NUCLEAR ENERGY ILLUSIONS

Åke Sundström, 2010-08-10, BSRRW.org seminar

Nuclear energy is not cheap, as often claimed. Nor does it produce a better life, more welfare or higher wages. In fact, we would hardly notice it´s disappearance. And it is not needed for sustainability, as the political lingo puts it. That is a short summary of my message.

1. THE WELFARE ILLUSION

Let us start with prices. Electricity produced by coal and nuclear reactors has always carried the same (or a very similar) price tag, and will continue to do so. This *price parity principle* can be illustrated by the familiar fact that two cars of similar size and quality are sold at roughly the same price.

This parity explains why the choice between coal and nuclear power, does NOT affect electricity prices or the standard of living in individual countries. This choice can and should ,therefore be based on an evaluation of environmental impact. Some fortunate states, like Norway, Sweden, Iceland and natural gas countries don´t have to use any of these major alternatives, since they are so richly endowed with other energy resources. In such cases, electricity prices could be cheaper than elsewhere and produce a genuine cost advantage, which is lost as soon as coal or nuclear power is introduced, as in Sweden.

At the *global* level, increased supply from new sources - be it solar, wind or nuclear, may lower fossil energy prices somewhat, which is normally a good thing. *But only if the new alternative, in this case nuclear energy, stands on its own feet, without subsidies. It doesn´t.*

While nuclear energy is not cheaper than coal power, it cannot be more expensive either; it survives only if it can match the price levels set by the market giant, coal, supplemented to some extent by natural gas, which is still being discovered in large volumes.

So it is wrong, with the exceptions just mentioned, to talk about cheap or expensive energy. Some sources, like our best hydro power stations, have low production costs, but their power sells at the same price as coal power. That is how free markets work. Price = MARGINAL cost, not average cost. This VERY basic definition creates a lot of confusion even in our country, branding itself as an advanced, high-tech economy. Then guess than how many misconceptions we find, trying to debate more complicated economic issues.

2. NEVER A COMMERCIAL PRODUCT.

Nuclear energy has always been subsidized d by governments, to a higher or lesser degree. It has not been a part of the of the normal market economy, never introduced by private unsubsidized companies.

The most decisive support, applied in most countries, has been the state guaranties, the promise to pay reactor accident costsabove a certain very low level.
Another type of subsidy is discriminatory energy tax systems. Sweden is an extreme case, with a tax on coal roughly 8 times higher than the tax on electric heating, with nuclear power plants being the major beneficiary.

In Sweden, the nuclear sector has also been favored in many other ways, e g cheap loans (pension fund money).

3. THE GUILT FEELING AND THE LENIN CONNECTION.

If not commercially viable, what set the train in motion in the first place? A mixed bag of circumstances: the US government had to decide what to do with all the highly skilled scientists made redundant when the bomb program was scaled down and finally dropped altogether. The convenient answer: let them build nuclear reactors, producing electricity instead of bombs: that would also reduce the guilt feelings about the destructive forces let loose in this Faustian deal.

Then the train was further pushed ahead, mainly in Europe, by an unhappy inheritance of leninistic thinking, translated into central planning policies. If free market conditions had been in place, very few - if any - reactors would ever have been built.

4. THE RISK/REWARD RATIO

This is a matter of major importance. Nobody questions the high or enormous risks involved in nuclear technologies. The difficult part is to determine the reward side of the equation. For reasons mentioned above (1), the rewards are grossly exaggerated and do clearly not justify the high risks involved. This is in contrast to e. g. cars and trucks, with very strong positive rewards, making the public tolerate (but of course object to) the high death figures on the roads. For nukes no such reward or excuse is available.

When comparing risks it is also important to use proper “weights”, to give more attention to problems more difficult to solve than trivial matterswhich are easy to address and mainly a result of government neglect (e g oil tanker or coal mining accidents). .

5. THE CLIMATE AS A “COMPETITOR”

A non-issue for decades, climate change has quite suddenly become key issue – and the only remaining propaganda weapon for nuclear supporters. Therefore, it is imperative to scrutinize the claims by Al Gore, IPCC and other proponents of the greenhouse horror stories. If this new doctrine is generally accepted, the nuclear sector will flourish. If it can be refuted as false science, the opposite outcome is likely.

And false science it is! A first hint is the so called Climate Scam. More important: an increasing number of independent scientists are beginning to speak up (a few have done so for a decade or more). This will hopefully make people recall the common knowledge just 15 years ago: that the nuclear cycle produces far more serious risks than fossil fuels.

So this is now the decisive political question: can carbon dioxide really be a bigger threat to mankind than nuclear energy? Of course not, given what we know today.

The climate issue also has another dimension: hypocrisy. The political action taken with treaties like Kyoto and similar measures at the EU level do not reduce global emissions by even one ton of CO2, but is more likely to make things worse. The reason? Effective emission controls requires world wide participation, nothing else works. "Going first" is of no avail, just a huge waste of taxpayers money. But it can, of course, deceive of lot of voters.

Compare this madness with all the good results that follow from cleaning up dirty coal power stations or converting electric heating into fuel heating.

6. THE IMPORTANCE OF PRIORITIES

This takes us to the important matter of making priorities. The world faces many problems and we cannot solve them all at the same time. With a more sober look at the climate issue it is difficult to avoid the conclusion that reducing nuclear risk by closing at least the most dangerous installations should be the first priority.

Green parties and organizations have a tendency to demand everything at once. That is not a realistic approach. It is more likely to be counterproductive, as we have seen in the climate debate. By accepting Kyoto, Copenhagen or our Swedish climate policies, you support nuclear energy. That is the unavoidable price for refusing to make – and stick to – sound priorities.

Let us add, than a new generation of reactors might reduce nuclear risks. If so, one is entitled to redo the analysis. My personal guess is that the Faustian shadow-deal will continue to haunt the industry. To beat the devil will not be easy, that's for sure.

7. THE SWEDISH NUCLEAR DISASTER

Next, a few words about a problem I have studied in some depth, the Swedish case. In no country has nuclear decisions resulted in a bigger disaster. All money invested has been lost – and much, much more. This is what my book from 2002 is about.

The proof is solid and you don´t need a masters degree to follow the analysis. It suffices to understand the difference between real profits and nominal profits, real money and thin air. But my conclusions are, of course, political dynamite, so most of my colleagues have been reluctant to comment .

To give a small hint about the subject matter: Our generating capacity is today around 170 TWh, while the free market optimum (with neutral, nondiscriminatory taxes) is somewhere between 110 or 120 TWh. So we have this huge surplus (50-60 TWh), which can be

compared with our nuclear capacity, around 65 TWh. Ergo: most of our reactors should never have been built. In my estimation, none at all.

After over-investing. the mainly government-owned power companies were forced to dump the surplus on to unwilling consumers *at prices around half the cost of production*. That is how 300 billions were lost. The nuclear story is our version of the Concorde debacle. In both cases, we find a deadly combination of political intervention and a failure to distinguish between what is technically possible and what is economically desirable.

8. MANIPULATION, PROSTITUTION AND VESTED INTERESTS

It is understandable, that such a huge failure results in a lot of manipulation. One example: our Statistical Office helped the various governments in charge to tell the public that energy was saved: consumption declined when nuclear energy was used for electric heating.

They used this formula: 1 kWh of oil + 1 kWh electricity = 2 units of energy, while we all know that the true sum, in the only relevant terms of primary energy, is around 4 (since 1 unit of electricity requires 3 units of primary energy).

The civil servants involved were, of course, breaching their loyalty to the public and to objectivity. And the scientific community who accepted this manipulation, was also failing in its moral obligations. So this is a kind of corruption or intellectual prostitution that exists even in developed and relatively decent countries.

But also the vested interests, the federation of Swedish industries and their counterpart, the unions, sold out their basic beliefs in accepting these assumed benefits. True, the losses to the public were translated into gains for the heavy industries, which could for 30 years live on low, subsidized electricity. So the effect was a vast redistribution of income and wealth, to the detriment of all working people.

Intellectual fraud is also the basis for the scaring scenarios about a world running out of energy, the oil to last only some 30 more years and the need for electric cars to replace petroleum. Again, people accepting these false claims are making the anti-nuclear movements an apparent disfavor.

9. POLICY POINTS

My message to nuclear critics would be to bring home the point that nukes are much more dangerous than carbon-dioxide emissions - and to persuade the green movements to set their priorities accordingly.

Secondly, recognize that the basic facts presented here, make it easy to refute most of the claims normally presented by nuclear lobbyists. In the Swedish case, the economic analysis alone suffices as an argument for a quick ending to this shameful era in our recent history.

About the author: economist, retired from government services (ministry of Finance, later Industry, chief executive of a state Committee on Minerals Policy), previously at private

research institute (IUI) and a UN project in Kenya. Books on trade policy and demand analysis. Two publications on energy economics: Vattenkraften – vårt vita guld? (Hydro Power, Our White Gold?) and Kärnkraften har gjort Sverige fattigare (Nuclear energy made Sweden a poorer country). Many articles in Ekonomisk Debatt and other professional magazines plus numerous ones in newspapers, including DN and SvD.