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Credit FAQ:

Japan's Nuclear Crisis Could Have Lasting Effects For European Nuclear Operators

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(Editor's Note: This is one in a series of articles on the credit impact of the March 11 earthquake and tsunami in Japan.)

The nuclear crisis unfolding in Japan following last Friday's earthquake and tsunami could have far-reaching consequences for European nuclear operators and electricity markets overall, in Standard & Poor's Ratings Services view. The ongoing incident at Fukushima, the nuclear plant where reactors are at risk, could potentially be a game-changing event for European power markets and the companies that operate within them, in our opinion.

This follows a decision by the German government to shut down the seven oldest of the country's 17 nuclear power plants in response to the incident in Japan in a three-month moratorium on a recently agreed extension to the operating lives of Germany's nuclear power plants. EU member states this week also agreed to hold earthquake stress tests of nuclear plants across the region. We are not aware of any immediate actions taken on existing nuclear power plants in other European countries, but understand that several countries are reconsidering or suspending plans to build new nuclear capacity or grant lifetime extensions.

The largest rated operators in Europe with nuclear capacity include Electricite de France S.A. (A+/Stable/A-1), E.ON AG (A/Stable/A-1), Vattenfall AB (A/Negative/A-1), RWE AG (A/Negative/A-1), GDF SUEZ S.A. (A/Stable/A-1), EnBW Energie Baden-Wuerttemberg AG (A-/Negative/A-2), Fortum Oyj (A/Stable/A-1); and CEZ a.s. (A-/Stable/--) (see table 1).

Table 1

Selected European nuclear operators			
	Total installed capacity (GW)	Installed capacity nuclear (GW)	Nuclear production (TWh)
EDF S.A.*	143.0	77.0	466.0
GDF Suez S.A.*	73.4	11.7	47.4
E.ON AG¶	68.5	11.3	72.0
RWE AG¶	52.2	6.3	45.2
Vattenfall AB¶	39.8	9.0	43.6
EnBW AG¶	15.5	4.9	N.A.
CEZ a.s.¶	15.0	3.9	28.0
Fortum Oyj¶	9.7	3.2	22.0

*Figures for 2009. ¶Figures for 2010. GW--Gigawatts. TWh--Terrawatt-hours.

We see near-term consequences as limited for the credit quality of European nuclear operators in general, but slightly negative for Germany-based operators. We believe short-term negative effects are limited to potential losses on hedging arrangements and thinner generation margins for the German nuclear operators in 2011. This is because companies are almost fully hedged at levels lower than current power prices, and because they might have to either buy or produce electricity that is more expensive than nuclear production taken out of operation. For non-nuclear power generators in deregulated markets, we expect the impact to remain limited in the near term because most companies are fully hedged for 2011.

However, the medium- and long-term consequences could be more widespread, we believe, depending on what repercussions the disaster in Japan has on European energy policies in general and on nuclear power in particular.

Nevertheless, we currently believe that negative credit implications will be limited in the medium term because we think the nuclear operators will be able to offset potential losses--stemming either from an early retirement of nuclear capacity or from the rising costs of safety measures or special taxes--with rising power prices and generation spreads. We note, however, that political and systemic risks on nuclear operators are mounting, and the consequences and effects are still difficult to assess at this early stage.

Below, we answer questions from market participants about the potential credit implications for rated power utilities in Europe.

Frequently Asked Questions

How significant is nuclear energy to security of supply in Europe and to EU climate change goals?

Nuclear energy plays an important role in European electricity supply, representing about 29% of European electricity generation in 2008, according to Eurostat. In some countries it is even more vital; for example, nuclear represented 83% of electricity production in France in 2008 and nuclear is also an important primary production source in Germany, Sweden, Finland, Belgium, Hungary, and the Czech Republic. What's more, because nuclear is emissions-free, it's also central to meeting the Europe's ambitious climate change goals and the move toward a low-carbon economy, which include a target to reduce greenhouse gas emissions from all primary energy sources by 20% by 2020 compared with 1990 levels.

However, we note that nuclear is also a controversial generation source, mainly due to safety concerns, as highlighted by the Fukushima incident, but also due to misgivings regarding the handling of spent fuel rods.

What consequences could heightened nuclear opposition have for European nuclear operators in the wake of events in Japan?

We believe the incident in Japan is likely to reduce public acceptance of nuclear power and possibly hamper the recent revival of new nuclear power currently planned or being considered across Europe. In countries where nuclear opposition has historically been strong, such as in Germany, we believe that it could lead to significant changes to existing nuclear fleets. This week, for example, German Chancellor Angela Merkel announced a three-month moratorium on the recent agreement on nuclear plant life extensions that came into effect in 2011. She's also said that seven reactors built before 1980 will be halted for safety reviews that are expected to run through June.

The incident at Fukushima also raises the probability that it will become more costly for power generators to operate and oversee existing nuclear plants located in Europe. Although we understand safety standards are already high, we believe companies might have to make incremental investments to meet any possible stricter standards imposed by regulators. This could include passive safety features such as back-up systems that don't require operator actions or rely on electricity, which would add to the cost burden of existing nuclear operators and to the total bill for new plants to be built. What's more, nuclear operators would have to absorb any potential mandated costs at a time when power prices have been low, which would further squeeze cash flows.

Would a lower contribution from nuclear power lead to higher power prices?

If a portion of Europe's nuclear base-load capacity--that is, its generation capacity producing at a constant rate to meet continuous energy demand--was to become idle, we think European power prices, at least in deregulated

markets such as Germany and Scandinavia would be likely to rise from recent low levels. In fact, future power prices on the German power exchange have already risen by 10%-15%. This is because of market reaction to a likely decrease of the reserve margin (surplus generation capacity compared with normal peak demand) and because the demand and cost of alternative fuels are also rising. The price-setting plant--that is, the variable cost of the fuel, including CO2 costs, of the last power plant brought online to meet demand--is likely to be a less efficient and therefore more costly producer, which theoretically should increase power prices and generation spreads for most generators.

However, we anticipate that costs would also rise as an effect of potential nuclear unavailability. Fossil-fueled electricity production would likely replace nuclear, which would increase demand for gas and coal, as well as for CO2 emission allowances. This could mitigate some of the positive effects from rising electricity prices on generation margins for fossil-fueled plants, but would, at the same time, benefit existing hydro and nuclear operators whose costs are not influenced by rising commodity prices or CO2.

Are there other ways that European nuclear operators could recoup potentially higher costs of nuclear generation?

For nuclear operators with significant gas wholesale operations, a potential rise in gas prices could provide much needed relief. European gas wholesale operations are largely challenged at present by the decoupling of oil and gas prices because a significant share of imported gas is purchased under oil-indexed linked long-term contracts. In many cases, gas is now sold in Europe with negative margins. If gas prices were to rise on the back of increased demand from electricity generators, however, this could lessen the pressure on gas wholesale margins, in our view.

What could be the credit consequences to European nuclear operators of a policy move away from nuclear energy?

Barring any significant effects from the earthquake on the global economic recovery, we see the effects on rated European nuclear operators as neutral for now. In a worst-case scenario, German nuclear operators E.ON, RWE, EnBW, and Vattenfall could remain burdened by rising safety costs and the nuclear fuel rod tax in coming years, without benefitting from nuclear life extensions. The German government imposed this tax when it took the controversial step last year of prolonging the lives of nuclear power stations by an average of 12 years, which it said aimed to secure the supply of affordable electricity while Germany converts to renewable sources of energy.

Nevertheless, we believe the nuclear operators should be able to mitigate this by benefitting from higher wholesale power prices and through rising generation spreads, as well as potentially rising gas prices stemming from incremental demand for fossil-fuel generation capacity. In addition, for German nuclear operators, we note that fewer fuel rods would be used if nuclear life extensions are not granted, thereby reducing the tax burden from earlier estimates. We also believe that rated companies will be willing to adjust investment and dividend levels in the short term to mitigate any negative effects on cash flows.

In the longer view, we think any decision to restrict the contribution of nuclear to the European energy supply mix could lead to even greater investment needs in renewable energy sources, mainly wind and hydro, if politicians wish to meet their climate targets. Companies with a large contribution from nuclear would then also have to consider accelerating investment plans to replace phased-out capacity. This, we believe, could put pressure on the profitability of many of the large incumbents because a significant portion of earnings currently comes from low-cost nuclear production.

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