

Who Will Blame The Blamers?

The German Chancellor Angela Merkel wanted to scrap nuclear power, but **has decided not to for environmental reasons**.

Why is it that the environmental movement is not being blamed for global warming? They must be the largest single cause, due to their decades-long campaign against nuclear power. (Though perhaps they will soon be the second largest cause, after the desire of Indian and Chinese people not to remain destitute for ever.)

Perhaps it is because the sacred task of blaming people for global warming has been entrusted to the high priests of the environmental movement itself. So who will blame the blamers?

Mon, 07/09/2007 - 00:22 | [digg](#) | [del.icio.us](#) | [permalink](#)

A Good Argument

This would be a good argument if it was not just plain wrong. The main reason why nuclear power plants have not been built is because they were non-competitive in cost with other more cost effective options. Coal-fired plants have been by far the cheapest option in most countries, the only problem being that they're high polluters and the costs of pollution and air quality degradation are not factored into the equation. Clean coal may be an option with new technologies.

Nuclear power however is a great energy option in addition to renewables such as wind and hydro power in many regions when the cost of oil rises above a certain price and cooling water supplies are readily available via large rivers and lakes. We're near that threshold price now and that is why nuclear power plant designers and builders are putting nuclear power plants back on the table.

by a reader on Tue, 07/10/2007 - 15:48 | [reply](#)

Re: A Good Argument

It is not easy to separate the issue of cost from that of environmentalist politics. The emotiveness of radioactivity and nuclear weapons allowed environmentalism to win the political debate at the time. For instance, the accident at Chernobyl in the Soviet Union was used as an argument against Western nuclear

power technology, yet the thousands of coal miners killed in China were never used as an argument against Western coal mining. As a result, governments imposed costs and other obligations on nuclear power that were never imposed on other power sources. That was the means by which nuclear power became 'non-competitive'.

Bear in mind that nuclear power stations were being built at full speed in the 1960s, when oil was far cheaper than now.

by [Editor](#) on Wed, 07/11/2007 - 00:58 | [reply](#)

Plant Factors and Market Considerations

It is certainly correct that power choices are based on a number of complex decisions, some of which have are influenced by public opinion. One of the reasons why nuclear power stations of various designs were built in the 1960s into the 1970s was because of the exciting idea that nuclear power was the energy of the future and this caught the wave of an energy zeitgeist so to speak. That idea impetus in itself was not a bad thing, but required more actual examination and development.

Not all designs were equal although there was a fair amount of technological innovation in nuclear plant design and construction. Some of the early designs were flawed, most apparent in the Russian series designed reactor at Chernobyl where a sudden shutdown could actually cause, and did, a runaway reactor and quick steam buildup leading to a steam explosion exposing the reactor core and materials. Even where there were not major design flaws, downtime and plant inefficiency was often a problem, as well as the fact that there was little design standardization. Nuclear power and improved design has come a long way since then.

High initial capital cost and long lead time to build a nuclear plant is still a major factor in construction decisions. Some costs have been brought down by improvements in design efficiency and it is likely that capital cost will be brought down further by building of multiple plants with the same improved design, also considering that there are several design alternatives. In the United States a major factor in cost of fuel is that spent reactor fuel will not be refined and reused. This choice was a reasonable political decision at least at the time it was made, so as to prevent the proliferation of a fuel source with a potential use for nuclear weapons. (This consideration is resurfacing in the debate about Iran or other countries perhaps much more politically stable than Iran acquiring such fuel sources for peaceful use of nuclear power, but with an option for weapons grade fuel use.) Yet in other countries which already have a viable program of nuclear power, such as France, reuse and refining of spent fuel has not been so problematic, and their fuel costs are thus much more competitive against coal or gas, or oil.

The cost of oil (and natural gas) is increasingly a factor because of the related increase in demand for electric power as oil becomes more costly and less plentiful as an energy option. Until recently, and beginning in the 1970s an abundance of coal and gas fired

plants were easily meeting the energy demands in several countries so that there was little incentive to build new nuclear plants. Their high initial capital cost and uncertainty about future energy demands meant that almost no new construction occurred. An additional factor, still true today, was that the most desirable sites which had ready access to abundant cooling water and other preferable geologic siting were utilized early on.

It is likely that nuclear power today and in the foreseeable future will have a well deserved resurgence as one potential choice for power generation among several complementary options, but will not in itself be a power generation panacea for any country or region.

by a reader on Wed, 07/11/2007 - 03:56 | [reply](#)

The Global Supplies of uranium-238

The global supplies of uranium-238 are such that even continuing with the number of plants we have we have only enough uranium-238 for around 42-72 years of Nuclear power. If 60% of world power was Nuclear we would have enough for about /10-18 years/. This means that it is just impractical to rely on Nuclear for our energy into the future on any large scale.

These estimates are produced with the following sources. European Commission's Green Paper on Energy 2-3 million tonnes. And a more generous estimate (source unknown) 4-5 tonnes. Some people claim that there is around 17 million tonnes available across the globe, this includes things such as sea water. But its safest to work with more conservative estimates.

by Ian Fisher on Wed, 09/12/2007 - 11:05 | [reply](#)

Re: The Global Supplies of uranium-238

Though it is not economic yet to extract uranium from seawater, it can **certainly** be **done**, and the estimate you quote, namely that there are 12-15 million tonnes of uranium there, is too low by orders of magnitude. The figure is in fact over 4 billion tonnes. (The concentration is about **3.3 milligrams per cubic meter** and the volume of the oceans is about **1.3 billion cubic kilometers**.)

However, it is unlikely that we shall ever have to rely on that. On land, elements are not evenly distributed but occur in ores. Ores can be discovered – but that takes effort and money. As a result, the known reserves of valuable ores tend towards a certain multiple of the current rate of use. The exact multiple depends on all sorts of economic and political factors but for obvious reasons it would not be surprising if it were a few decades. Furthermore, controlled nuclear fusion is likely to become economic within a few **decades**, which makes it unrealistic to imagine the world having to rely on uranium for the indefinite future.

Therefore, it is only "safest to work with more conservative

estimates" if one wants a reliable way of raising resource-depletion fears regardless of the truth of the matter. If one wants to plan rationally for the future, it is useless. Assuming that today's 'known reserves' are the only resources that will ever be used has the same logic as estimating that one will starve when the current contents of one's larder have been eaten.

by [Editor](#) on Tue, 12/25/2007 - 21:12 | [reply](#)

Okay. So assume that you're c

Okay. So assume that you're correct on all of that, aside from the fact of Fusion. While I'll accept your statement about the larder, similarly you shouldn't assume scientific advancements. That, to me, is like saying "I won't do anything to help with any problems, because they'll be sorted out in the future"

Some sources say, that the mining of Uranium requires more power than it **generates**. (The source is probably somewhat unreliable, and I apologize on that basis)

The economic figures also tell us that off-shore wind power generates kWh at a similar price to Nuclear, while on-shore rivals coal

Missing

Sorry if the Picture should not have been posted, I am relatively new to the site and not completely familiarized with the rules

by Ian on Tue, 01/15/2008 - 23:06 | [reply](#)

Knowlege and Energy Abundance

"While I'll accept your statement about the larder, similarly you shouldn't assume scientific advancements. That, to me, is like saying "I won't do anything to help with any problems, because they'll be sorted out in the future"

I don't think the editors are saying that we should not try to solve problems. I think they may be disagreeing with you about the means to solve problems.

The best way to solve energy shortages is to generate new knowledge about how to safely produce energy. That is not saying "I won't do anything to help with any problems". Looking for resources creates new knowledge and so creates more resources.

The worst way to solve the problem of energy shortages is to claim that there are only finite resources. That limits us to a finite amount of production in the world economy that then diminishes over time as resources are "used up". Everyone is forced to "conserve"; but it is knowledge that is scarce, not resources. We need to look for knowledge, not the alleged finitude of resources.

If your graphs are correct, then individuals will generate power

utilizing wind. If the growth of knowledge then makes nuclear power more affordable, producers will switch to generating power utilizing nuclear reactors.

The point is there is no need to tell people that there is a finite amount of wind or a finite amount of appropriate uranium. There is no need to stop nuclear power generation if it is too expensive, because of an alleged lack of uranium. If safe nuclear production is too expensive, those producing it will simply not be able to sell it (because their product will cost more!)

Perhaps you are saying that the rate of growth of knowledge about how to efficiently harvest safe energy from the wind is going to be faster than the rate of growth of knowledge about harvesting safe energy from nuclear power. But then you are not saying that we should not use nuclear energy because of a finite amount of uranium, which I think was your point.

Moreover, as long as governments insist on a reasonable degree of safety in producing energy, the market will determine which energy resource is currently cheapest, and I have no doubt that we will utilize that resource.

But we do need to stop frightening people about an alleged lack of energy resources.

by a reader on Thu, 01/17/2008 - 00:13 | [reply](#)

Well, arguably that is, by ex

Well, arguably that is, by extension what I am arguing. Even in my first post, I did not really mean to explicitly imply "We are going to run out of Uranium-238 and there will never be any more!" instead what I was saying, is that the ability to produce cheap Nuclear energy has almost reached it's maximum, especially due to the limited supply of /cheap/ uranium, aka, it may well never really get any cheaper, while I would conclude that Wind Energy is still only just beginning to bud.

Fast breeders could promise cheapening due to less fuel, but infact this would be completely incorrect, as most of the cost of nuclear energy is in the setup and decomissioning a fast breeder's energy would infact cost more, as the reactors are more expensive.

Another intriguing fact is that, in the UK anyway, it might well take 15-20 years to set up the next generation of nuclear facilities.

by Ian on Thu, 01/17/2008 - 01:29 | [reply](#)