Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_\_\_\_\_\_ Binder Page # \_\_\_\_\_\_\_

**Alternative Energy Sources – Notes**

**1-Cover**

**2-Alternative Energy Sources**

* Primary energy source for world is **F­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Oil, Coal, Natural Gas
	+ Fossil fuels are **N\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Take millions of years to replace
	+ There is a finite amount of Fossil Fuels available to us
	+ Technology, conservation, and better recovery means will enable us to stretch out the Fossil Fuels, BUT SOME DAY WE WILL RUN OUT!

**3-Alternative Energy Sources**

* HYDROELECTRIC-**W\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* SOLAR ELECTRICITY-**S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* WIND POWER
* GEOTHERMAL-earths internal **H\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (volcanoes)
* BIOMASS- **P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** materials
* TIDAL
* NUCLEAR FISSION

**4-Hydroelectric**

* World’s leading form of renewable energy
* Uses potential energy of dammed **W\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to drive a turbine and a generator to produce electricity
* Large enough water **S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are **N\_\_\_\_\_\_** readily available to all communities for this technology.

**5-Solar Electricity**

* The technology of obtaining usable energy from the **L\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the Sun.
* Solar **P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** collect sun’s energy & convert it into **E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* **C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** days & **E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of installment are hindrances for this technology

**6-Wind Power**

* Conversion of wind energy into electricity using wind **T\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, or windmills.
* The irregularity of wind **F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** can create problems when using wind power

**7-Geothermal**

* Use of geothermal **H\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to produce electricity.
* Depends on temperature, **D\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and quality of the water and **S\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the area.
* Fluid injection replenishes water and reheats to a point...
* Dependent on heat source
* Heat and water can be depleted with re-injection

**8-Biomass (aka Biofuel)**

* Any fuel derived from recently living organisms or metabolic byproducts.
* Can be produced from any **C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** source that can be replenished rapidly e.g. **P\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* Biofuels have shown **R\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the majority of regulated emissions.
* Use of crops for biofuel like **W\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, sugar cane, soy, and **C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are raising cost for these crops across the board…

**9-Tidal**

* Electricity generation by capturing the **E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** contained in moving water due to **T\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* Although not yet widely used, tidal power has potential for future electricity generation and is more **P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** than wind energy and solar power.

**10-Tidal Image**

**11-Nuclear Fission**

* Splitting of large **A\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to release **E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* The amount of free energy contained in nuclear fuel is **M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of times the amount of free energy contained in a similar mass of chemical fuel such as gasoline,
* Therefore a very tempting source of energy;
* However, products of nuclear fission are **R\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** & remain so for significant amounts of time, causing a nuclear **W\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** problem.

**12-Fission Image**

**13-Nuclear Reactors in the World**

**14-Nuclear Reactors in the USA**