Energy of Tomorrow: General Fusion

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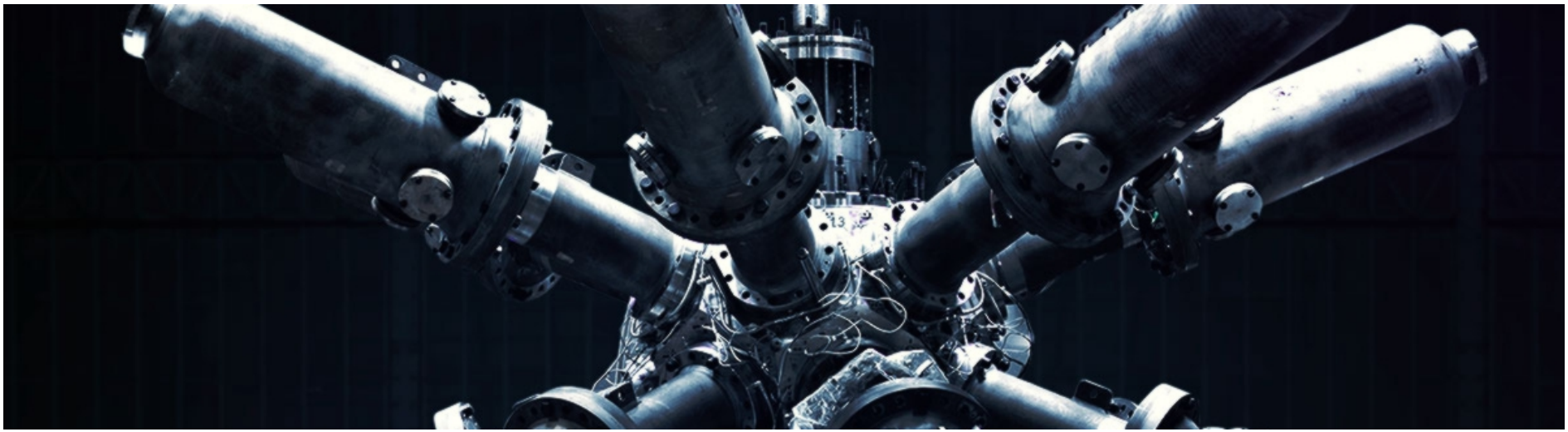
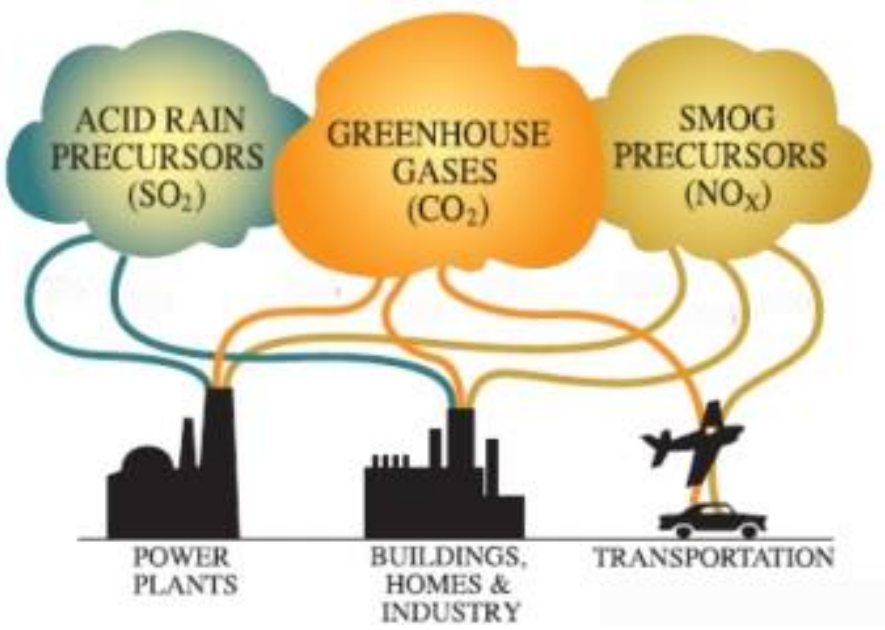


Overview

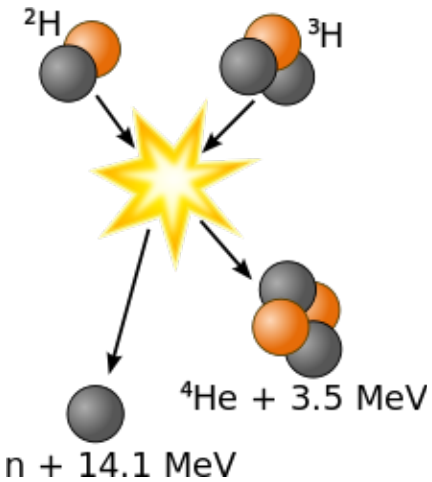
The Current Situation

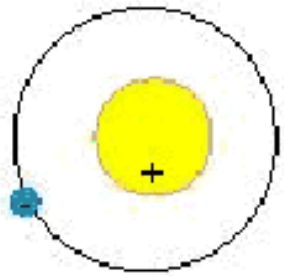
- U.S. Department of Energy predicts a 50% increase in global energy consumption by 2035
- Fossil fuels currently generate the majority of the worlds power
- What if there was an alternative?

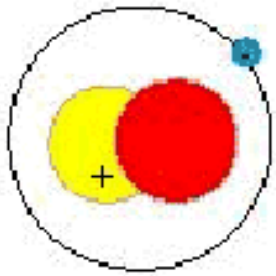


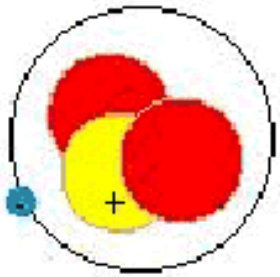
What is Fusion?

- A constituent of the Atom is the nucleus
- Composed of nucleons: protons, neutrons
- Nuclei can be split or fused, resulting in heat energy
- This energy arises from the interaction of two forces
- Nucleons exert a binding force amongst themselves at very close distances and protons exert a columbic repulsion
- Energy source of stellar bodies



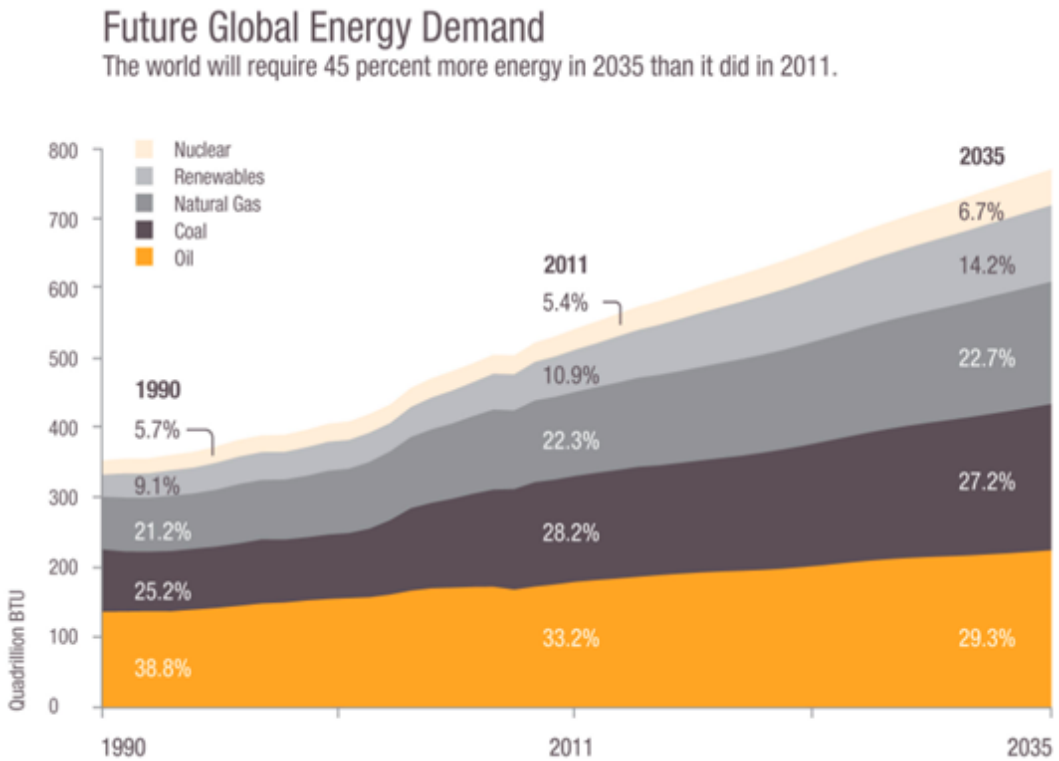

Hydrogen


Deuterium


Tritium

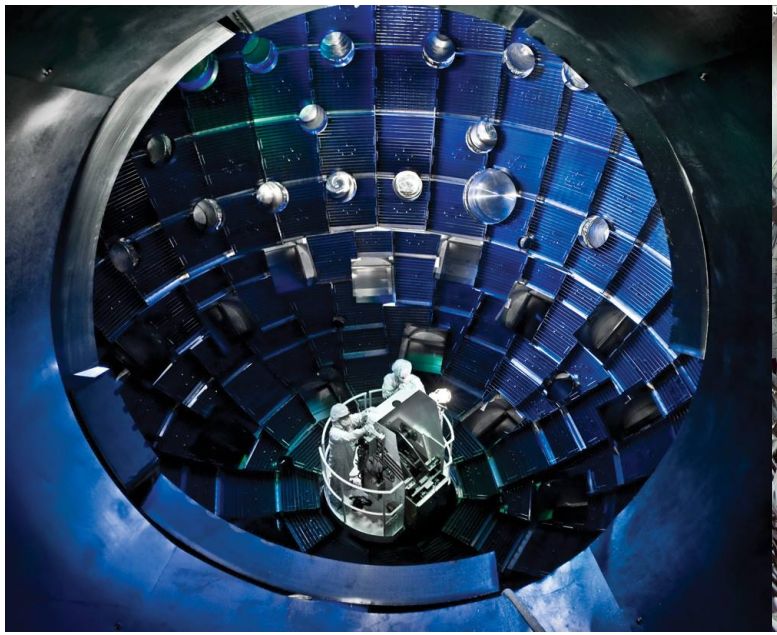
Why is Fusion Important?

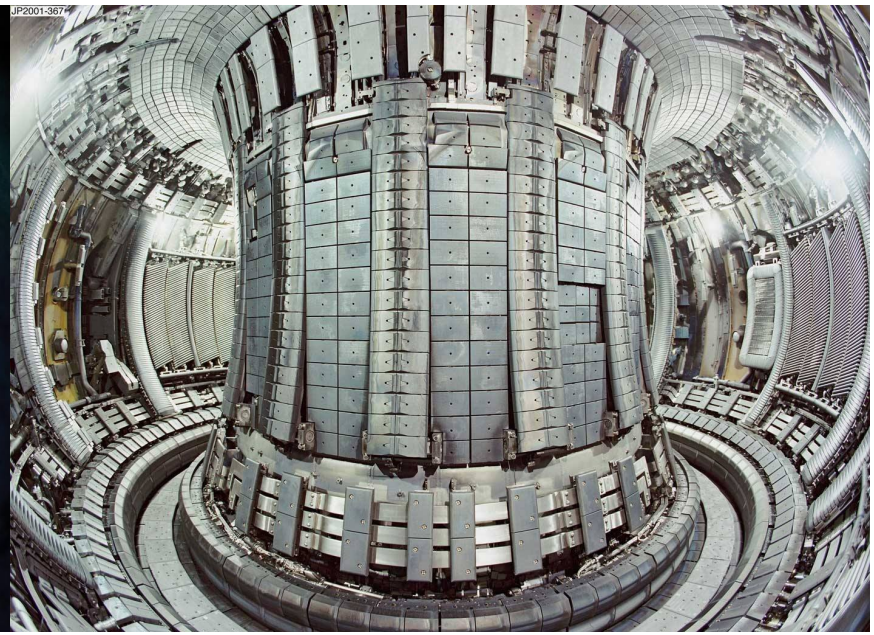
- Energy Consumption/ Population Growth
- Abundant/Accessible Fuel
- Low Pollution



Why Don't We Have it?

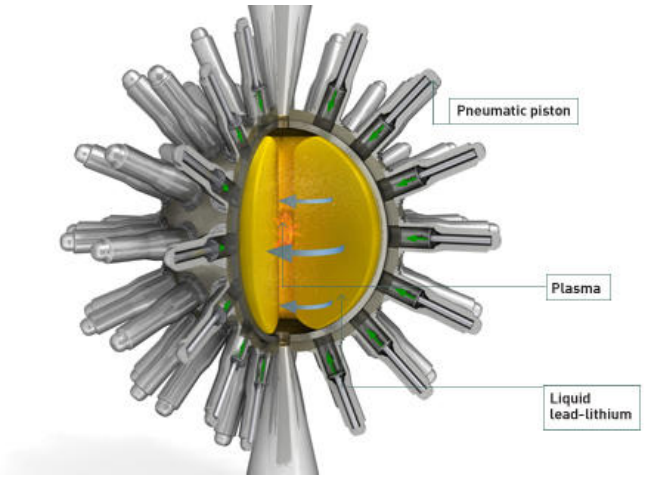
- Fusion only occurs naturally in stars
- Technology to generate and withstand extreme conditions is complex
- $Energy_{in} < Energy_{out}$
- Multiple reactor designs





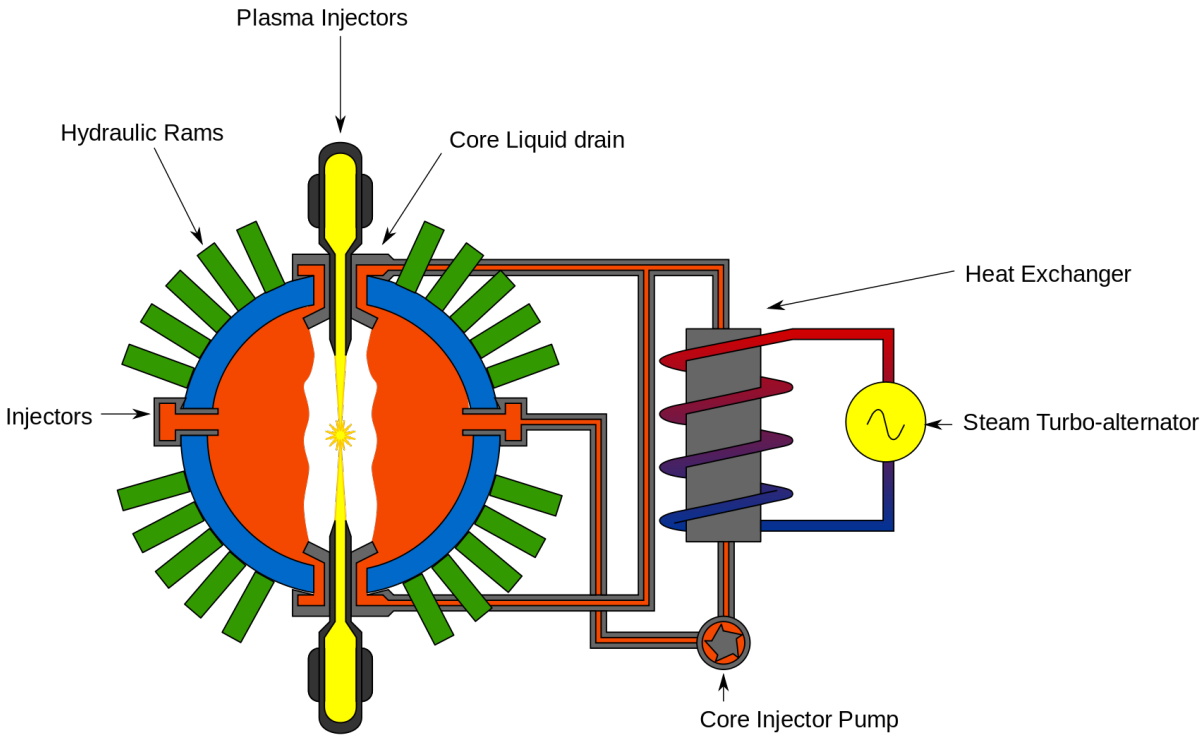
Progress Towards Fusion

- Multiple reactors internationally
- General Fusion
- Magnetized target fusion
- Reactor design
  - Pistons slam into liquid lead alloy filled shell
  - Pressure waves catalyze fusion of Deuterium and Tritium
  - Liquid lead absorbs and exchanges heat
  - Breeds one of the fuel ingredients
  - Smaller/cheaper than other reactors



Advantages of General Fusions Reactor

- Small Cheap reactor
- Direct Energy extraction from Liquid Lead
- Tritium Breeding from Neutron Bombardment
- Scale Reactor Construction in Progress



Final Thoughts

- Fusion Provides Answer to Growing Energy Demand
- Abundant and Clean Fuel Source
- Only Technical Issues hindering Progress
- General Fusion Provides answer for Cheap Efficient Reactor

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Thank-you