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Capgemini European Energy Markets Observatory (EEMO): Nuclear Development to Continue Despite Fukushima Accident

Arab Spring and Nuclear related decisions Contribute to Worrying Decline in European Energy Security of Supply

Paris, October 26, 2011 – Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, supported by Société Générale Global Research, CMS Bureau Francis Lefebvre and VaasaETT[1], today announced the results of the thirteenth edition of the European Energy Markets Observatory (EEMO) report. Findings show that although the Japanese Fukushima accident is leading to existing plants stress tests conducted by Regulators, delays in new reactor construction projects and nuclear phase-outs in some countries, global nuclear energy development is still set to continue. The report also finds that energy consumption growth in developing countries, the Fukushima accident – together with the slowing down of the needed investments made by Utilities[2] will have negative consequences in Europe on the security of energy supply and greenhouse gas emissions. The report shows that in the longer term one can expect increased energy prices and even more severe consequences on supplies if regulators and governments don't set the right framework to encourage investments of €1.1 trillion by 2020 in the EU. However, as in 2009, these issues may be mitigated by a second economic slowdown that would lead to decreased electricity and gas consumptions.

The nuclear development should continue

Following the Fukushima reactor accident, governments in all countries around the world decided to launch, in a coordinated way, safety inspections for their existing and future plants. It is too early to assess precisely the number of existing reactors that will successfully pass the 'safety stress tests' and

1 VaasaETT Global Energy Think-Tank is an academic organization for energy experts
2 Utilities are committed to deliver electricity, gas, water and environmental services to end customers

comply with requested design and operating mode changes. However, except for German and perhaps Japanese reactors, it appears likely that the vast majority will be allowed to continue operations.

Since the accident, Italy and Switzerland imposed a moratorium on nuclear and Germany took the decision to stop its seven oldest nuclear reactors and not restart its Kruemmel[3] reactor. The country also decided to phase out, between 2015 and 2022, its remaining nine reactors. However many countries and regions such as China, South Korea, Russia, the Middle East, UK, France, Czech Republic confirmed their commitment to nuclear energy.

More than three quarters of the 62 reactors under construction are in Asia (28 are in China, 5 in India, 5 in South Korea and 2 in Japan) and in Russia (10). These countries are facing high energy needs and except perhaps for Japan, should continue construction. In addition the United Arab Emirates, other Middle East countries and "smaller" nuclear countries[4] have announced that they will go forward with their new constructions. On this basis, the report concludes that the majority of all nuclear reactors under construction will be completed.

Security of supply

The immediate closure of some of Germany's nuclear plants is threatening European electricity security of supply. Following its reactors shut-downs Germany started to import electricity from its neighbors, including more than 2,000MW per day from France that had availability capacity owing to the strong performance of its nuclear plants. However during the winter electricity peak, France imports electricity mainly from Germany but this will be no longer possible in the coming years. There is thus a real threat in some countries in "keeping the lights on" for winter 2011/2012, and future winters as the electricity peak demand is increasing year on year – last year's growth in Germany was +9.5 per cent and +4.7 per cent in France.

In 2010, the EU imported 113 bcm (billion cubic meters) by pipe from Russia, representing 33 per cent of total gas imports. In 2030 gas flowing through Gazprom[5] pipelines should amount to 50 per cent of all European gas supplies which is a worry for the gas security of supply. In addition, Germany's decision to phase out nuclear power over the next decade should increase Europe's reliance on Russian

[3] Following technical issues this reactor (near Hamburg) was stopped since 2007
[4] Argentina, Brazil, South Africa …
[5] Russian company specialized in production, processing and transport of natural gas

gas as illustrated by the German RWE[6] and Russian Gazprom mid July 2011 deal to secure additional competitive gas supply to RWE.

A changing energy mix

The report also shows the energy mix should evolve after the Fukushima accident. This conclusion is also shared by IEA[7]. It forecasts that,worldwide gas consumption should grow by 50 per cent during 2011 – 2035 and its energy market share should reach 25 per cent – from 21 per cent today – only slightly lower than oil (27 per cent). Fukushima accident consequences should also boost the development of renewables, however because of its lower cost, gas should benefit more. To reach a 20 per cent renewable share in the end energy consumption, Member States, governments and regulators should consider bold moves like in the UK. Facing £110 billion of investments in electricity needs only by 2020 and CO_2 reductions tough objectives, the UK parliament adopted in July 2011 the "Planning our electricity future" White Paper. It includes a carbon price floor, new long term contracts to provide stable financial incentives for investment in low-carbon electricity generation, an emissions performance standard so that no new non-CCS[8] coal-fired power stations are built, and a power capacity markets mechanism.

Colette Lewiner, Global Leader Energy, Utilities & Chemicals, Capgemini, comments: *"Growing energy consumption combined with global events in 2011 and insufficient investments have created an energy environment in Europe of decreased short and long term security of supply, a likely increase in emissions owing to reduced nuclear output and a likely growth of energy prices. Although a second economic crisis might delay these negative effects, the longer term impact will be difficult to face as we struggle to curb the planet's temperature rise and 'keep the lights on' for future generations".*

For a copy of the abstract report, please visit: http://www.capgemini.com/eemo

About the Capgemini European Energy Markets Observatory (EEMO)

Capgemini's European Energy Markets Observatory (EEMO) is an annual report that tracks the progress in establishing an open and competitive electricity and gas market in EU-27 (+ Norway and Switzerland) as well as the progress on the EU Climate-Energy package objectives. The 13th edition is built on a majority of public data sources combined with Capgemini methodology and knowledge, and based on **2010 and winter 2010/2011** data sets. Specific insights on the European energy policy; the financial situation of Utilities and the performance of the sector; and the switching and retail prices are brought by CMS Bureau Francis Lefebvre, Société Générale Global Research and VaasaETT respectively.

[6] German Utility
[7] International Energy Agency
[8] CCS : Carbon Capture and Storage

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