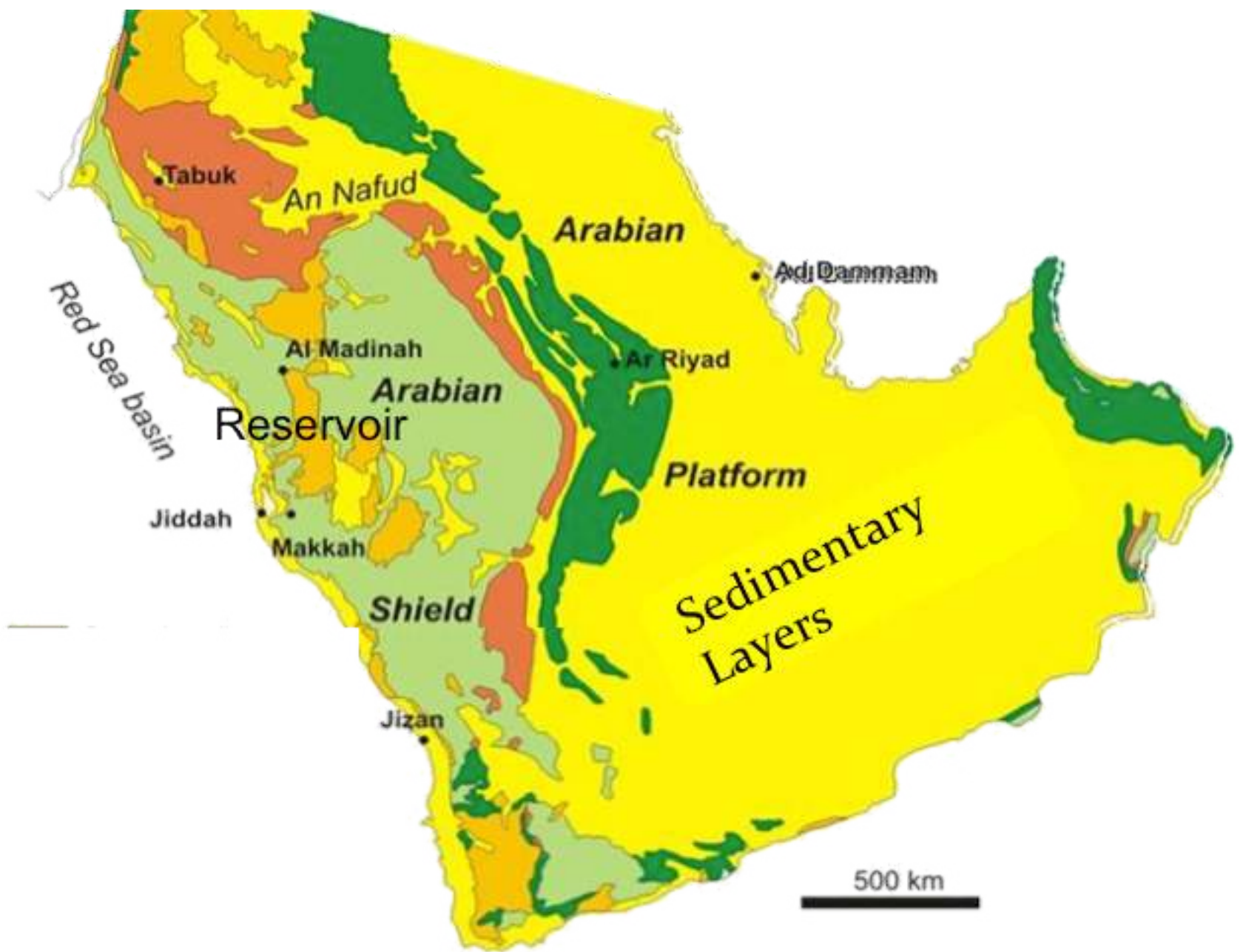
Geothermal Energy Is Environmentally Friendly



- Geothermal energy produces minimal air emissions.
 - ▶ *Very low emissions of CO₂.*
- Geothermal energy minimally impacts land.
- Geothermal energy is combustion free.
- Geothermal energy is quiet.

Low Enthalpy Resources

Saudi Aramco is evaluating low enthalpy resources in sedimentary areas in Saudi Arabia.



Criteria:

Low enthalpy resources:

- Geothermal fluids 70-150°C

Location:

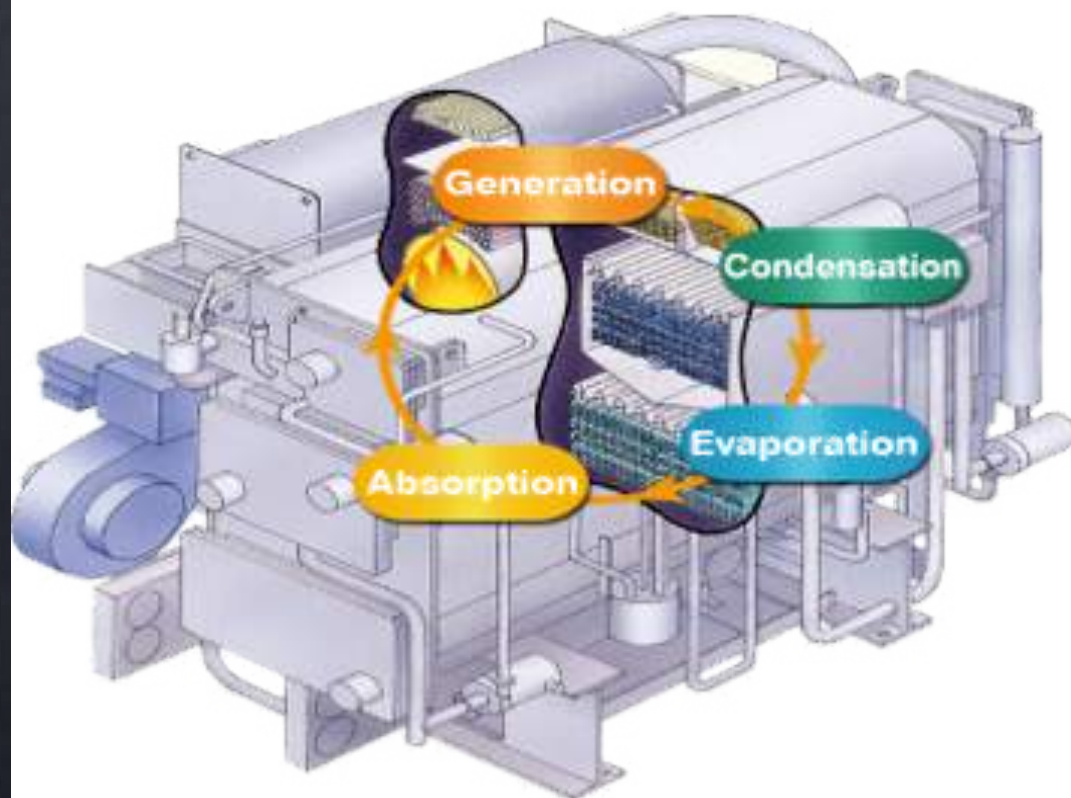
- Sedimentary layers

Targeted Reservoirs:

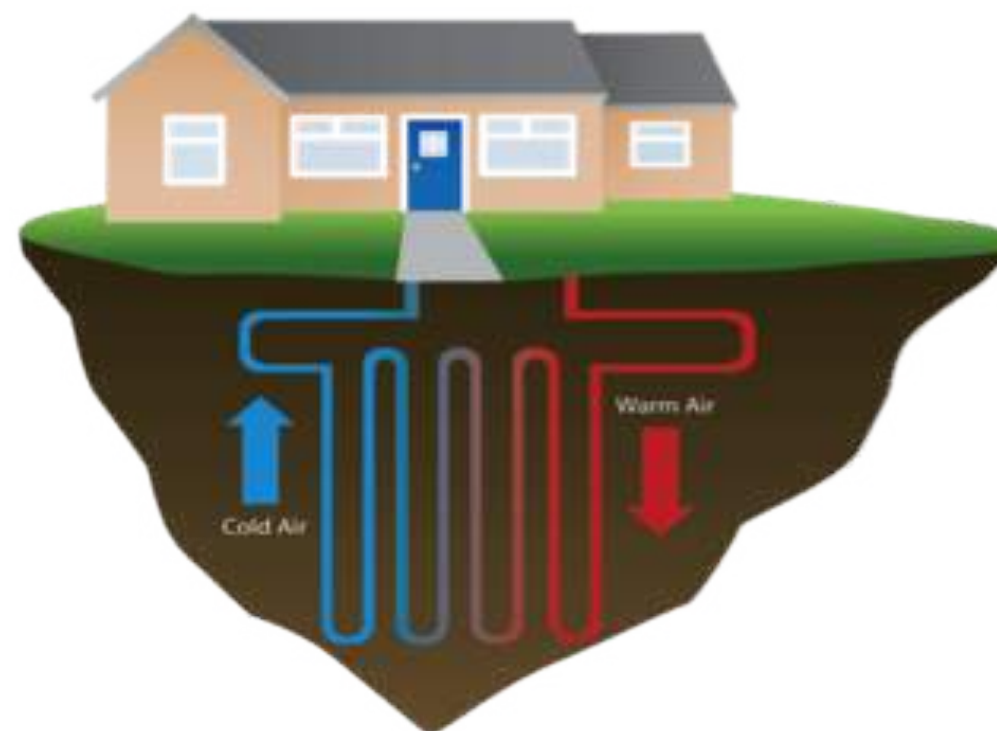
- Temp. < 90° C
- Flow Rate < 50 L/s

Applications:

District Cooling



Heat Pumps



Desalination



High Enthalpy Resources

Saudi Aramco is evaluating geothermal potential in the western region where volcanic complexes exist.

These resources are applicable for electrical power generation.



Criteria:

High enthalpy resources:

- Geothermal fluids $<150^{\circ}\text{C}$

Location:

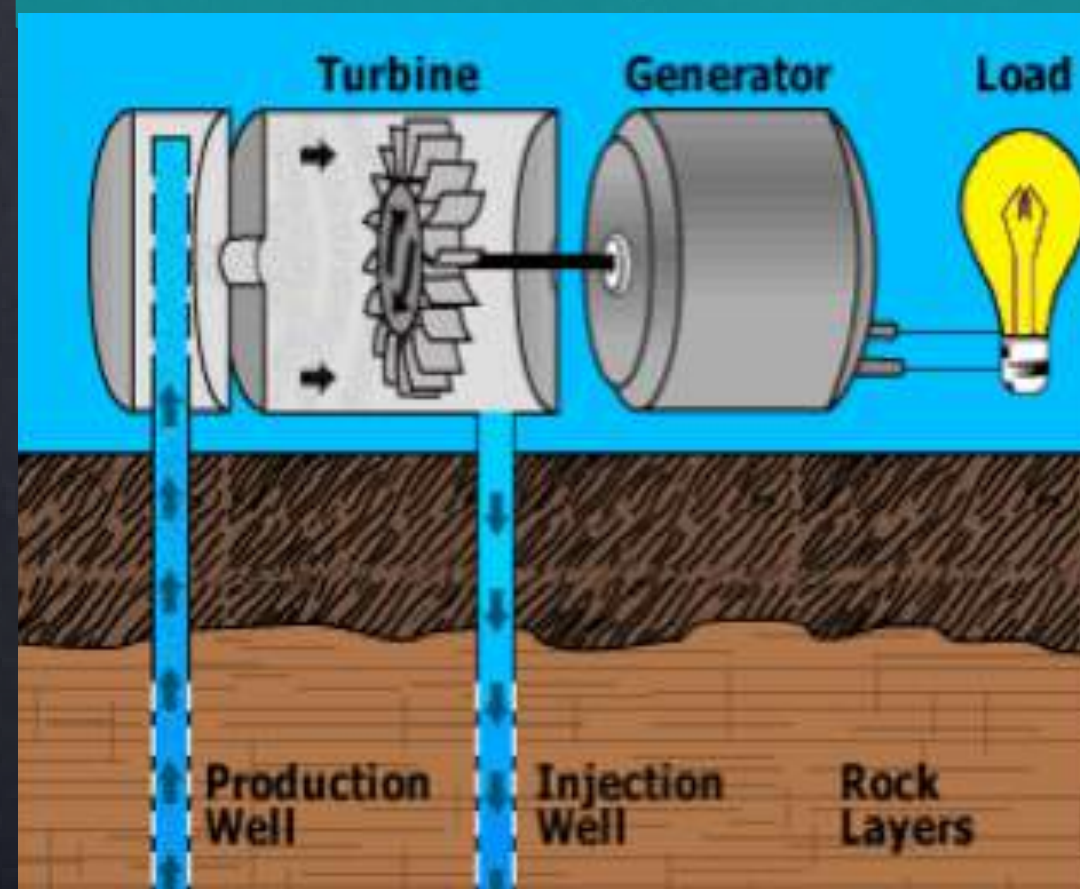
- Volcanic areas in western region

Targeted Reservoirs:

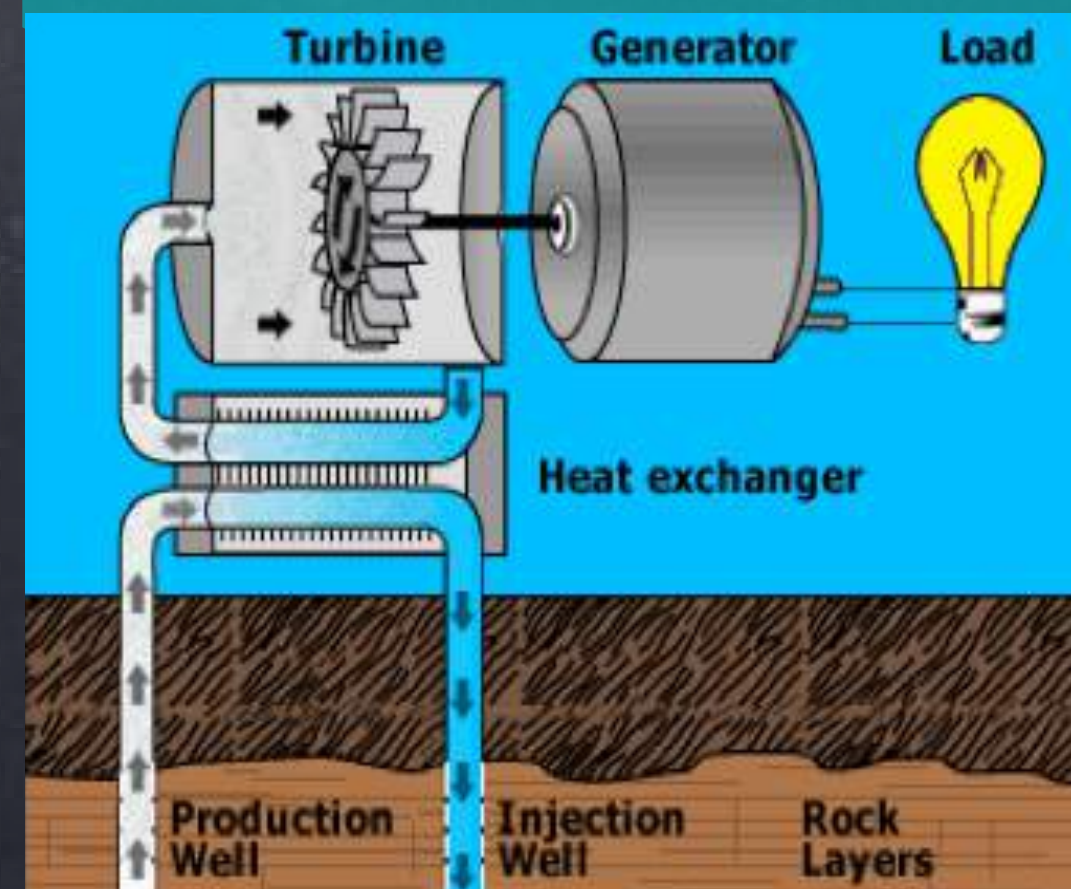
- Temp. $< 150^{\circ}\text{C}$
- Flow Rate $< 70 \text{ L/s}$

Applications:

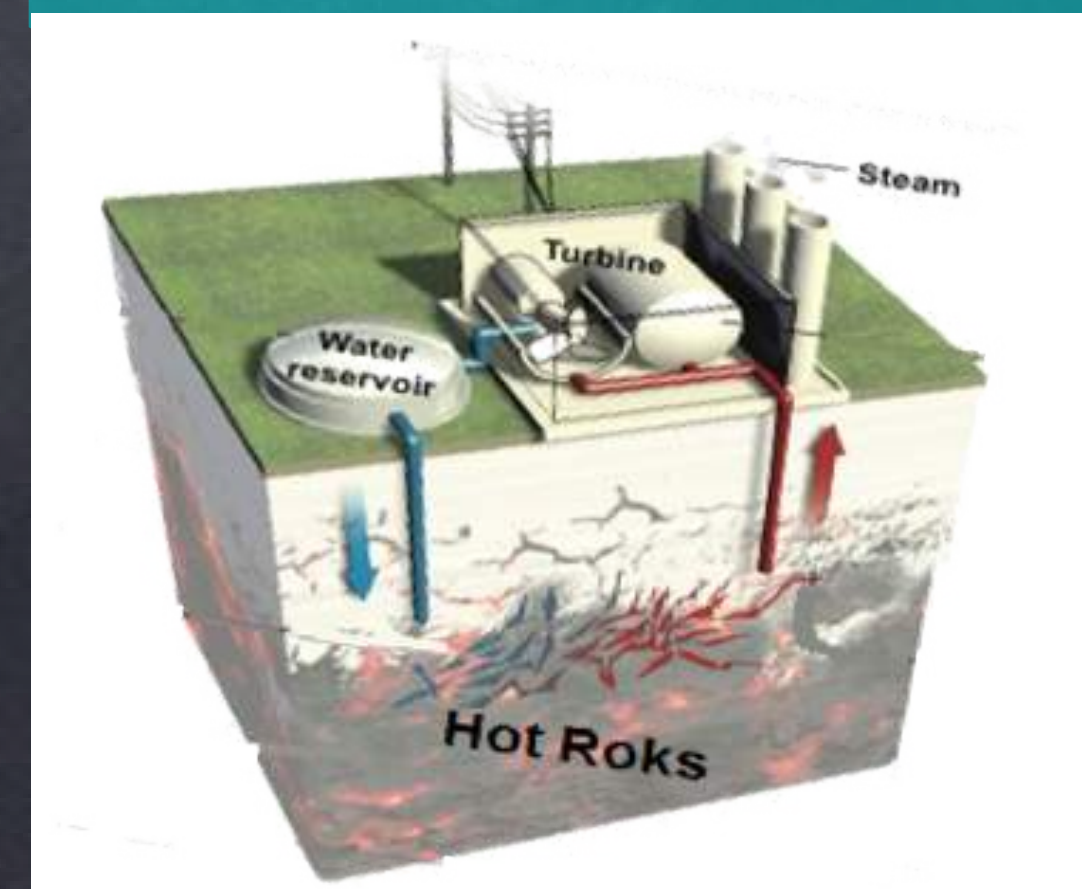
Flash Power Plant



Binary Power Plant



Enhanced Geo. Sys.



أرامكو السعودية
Saudi Aramco

