**Resources:**

-Traditional Energy:

    Wood

    Field Crops

    Fecal Material

    Peat

-Conventional Energy

    Coal

    Oil

    Natural Gas

    Nuclear

**What is Peat?**

-Peat is an accumulation of partially decayed vegetation matter and is the first stage in the formation of coal.

-Peat forms in wetlands, variously called bogs, moors, muskegs, pocosins, mires, and swamps.

-Historically, it has been used as a source of heat and burns with a long flame and considerable smoke

-Peat deposits are found in many places around the world, notably in Russia, Ireland, Finland, Scotland, Poland, northern Germany, the Netherlands and Scandinavia, and in North America

-Approximately 60% of the world's wetlands have peat

**What are the advantages and disadvantages of Oil?**

-Conventional oil is currently abundant, has a high net energy yield, and is relatively inexpensive, but using it causes air and water pollution and releases greenhouse gases to the atmosphere.

-Heavy oils from oil sand and oil shale exist in potentially large supplies but have low net energy yields and higher environmental impacts than conventional oil has

**Who controls the Oil Prices?**

-OPEC Controls Most of the World’s Oil Supplies

-13 countries have at least 60% of the world’s crude oil reserves

    Saudi Arabia: 25%

    Canada: 15%

-Oil production peaks and flow rates to consumers

**What are the Advantages and Disadvantages of Conventional Oil?**

-Extraction, processing, and burning of nonrenewable oil and other fossil fuels

**What is Hydraulic Fracturing?**

-Hydraulic fracturing, or fracking, is a technology used in drilling for oil and natural gas

**What are the advantages and disadvantages of coal?**

-Conventional coal is very plentiful and has a high net energy yield and low cost, but it has a very high environmental impact.

-Gaseous and liquid fuels produced from coal could be plentiful, but they have lower net energy yields and higher environmental impacts than conventional coal has.

**How does a nuclear fission reactor work?**

-Controlled nuclear fission reaction in a reactor

    Light-water reactors

-Fueled by uranium ore and packed as pellets in fuel rods and fuel assemblies

-Control rods absorb neutrons

-Water is the usual collant

-Containment shell around the core for protection

-Water-filled pools or dry casks for storage of radioactive spent fuel rod assemblies

**What is the nuclear fuel cycle?**

-Mine the uranium

-Process the uranium to make the fuel

-Use it in the reactor

-Safely store the radioactive waste

-Decommission the reactor

**Will nuclear fusion save us?**

-”Nuclear fusion is the power of the future and always will be”

-Still in the laboratory phase after 50 years of research and $34 billion dollars

-2006: Us, China, Russia, Japan, South Korea, and European Union

    Will build a large-scale experimental nuclear fusion reactor by 2040