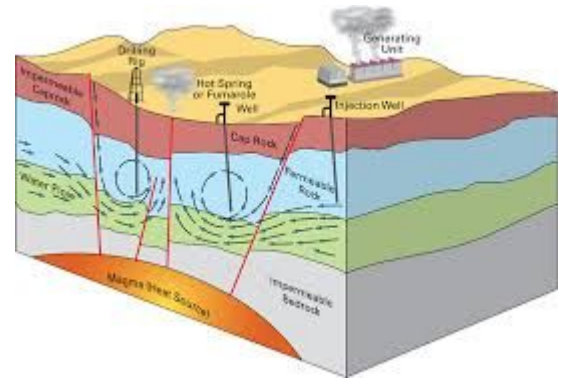


Geothermal Energy



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★ Facts



- ❑ Geothermal energy is Non - Depletable
- ❑ Non- Depletable meaning to reduce and or consume at a low amount
- ❑ The word geothermal comes from the Greek word geo meaning earth and also heat from the earth
- ❑ There's 2 types of Geothermal systems the low and high temperature systems
- ❑ Geothermal water have been used for quite some time
- ❑ United States , Ethiopia , Italy , Japan , Mexico , kenya , Australia and many other more countries produce Geothermal Energy

★ Hot springs

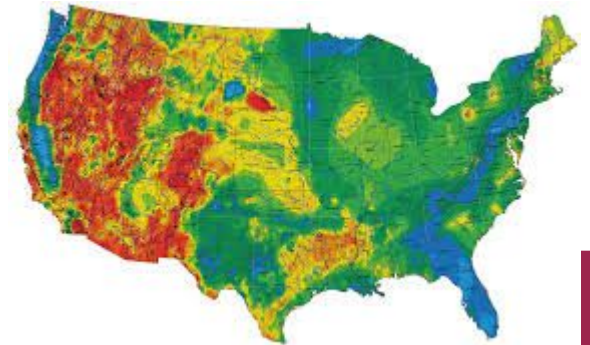
- ❑ Heat from the earth can be used as an energy source
- ❑ Hot Springs is produced by geothermally hot groundwater that rises from the Earth's crust





★ Main Goal

- ❑ The main goal of this energy technology is to help the world US specifically reach “green” goals
- ❑ Geothermal energy has also been used for years now for heating up things and cooking



★ Consequences

From social , economic & environmental

- ❑ Power plants of Geothermal energy usually have impacts on quality of water and consumption
- ❑ All the space that is being used for Geothermal power plants affects the environment
- ❑ It costs a lot it's risky and the public isn't aware



★ Obstacles

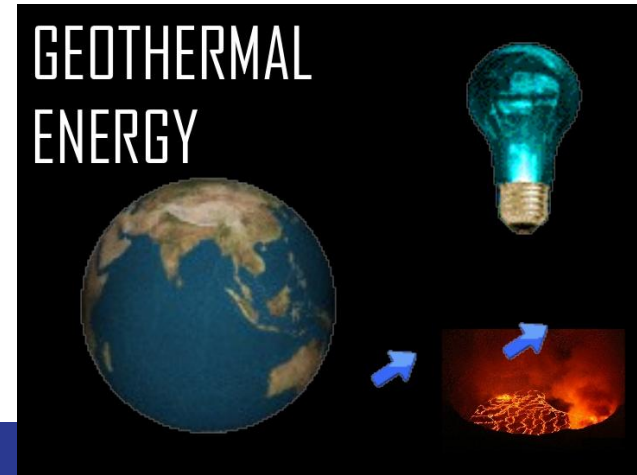
Political & Negative

- ❑ It takes time to be developed
- ❑ Extremely high temperatures
- ❑ co2 intrusions / mineral and toxic gasses



★ Technological Obstacles

- ❑ A consistent and reliable resource that could be an ideal for replacing baseload power source such as polluting coal plants.
- ❑ Would be a initial development but it would be expensive as in long term.
- ❑ We should definitely start investing heavily in the geothermal development for the future.



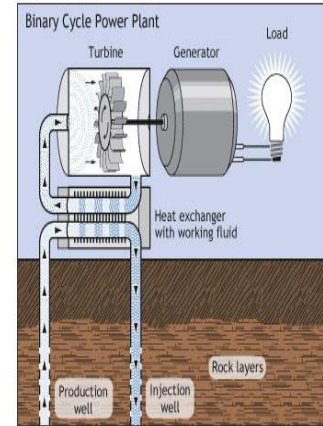
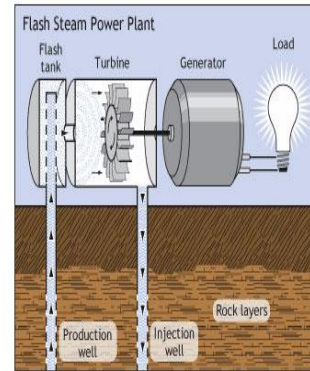
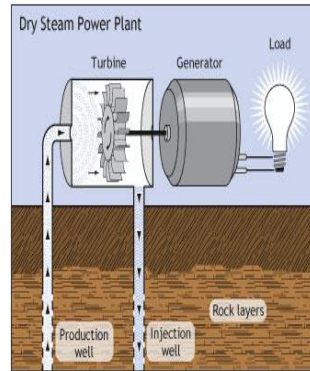
★ How does it all work ?

- ❑ It all happens when groundwater is being heated and rises up
- ❑ It all starts 4,000 miles beneath the surface , the heat makes it's way up through the mantle of magma and rock to get the earth's crust
- ❑ Heat interacts with the rock and creates the hot water
- ❑ We then access it by drilling wells that go from about 1,000 - 11,000 ft. deep
- ❑ steam turbines turns that water into electricity



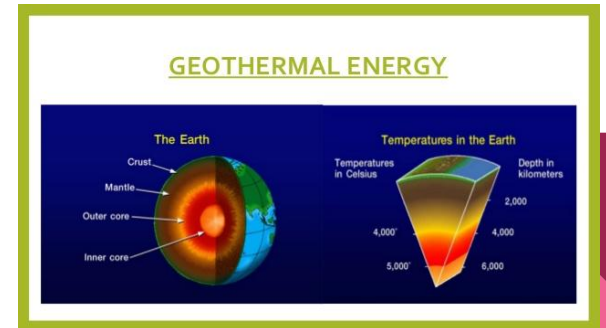
Binary cycle system

It's a way for the hot water to be moved through a heat exchanger, which the heat is a second liquid but as the substance boils with low temperatures than the water. Which is more easily converted into steam to run the turbine.



★ positive impacts

- ❑ low co2 emissions
- ❑ Also is considered environment friendly and doesn't cause significant amount of pollution.
- ❑ Good for meeting the base load energy demand
- ❑ Geothermal Energy produces 97% less acid rain
- ❑ Geothermal plants don't create high levels of emissions



★ Negative impacts

- ❑ water quality and consumption is affected
- ❑ Geothermal power plants can cause earthquakes
- ❑ changes or destroys natural habitats



Citations

1. earthlinked.com/solar-energy/geothermal-energy-can-help-us-states-reach-green-goals/
2. lsa.colorado.edu/essence/texts/geothermal.html
3. <http://www.rnp.org/node/geothermal-energy-technology>
4. <http://energyinformative.org/geothermal-energy-pros-and-cons/>
5. www.our-energy.com/geothermal_energy.html
6. http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-geothermal-energy.htmlhttp://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/how-geothermal-energy-works.html#.VtTxcn1IDMI
7. environment.nationalgeographic.com/environment/global-warming/geothermal-profile/
8. www.dougrye.com/advantages-disadvantages-geothermal-energy.html

