Advantages and disadvantages of Fusion

- Deuterium is available from sea water, about $10 \times 10^{12}$ tons. Tritium can be produced from Li through the reaction:
  \[ n + ^7Li \rightarrow T + \alpha \]
- Sea water contains thousands of years supply of Li.
- No long-lives radioactive material is created": Tritium half life =32 years
- Fusion reactors could be continuously loaded: no poisoning of fuel.
- Fuel consumption extremely low because of huge energy production per kg of fuel.

Disadvantage: The complexity of plasma confinement and heating has held back development for 40 years!

http://fire.pppl.gov/fire_program.htm