

Interview Mycle Schneider

‘There is no revival of nuclear power’

The renowned nuclear policy consultant Mycle Schneider has come to the conclusion that there is no nuclear revival, that nuclear’s role in energy generation is declining and that it has little relevance as a tool for avoiding CO₂ emissions. For the German-born Frenchman, the challenge is elsewhere: to find new ways for providing energy services intelligently.

| by Hughes Belin

Many people claim there is a revival of nuclear power going on. Why don't you agree with this?

There is an incredible revival in nuclear plans. The facts, however, show a downward trend. In 2007, there was a 2% decline in nuclear electricity generated worldwide and even a 6% drop in the EU, historically the largest decline since nuclear electricity was first produced. Furthermore, the number of countries that have actually increased their share of nuclear power is limited to five (Armenia, Romania, Slovenia, South Africa and Switzerland). Together they operate 11 reactors. Not really representative of a trend. Eleven countries that now operate half of the reactors worldwide, have seen a decline in their share of nuclear electricity generation, including France, Japan and Germany. Most of the big generators are actually in decline, mainly for technical reasons. There is also a decline in absolute numbers: at the beginning of 2009, there were 8 fewer operational reactors than in 2002. The share of nuclear power in worldwide electricity generation is 14% (from total electricity generation in the world in 2007) and we've been observing a steady decline in the role of nuclear power by about 1% per year.

What about the numerous projects under construction?

In early 2009, 44 units were listed by the IAEA as being "under construction" but 11 of these have been listed as such for over 20 years. A large number, over half, have actually registered delays between planned and real start-ups and it's too early to be sure of any details of the remaining plants. If you look at Western Europe, the first EPR project (European Pressurised water Reactor) in Finland is now at least 3 years behind schedule after 3 years of construction. The additional cost amounts to at least 50%, that is 1.5 billion euros over budget. If you look at its French counterpart, Flamanville-3, this started construction a year ago and the ceo of Areva has already stated publicly that the project is one year behind schedule. EDF has actually put out a denial of what the ceo of Areva has said – an unprecedented move. However, EDF later acknowledged that the project was already 20% over budget and the total cost was now estimated to be some 4 billion euros.

Don't you think the technological challenge from 2nd to 3rd generation justifies this?

It's symbolic for the biggest challenge for any kind of future role of nuclear power, which is the skills gap. The "aging



Eon's nuclear power plant at Grohnde, Lower Saxony. Photo by: Kai Senf

workforce" issue is keeping countless ceo's awake at night, a recent Capgemini Report on the nuclear industry stated. Indeed, if you look at a nuclear operator such as EDF, it is considered to have to replace 40% of its operational and maintenance staff by 2015. The baby boom generation comes into retirement age. The problem is that nobody has anticipated it. In the US alone, 26,000 people are to be replaced in the nuclear industry, only for operational facilities, because they are eligible for retirement over the next 10 years. So, talking of big challenges in the industry, even to come up with trained people for currently operating facilities, let alone any new projects, will be a huge task. That is to be added to the problem of manufacturing capacities. There is only one facility in the world right now that can produce pressure vessels for 3rd generation reactors like the EPR. That is Japan Steel Works in Japan. It's kind of ironic that France is building a new reactor and that key parts like pressure vessels and steam generators are actually being manufactured in Japan. Same thing for the project in Finland. So in the foreseeable future there is hardly sufficient production capacity for even currently operating facilities, let alone for a large number of new facilities.

You worked for the European Commission as a nuclear expert on the Lithuanian Energy Strategy. Lithuania wants to build a new nuclear power plant together with Poland, Latvia and Estonia. Is this a realistic plan?

The Baltic plant is a psychological, not an industrial project. The Lithuanians have always wished to find a way to attach themselves to the West. So the grid connection, even if it's just a grid connection to Poland, creates this intrinsic link to the West rather than to Russia. But it is obvious that the nuclear project is totally oversized for a small country like Lithuania. The installed capacity of the two existing Ignalina reactors was more than twice as much as the country needs. They were designed to supply the whole region within the Soviet system. One reactor has already shut down. Did you see any lights go out in Lithuania? Of course not! Nothing will happen if the second reactor is shut off at the end of 2009. Because there is enough generating capacity. The World Bank has put a lot of money into that country in propping up the existing fossil fuel plants. If you look at the power needs in Poland and the Baltic States, there is no need for new capacity in the foreseeable future. And in the current situation, financing will be even more difficult. A nuclear project in this region is not appropriate.



Still, emerging countries like China, India and Brazil are all considering building new nuclear power plants or have started on projects.

It's a long list, yes: the Director General of the IAEA said the Agency had been contacted by 50 countries interested in nuclear technology. But this is not a revival. These are fictitious plans. The problem is that nuclear power has been sold to decision-makers as a solution to the climate change challenge...

And as a solution to the energy crisis...

But there is no energy crisis. Where is the energy crisis?

Well, energy needs are growing and fossil fuel reserves are declining.

No, energy needs do not have to grow. The problem is that energy services are being provided in an unintelligent manner. That is our biggest challenge: to provide energy services in an intelligent way that keeps consumption limited. Often these are win-win strategies. Take day-lighting. Wall-Mart has experienced that daylight stores not only save up to 70% of power, but staff are happier and... people buy more. Unfortunately, no country has yet been able to implement such strategies on a large scale. All the supply-side oriented strategies failed, including the French nuclear strategy and even the German renewable energy strategy, where carbon content per kWh decreases but total CO₂ emissions continue to rise because consumption increases outweigh the clean-up factor. At the same time, there is absolutely no choice. It's not a matter of choosing this strategy or that strategy. There is no single international scenario for cutting down greenhouse gas emissions without a very large component of conservation

measures and efficiency. The striking thing is that there is no action plan with binding sector targets how to curb emissions.

This does not rule out that nuclear could be part of the solution. The problem with nuclear energy is very simple. In order to fight climate change we need solutions that are fast and cheap. But nuclear power is – very – slow and very expensive. So it's not only a problem of nuclear technology. Industry will battle to maintain its role since it is constantly losing market share. In terms of manpower over the next 20 years, it will have to struggle to keep its current number of reactors in operation which means to merely replace the ones that

'Nuclear power is – very – slow and very expensive'

have to be shut down. The role of nuclear energy in energy policy is very limited. It is responsible for less than 6% of commercial primary energy, less than hydropower alone and it is responsible for only around 2% of final energy. The way we talk about nuclear power today is disproportionate to its potential or even theoretical role. Whether it's 2% or 3% or 4% is not going to change the problems we are facing. The problem we are facing today is the remaining 98-97-96%. And there we have to make drastic decisions in order to provide energy services – heat, cold, light, communication, mobility, automotive power, etcetera – in a much more intelligent way than we are doing today. ■

Who is Mycle Schneider?

Between 1983 and April 2003, independent consultant Mycle Schneider was executive director of the energy information service WISE-Paris and chief editor of the website Plutonium Investigation. Since 2004 he has been in charge of the Environment and Energy Strategies Lecture at the French Ecole des Mines in Nantes. In 2007 he was appointed to the International Panel on Fissile Materials (IPFM), based at Princeton University and he joined the Independent Group of Scientific Experts (IGSE) on the detection of clandestine materials that can be used for the production of nuclear weapons. His numerous publications cover nuclear proliferation, security and safety, as well as environmental and energy planning issues. In 1997 he was awarded the Right Livelihood Award ("Alternative Nobel Prize") together with Jinzaburo Takagi for their work on plutonium issues.



Photo by: rightlivelihood.org