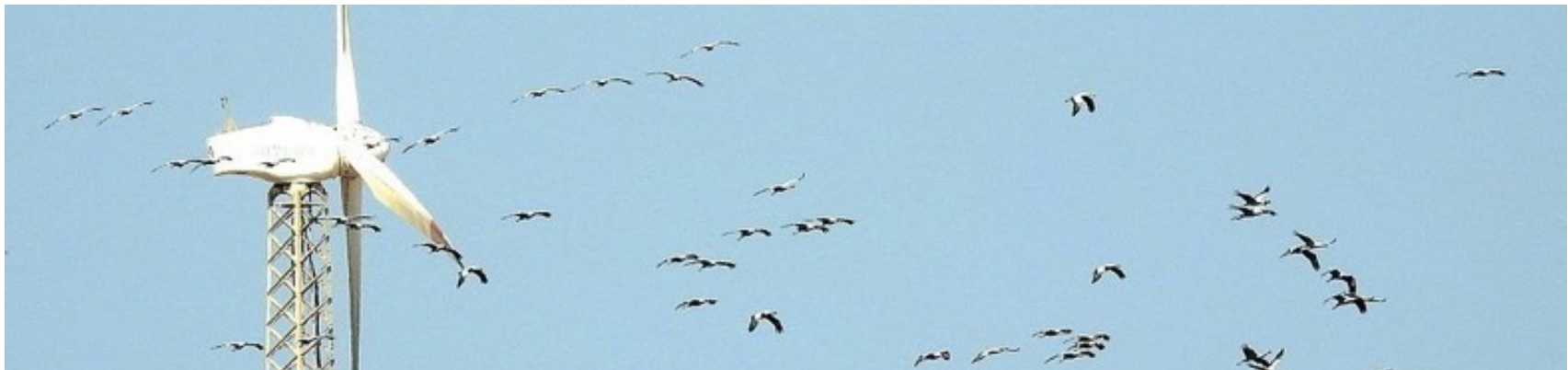


- When wind farms are proposed near population centers, residents often oppose them.
 - Local people object to wind farms for aesthetic reasons, creating a **not-in-my-backyard (NIMBY)** syndrome.



- .Wind turbines also pose a threat to birds and bats, which are killed if they fly into the rotating blades.



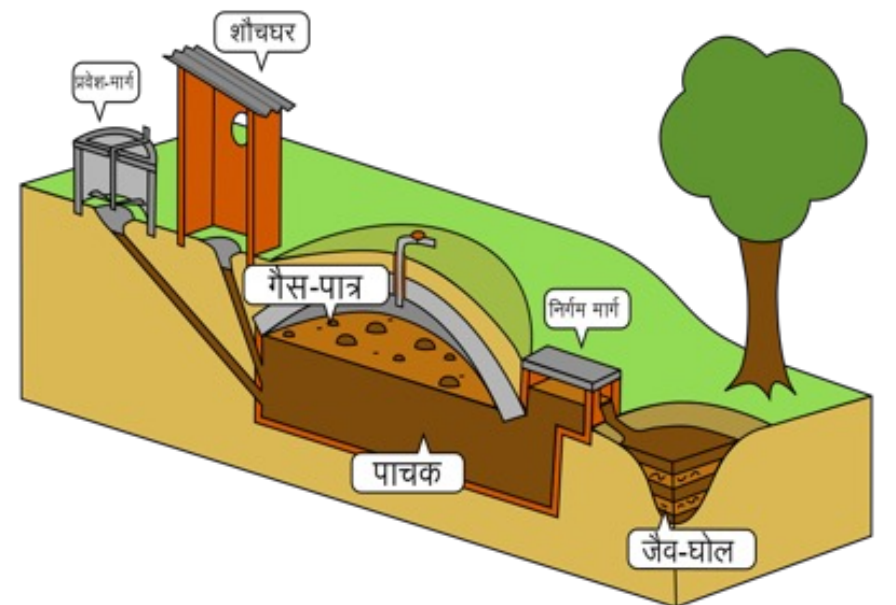












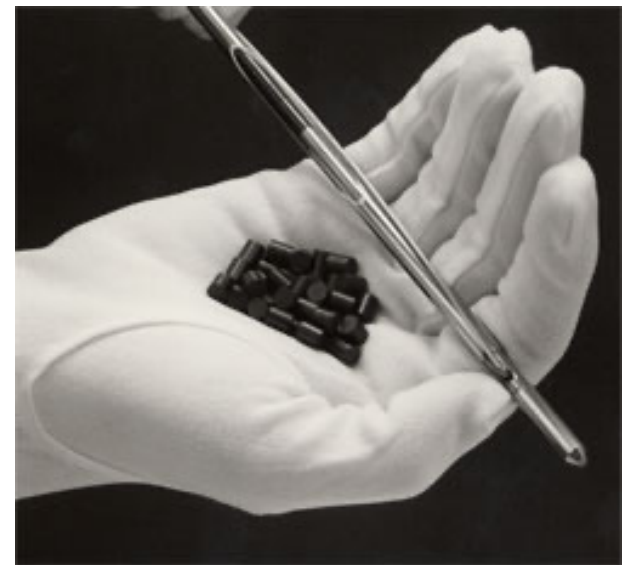
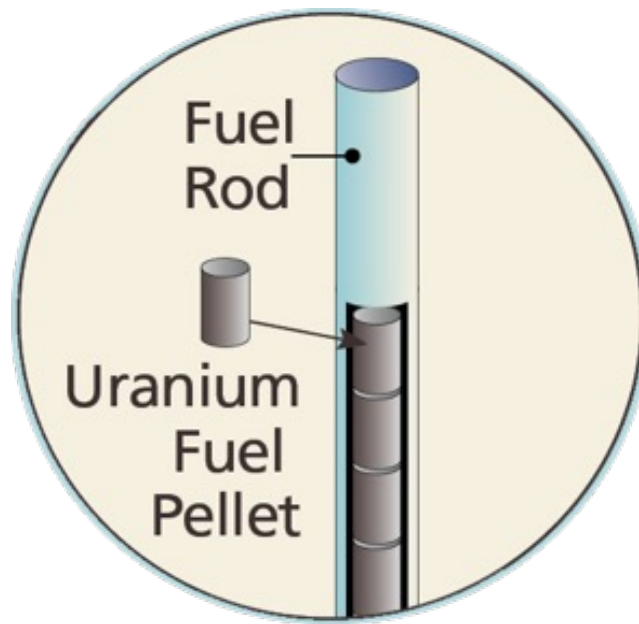
Net energy = energy returned – energy invested

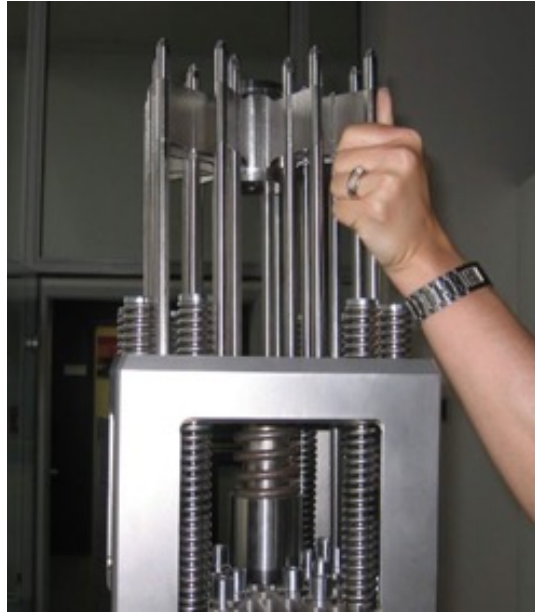


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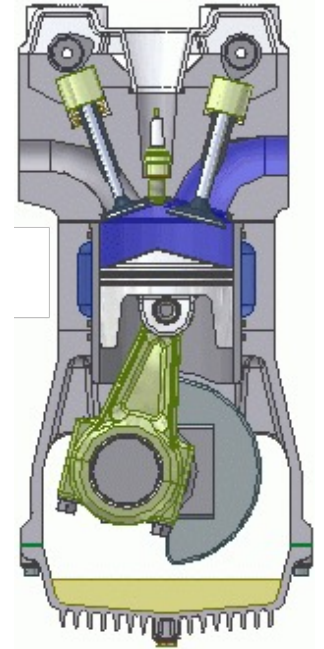
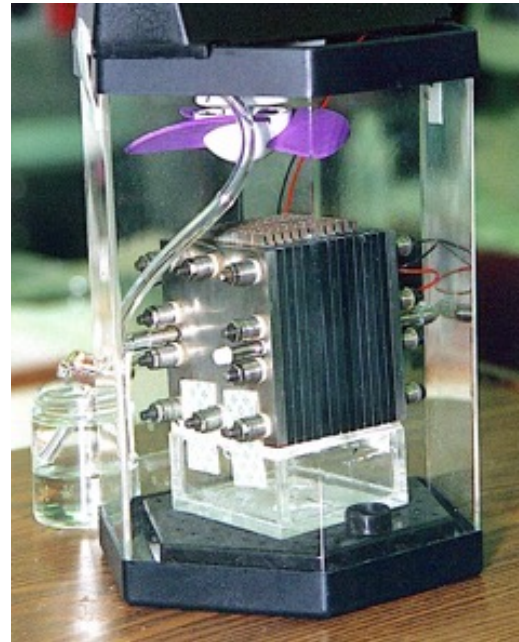


Fuel Cells

Fuel cells generate electricity from fuel instead of burning it

Fuel cell vehicles get three times more miles per unit fuel than combustion engines because almost no waste heat is generated

Fuel cells are not widely used because generating, storing, and transporting large quantities of hydrogen is impractical



Not all fuel cells run on hydrogen

Research is being done on fuels cells that run on energy carriers that are more convenient

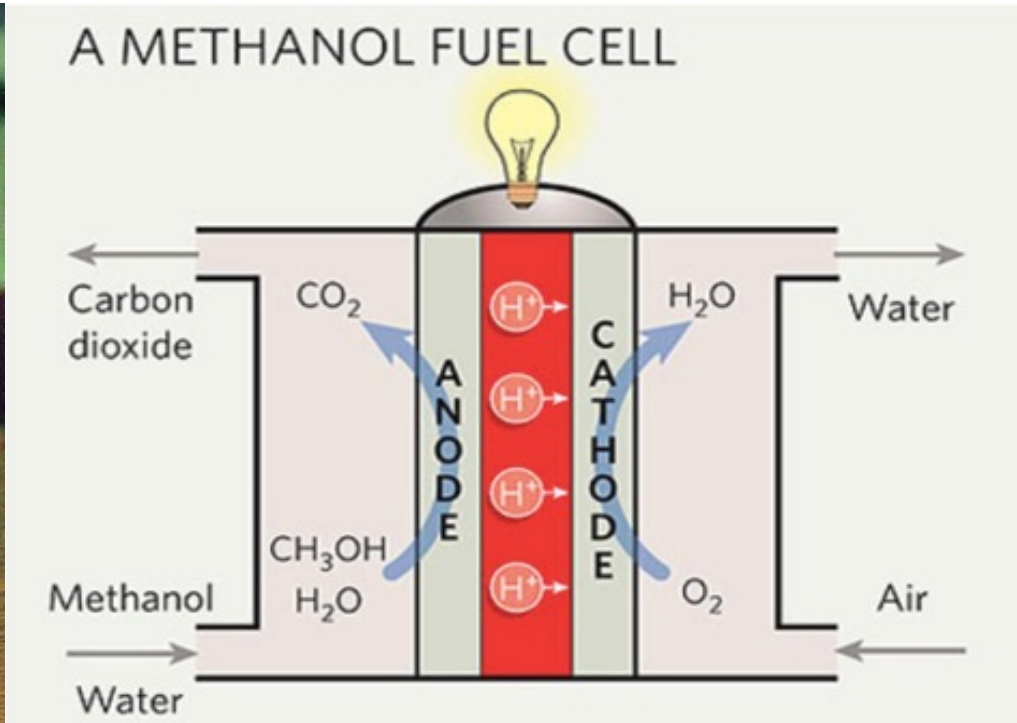
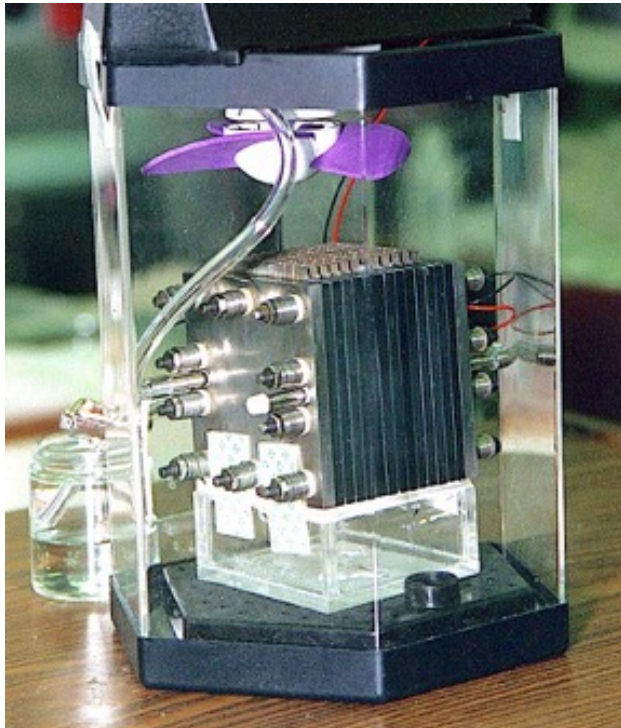


Image on right downloaded on 4/14/20 from “Renew Economy” at <https://reneweconomy.com.au/solar-methanol-and-the-third-industrial-revolution-42856/>

Fun facts about fossil fuel subsidies not in your book:

- The largest expenditure is for the Strategic Petroleum Reserve
- The second largest expenditure is tax exemptions for farm fuel.
- The third largest expenditure is Low-Income Energy Assistance.
- Additional subsidies help keep more oil and gas jobs in the US



From *The Surprising Reason That Oil Subsidies Persist*, Forbes (4/25/2012)

<https://www.forbes.com/sites/energysource/2012/04/25/the-surprising-reason-that-oil-subsidies-persist-even-liberals-love-them/?sh=2ebaf5653279>

What about electric vehicles?
Lithium mining is not green!



From *Protests force government to pull three areas identified for lithium mining*, Portugal Resident (2/17/20) <https://www.portugalresident.com/protests-force-government-to-pull-two-areas-identified-for-lithium-mining/>