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A Solution to Climate Change

I believe the solution to climate change lies in the power capabilities of nuclear power. So far it is the lowest emissions energy type, tied with wind power. Nuclear is not renewable but it is recyclable, up to 96% of spent fuel in current nuclear reactors can be recycled and reused. Nuclear has very high initial building cost, but the overall price per unit of power is comparable to the current prices of coal power plant power and a lot cheaper than biomass and offshore wind power. It can also be used as a source of clean water, as residual heat can be used to boil sea water and purify it. Nuclear also has the capability to be rolled out very quickly, as has been done in France. In 6 years, they have gone from having little to no nuclear power sources to having most of their power from nuclear. Currently countries are hesitant to implement more nuclear power in fear of repeats of accidents like the Fukushima partial meltdown and the Chernobyl disaster. However, these are the only 2 major accidents in a combined 18,500 years of reactor years. The danger of a meltdown is lower than ever and still on a steady decline in new reactor designs. All energy types have accidents and deaths in their operation, and per kilowatt hour produced, nuclear is the safest energy type by far, having less than 1/1000 of deaths per kilowatt hour than coal and 1/360 that of oil. If you look into the 2 major accidents there is a reason for both that we can learn from and improve designs. For Chernobyl, it was poor soviet technology and poorly trained staff that ultimately caused the accident with 2 deaths from the initial fire and 28 more from radiation poisoning, for Fukushima, it was a tsunami that adjacently killed 19,500 people, thankfully no one was killed by the Fukushima incident. There is a 3rd accident that was in USA: the 3 Mile Island, where the reactor was severely damaged but was adequately contained and there was no ecological impact or deaths. Excluding Chernobyl, no member of the public, or nuclear worker has been killed as a result of exposure to radiation due to a commercial nuclear reactor incident. Most of the nuclear exposure deaths each year (2 – 4 people) is from large uncontrolled radiation sources (medical / industrial). I believe that nuclear energy, if properly implemented can serve as a very ecologically friendly and green energy to replace other power sources to slow climate change and eliminate the 30% – 40% of emissions caused by energy production.

Sources

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^ (Potentially biased)

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