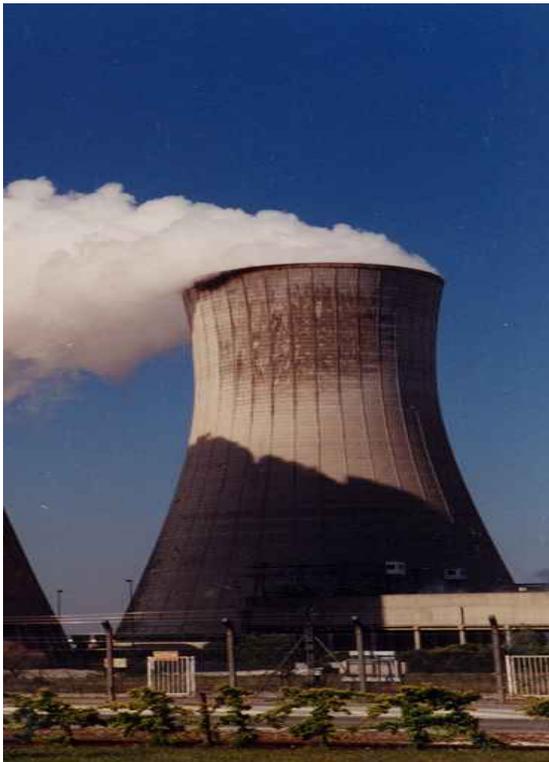


Nuclear power can't stop climate change

Even though the Bush Administration stubbornly refuses to admit that global climate change is a serious environmental threat, the US nuclear industry is spending **millions of dollars** promoting atomic power as the answer to the greenhouse effect. Their claim is without basis. Nuclear energy is neither efficient nor effective in cutting CO₂ emissions. Moreover, it is not an endless energy source and carries its own unique and timeless threat to the global environment and security.

Nuclear energy is portrayed as the flagship in the battle against the global warming. Industry claims that CO₂, the most prominent of greenhouse gases, is not produced using nuclear power.

Such claims fail to account for the entire nuclear fuel chain. For instance, the nuclear industry conveniently omits the fact that the nuclear fuel chain emits more CO₂ than most of the real-world sustainable options. The emissions related to nukes are caused by the fossil fuel intensive processes involved in uranium mining, conversion, enrichment, transport and construction. As a result nuclear power produces direct and indirect emission of 73 to 230 grams of CO₂ per kWh electricity produced. Wind and



solar, by comparison, are virtually greenhouse-gas free, recouping construction emissions in the first years of operation.

Nuclear-related CO₂ emissions will grow with time, mainly due to the 'impoverishment' of future uranium sources. As limited high-grade uranium ore deposits are exhausted worldwide, the processing of lower grade ore will emit CO₂ at the same or greater rates than coal-fired stations.¹ In essence, obtaining the necessary quality and quantity of uranium to run nuclear reactors will get more difficult as the uranium ore becomes scarce.

not enough uranium

As the uranium supply runs short it will become difficult to accelerate uranium production because it takes eight years to put a new uranium mine into production. The International Atomic Energy Agency (IAEA)² predicts insufficient production now and in the future. Pro-nuclear industry sources estimate that the worldwide uranium supply is 6.4 million tons. If we used nuclear power for 70% of our electricity generation worldwide starting now, we would exhaust this uranium supply between 2016 and 2018. That is IF we could build enough nuclear reactors to provide 70% of the world's electricity, which we can't.

not enough money

Climate protection will take loads of money. Every dollar has to be spent as efficiently as possible. In study after study, nuclear power comes out as the most expensive option for CO₂ mitigation. Every dollar spent on energy efficiency is seven times more beneficial than that same dollar would be spent on nuclear power. Yearly costs per 1000 kg avoided CO₂

emissions is 68.9 dollars for wind and 132.5 dollars for nuclear power.

not enough time

Without massive government investments new nuclear power plants are unlikely to be constructed in the near future because of high capital costs. Wall Street looks at short term returns which nuclear plants cannot provide. But suppose we were to make the political choice to use nuclear power to address climate change; how many extra nuclear power stations would need to be built?

A Massachusetts Institute of Technology Study on “The Future of Nuclear Power” projected that a global growth scenario for as many as 1500 one thousand megawatt-electric new reactors would be needed to displace a significant amount of carbon-emitting fossil generation.³

For the best-case IAEA scenario where 70% of electricity would come from nuclear power, an increase of an average of 115 power stations of 1000 MW each would have to be constructed annually. Estimates for the International Panel on Climate Change suggest that within the European continent, 1000 reactors would need to be operational in 2100, six times the current level. The average construction time of a nuclear power reactor is now ten years. Building 115 power stations per year would only reduce our CO2 use by 16%. This is the high-growth scenario.

not enough world

If we build 1000 to 1500 new nuclear reactors, a new Yucca Mountain-sized dump would be needed every 3 to 4 years. The Yucca Mountain process has taken 20 years so far and is still not accepted or operational. Even if it were operational, science indicates that this dump would leak into the aquifer underneath the site, a recognized source of future clean water for the Southwestern US (USGS map).

The 1986 Chornobyl nuclear power station explosion in Ukraine rendered an area the size of Switzerland uninhabitable for hundreds of years.

Food restrictions are still in place hundreds and even thousands of miles from the site due to lingering deposition of radioactive fallout. More reactors mean greater risks of another accident. How many more Chornobyl's can we afford?

Nuclear power doesn't just pollute through an accident. It pollutes as a matter of routine operational necessity. Nuclear reactors regularly spew out radioactivity, chemicals and heat pollution, endangering life and environment.

As if this isn't enough, nuclear power threatens our security by producing 200 bomb's worth of plutonium every year; and by merely existing as pre-deployed radiological weapons that can be turned against us as targets of terrorism as experienced on September 11th.

the world knows it

In late 2000, the nations of the world decided to reject nuclear power as a solution to climate change by denying the nuclear industry clean fuel credits reserved for truly sustainable energy sources.

Finally, in a recent IAEA interview a spokesperson admits that “nuclear power can't stop climate change”. This interview references a recent conference reflecting on 50 years of nuclear power which concludes that nuclear power could not grow fast enough to mitigate climate change, even under the best circumstances.⁴

¹ The Cost of Electricity, Pace University Center for Environmental Legal Studies, 1990, Nuclear Power Damages, footnote 39, page 25

² IAEA is a United Nations agency whose mandate is to specifically promote “peaceful” uses of nuclear technology.

³ The Future of Nuclear Power: An Interdisciplinary MIT Study, 2003, Chapter 1, p.3

⁴ The statement was made by an IAEA official in a recent interview with *The Independent* in England 27 June 2004.