Timberline High School Physics

Free Energy!

Scientists Say Fusion Can Fix Energy Crunch

Special Points of Interest::

- Fusion energy released from just 1 gram of DT is about equal to the energy supplied by 2,400 gallons of oil.
- At our present rate of fossil fuel use, we will have a shortfall in 50 years.
- Fusion is an inexhaustible fuel source that is totally safe.
- Fusion is environmentally friendly, producing no combustion products or greenhouse gases.
- If all goes well in the development, commercial application should be

Federal government programs and private corporations will testify next week in support of Bill 223-5x which would give fusion research a billion dollar boost.
Fusion happens when small atomic nuclei are slammed together to make bigger particles. During this process, energ is released. This is the same physical pro-cess that occurs inside our sun. The process requires very high temperatures. Carol A. Phillips of the Princeton Plasma Physics laboratory says, "It takes a temperature of 100 million degrees in order for fusion to occur. We can get plasma to this temperature but effectively containing it in enough quantity to build a demonstration reactor

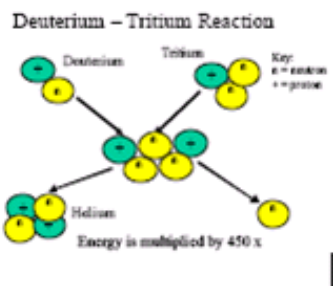
Tokamak Reactor in Every House?

Advantages of fusion power are many. The fuel required for fusion power is just water, lithium and tritium, or "heavy water."
These are very simple and plentiful chemical elements and compounds. Unlike old "nuclear power" plants that use fission of heavy elements, fusion reactors create no toxic waste. The only waste product is helium—the gas that is used in party balloons. "The thing that killed the nuclear power industry was the public perception that there

downs of the reactor core," says Doc Rencher of the Idaho national Laboratory. With fusion, the amounts of fuel are so small that there is no risk of a large uncontrolled reaction. Fusion plants create no air pollution, no radioactive waste, and no products that can be used to create nuclear weapons.
Imagine an electric bill that cost pennies. If you would like to invest in our future, please contact your elected representatives and urge them to support Bill 223-5x.

Fuel Consumption vs. Waste Production

	Coal Plant	Fusion Plant
Fuel it takes to power the state of Washington for 1 hour	90,000 tons coal	10 pound water 30 pounds lithium 15 pounds tritium
Waste produced	300,000 tons CO_2 6000 tons of sulfur dioxide 800 tons of nitrous oxide	40 pounds helium



A Tokamak reactor is a device where fusion takes place. Currently, it is the most successful device yet found for magnetic confinement of plasma.
Tokamak reactors use strong magnetic fields to keep the atoms apart long enough for fusion to take place. It is unlikely that reactors small enough to provide power for a single house will ever be made, but a single reactor could easily provide all of the power needed for western Washington now and in the future.