France: A Timid Boost For Nuclear Energy

by Emmanuel Grenier

France has finally decided to stay on the nuclear track. It would be exaggerated, however, to speak of a "fresh start," as many commentators have done. We do, of course, welcome the decision to build the first EPR (European Pressurized Reactor), the "third generation" French-German reactor, because it shows that France is not about to follow the German lead, by giving up nuclear energy. But this is a far cry from the Messmer Plan of 1973 (named after the then-Prime Minister), with its plans for building up to four plants per year. The EPR features significant advances over current reactors, in terms of safety, competitiveness, waste reduction, and optimal radiation protection for the staff. But this is more of an evolution than a revolution.

Meanwhile, Nicolas Sarkozy, the French minister for the Economy, Finance, and Industry, announced on Nov. 10 the decision to increase the floating bond capital of the AREVA group, in which the state is now, directly or indirectly, the majority shareholder with an 87% stake. AREVA is the builder of the EPR, having bought the nuclear entities of Siemens and Framatome, which were involved in the cooperative design of the reactor. The AREVA group's listed share, currently at 4%, will eventually be between 35 and 40%, and the state will hold, directly or indirectly, more than 50% of the group's capital. Trade unions and left parties have voiced their opposition to Sarkozy's privatizing measure, which is considered purely ideological.

Pierre Gadonneix, the new chairman of the former national electricity company, EDF, stated that launching the EPR will "help guarantee energy independence for Europe over the coming decades," and that it should allow EDF, over the long run, to renew its means of production in a competitive way: "EDF's technological lead will be consolidated and this will be a technological showcase for export markets." His company intends to "remain the leading producer of nuclear energy worldwide." French Prime Minister Jean-Pierre Raffarin stressed how serious the issue is, by stating it had been "one of the most important decisions I have had to make, since I became Prime Minister."

Even the major newspaper from the west of France, *Ouest-France,* which had previously led the battle against a nuclear plant in Plogoff, in Britanny, had to admit that the nuclear option has won out: "In a word, nuclear energy is no longer the spook box it was in the 70s and 80s. A large majority of Frenchmen are for it. Because it works, because it sup-

plies 80% of our electricity. The fact that the nuclear [plant] has been working with no major problem for 20 years now speaks volumes more than any speeches. That is the best argument for warding off insinuations, dissipating fears and reassuring people." Although the Greens protested this decision, their protest was really only formal. The stop-nuclear energy network (Sortir du Nucleaire) has become quite marginal, and no more than a few hundred people came to the demonstrations they organized against the EPR.

The anti-nuclear ideology will probably be remembered as the ideology of the generation of baby boomers and 68ers who never experienced a shortage of power. And it will probably enter into the garbage cans of history when that generation reaches retirement.

Rethinking the Nuclear Strategy

France, of course, is not the only country which is faced with such decisions. Sweden, which became the very symbol of the no-to-nuclear trend after a referendum in 1980, is slowly reversing that trend. Now, 64% of the Swedish population is against the take-down of the 12 nuclear reactors implemented by the Social-Democratic government and their Green allies, as opposed to 55% last year! And among Social-Democratic voters, this percentage soars to 71%. Eight years after deregulating the electricity market in Sweden, consumers have been hit with a 50% average increase in the kilowatt-hour price and are worried about the impact of plant closures on their bills.

Brazil and Iran are tenaciously defending their right to develop peaceful nuclear energy, in spite of international pressure. At the Tenth Brazilian Energy Congress, held on Oct. 28 in Rio de Janeiro, several speakers confirmed this position. "I defend nuclear power because we need it for our development," stated the head of the National Nuclear Energy Commission (CNEN), Alfredo Tranjan Filho. He explained that the Lula government is renewing the nuclear program developed in the 1970s, which includes a third nuclear plant, ANGRA III.

Nuclear plants now provide 4.5% of the total electricity produced in Brazil, with about 90% coming from hydroelectric plants. The 2001 drought caused a severe energy crisis, giving new arguments to supporters of the nuclear option. As Brazil plans to double its production in the next 16 years, nuclear power could play a major role, accounting for up to 25% of total power production. The Brazilians also hope to be self-sufficient in enriched uranium by 2010, thanks to an original centrifuge technology developed by Brazilian scientists, which consumes much less energy than conventional enrichment technologies.

Finally, there is also a comeback for nuclear power in the United States. Last year, the U.S. Senate voted up measures to allow construction of new plants. And in late September, several consortia (Exelon, Entergy, and Dominion Resources) initiated a procedure with the Nuclear Regulatory Commission to obtain authorization for the construction of new units. The 103 existing U.S. plants, spread out over 65 sites, are not sufficient to cover a constantly increasing demand for electricity. Moreover, nuclear power is a choice solution for reducing energy dependency on oil.

This argument is used all over the world. Indeed, most developing countries dream of being able to follow the example of Iran or Brazil, but they don't all have the same courage; many fear the "Iraq treatment," should they dare go against the veto on development of nuclear energy begun by the United States under Jimmy Carter. Thus, nuclear power is being held back, just as the world needs it more than ever.

The World Should Go Nuclear!

The demand for energy worldwide is expected to increase by 60% by 2030, according to the International Energy Agency (IEA), which published its annual report on Oct. 27.

Nuclear energy is the best way to meet this increase. Although natural gas will probably continue to do extremely well (consumption is expected to double by 2030), it can no longer be touted as the miracle remedy the ecologists used to claim. Given recent price increases, the price of a kWh of electricity produced by gas is almost as high as that of a kWh of wind power (which is both expensive and unreliable).

In these conditions, the tremendous energy density flow of nuclear power and the economic efficiency it allows, are strong incentives for going nuclear. Nevertheless, the IEA forecasts that, from 2010 on, it will provide less and less of the total electricity produced worldwide, accounting for only about 5% in the year 2030. This forecast, of course, is based on political decisions to phase out nuclear, such as in Germany and Sweden, which can easily be overturned, as we have seen.

The Chinese factor could also upset the applecart: If China opts for an energy infrastructure policy similar to that of the French, as is being proposed, and if it begins mass-production of modular nuclear plants, nuclear energy will grow by leaps and bounds.

In addition, worldwide needs are nowhere near being met. According to IEA estimates, even if the demand for electricity doubles by 2030, 1.4 billion people will still be left without electricity, as compared to 1.6 billion in 2002. Moreover, nuclear power produces hydrogen, which seems to be the only fuel capable of replacing oil on a large scale, in hydrogen-powered vehicles that are non-polluting. The IEA has not taken this factor into account at all, although the world will probably need, at some point, hundreds, if not thousands, of new power plants to produce the fuel of the future and free the world from the "oil only" dictatorship.

Given this background, the timid comeback of nuclear power in France, with the EPR reactor, is in no way sufficient to meet such needs.

The author is editor-in-chief of the French magazine Fusion.