

German power options: Lack of clarity will be costly

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The German environment minister Norbert Röttgen (CDU) revived the German debate about the future of nuclear power in February when he argued for a limited lifetime extension of Germany's nuclear plants. His statements created much dissent in his own party and with the coalition partner FDP. The government will not take a formal decision before the autumn, but the contradicting messages from inside the government send highly ambiguous signals to electricity utilities with investment plans in Germany. What does the German government want the companies to do?

Back in 2000, the centre-left Schröder government decided to phase-out all German nuclear power plants by around 2022. In an agreement with the operators of nuclear plants, fixed quantities of electricity production were agreed for every plant, based on the assumption that a nuclear plant has a lifetime of 32 years. This decision put Germany on a *Sonderweg*, as many European countries are currently moving to expand the role of nuclear.

Most members of Germany's industrial establishment never liked the phase-out decision. On the political side, chancellor Merkel's Christian-Democrats (CDU) and vice-chancellor Westerwelle's Free Democrats (FDP) have always criticized the decision taken in 2000 by the SPD and the Greens. Hence it was no surprise that CDU, CSU and FDP announced in their coalition agreement of October 2009 the start of negotiations with operators about lifetime extensions for the 17 reactors currently working in Germany. Since then, they have avoided public statements on the issue. It was commonly understood that the federal government would not decide about the question before the crucial regional elections in May 2010 in Germany's largest State, North Rhine-Westphalia, fearing that any decision to extend the lifetime of nuclear plants might cost the ruling parties votes. Instead, the government announced a comprehensive energy strategy for autumn 2010, which would include a decision on lifetime extensions for nuclear plants.

But in early February, minister Röttgen brought the nuclear issue back to the heart of German political debate. In an interview with the *Süddeutsche Zeitung*, he made two main points:

- Germany should stop using nuclear power at the point when renewable energies produce 40% of German electricity.
- German nuclear power plants are designed for a lifetime of 40 years, i.e. the last plant should close down in 2030. Extensions beyond 40 years are not feasible.

These statements go much further into the details of a possible lifetime extension than the coalition agreement. Röttgen's skeptical position on nuclear energy was immediately criticized by politicians from his own party and from the coalition partner FDP. His opponents argue that German nuclear plants are among the safest in the world and could easily run for 60 years. They can underline their claim by pointing to the U.S., where a consensus is emerging that nuclear plants can run for 80 years.

But it is especially Röttgen's first point which is a surprising new element in the debate. His 40% condition stems from the current energy mix of German electricity production: in 2009, 23% of electricity came from nuclear and 16% from renewables. Taken together, both sources account for roughly 40%. The other main sources were lignite (24%), hard coal (18%) and natural gas (13%). In essence, Röttgen proposes to make the closing dates of German nuclear plants dependent on the speed at which production from renewable energies grows. If applied, the condition would send a very ambiguous message to the utilities: if you want to use your nuclear plants a bit longer, then please do not invest in renewables. Hence, Röttgen's proposal adds to the already contradicting investment signals sent to German power companies. The German Energy Agency (dena) has, for several years now, alerted the public to the danger of underinvestment as a consequence of these contradictions. The government should take the agency's warnings very seriously.

The idea of narrowly linking the nuclear phase-out to the evolution of renewables has led to an interesting debate in the German energy sector. The German Renewable Energy Federation (BEE) used Röttgen's statement to claim that by 2020, renewable energies could account for 47% of German electricity production if – and that is a big if – the “political framework” was favorable (i.e. high feed-in tariffs in place). The official goal in the German Law on renewable energies is to reach “at least 30%” by 2020. Following Röttgen's interview, the German Association of Energy Industries (BDEW) said that reaching 30% by 2020 was achievable, but an already very ambitious goal. The ministry for the environment predicted a share of 35% for renewable energies in its latest scenario for German electricity production in 2020.

There is reason to believe that Röttgen's move is more the result of political strategy and personal ambitions than real anti-nuclear conviction. In a book published in February 2009 – when he aspired to the office of minister of economics – Röttgen wrote that the German decision to phase out nuclear energy was “ignorant and dangerous”. His sudden change of opinion is, to say the least, notable. Some analyze it as an attempt to reach out to the Greens, which could become the CDU's coalition partner in North Rhine-Westphalia, and one day even at the federal level.

Turning from political strategy to the realities of the energy sector, one must ask about the real and readily available alternatives to nuclear power. Renewable energies have seen an impressive development in recent years. But one should not underestimate the costs and technological challenges linked to their further growth. The German government now seems to recognize that the cost of subsidizing renewables has reached unbearable levels. The subsidies under the Renewable Energies Law have indeed risen from €3.6bn in 2004 to €10.1bn in 2009, which means that an average family pays a premium of around €100 per year for the development of renewables. In this context, the decision to cut the feed-in tariff for photovoltaic solar power by 25% in 2010 is a step in the right direction. Of course, Germany should continue to develop and subsidize renewable energies: the future belongs to renewables. But if the cost of subsidizing continues to increase so massively, German tax payers will soon lose their appetite for renewable energies.

Coal and gas remain the only available alternatives for secure and competitive electricity production if the nuclear phase-out is maintained. But there is a clear contradiction between the ambitious German goals to reduce greenhouse gas emissions and the implicit decision to phase out nuclear long before coal. Keeping nuclear a bit longer as a virtually carbonless source of base-load power and phasing out the heavily emitting lignite first would avoid millions of tons of CO₂. If emissions reduction is to become the top priority in German energy policy, then the phase-out of coal must precede the phase-out of nuclear.

Stretching Germany's nuclear program at least until 2040 indeed seems to be the only solution if the German government wants to honor its emissions reduction targets and to keep the price of electricity at a competitive level. Unfortunately, it is very difficult to explain this fact to the German public. In order to avoid unpopularity with the electorate, chancellor Merkel will probably only agree to a more limited lifetime extension. This, however, would leave companies with a continued lack of clear investment signals. If Germany's energy policy remains as contradictory as it is today, German energy consumers will suffer from a heavy burden: very high electricity prices in the future.