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Capgemini Launches the Ninth Edition of European Energy Markets Observatory (EEMO) Report

Security of Supply, Environmental Challenges and Retail Price Increases are Amongst the Many Issues Faced by the European Electricity and Gas Markets According to new Capgemini Report

Paris, France, November 12, 2007 – Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, today announced the results of its ninth edition European Energy Markets Observatory (EEMO) report. After the full implementation of the first two EU Directives, will the Third package solve these issues[1].

The results highlight significant security of supply issues which are impacting the European energy markets including, the security of future electricity supply in relation to Europe's CO_2 emission targets, the security of the supply of European gas being threatened by a clash between Russian and European Union's strategies and little progress towards fully fluid and competitive markets.

Will the new "Unbundling" EC package be more effective than the previous Directives?

By assessing the results of the two first Directives, the reports analyses whether the new "Unbundling" European commission package, will be effective at creating fluid and competitive European energy markets. The report finds that with a few exceptions, all EU Member States that have opened their electricity market to competition for more than three years are facing above EU average electricity retail prices. Therefore, the question remains as to whether a 3rd Directive will improve competition in Europe as there are no observed results on price decrease from the two previous Directives. Capgemini advises that other measures such as simplifying administrative procedures to decrease investors risk, providing financial incentives (notably; through adequate tariffs) to enable investment in interconnection electrical lines and pipelines, and extending new transmission and wholesale exchanges management schemes need to be implemented in order to reap tangible benefits.

[1] September 19, 2007 European Commission proposals

Colette Lewiner, Energy, Utilities and Chemicals Global Sector Leader at Capgemini believes that; *"Any proposal must guarantee electricity and gas security of supply and unbundling is in itself not sufficient to create a fully fluid European market."*

Is improvement in the security of electricity supply compatible with EU CO_2 emissions reduction targets?
The report shows an improvement in the security of electricity supply in Europe but, progress seems incompatible with the EU CO_2 emissions reduction targets. On the positive side, in 2006, Utilities have continued to invest in new power plants to meet the increase in electricity consumption however, the situation is much less rosy when comparing these projections to the EU Climate Change 2020 objectives as 81% of the intended new plants will use fossil fuels thus, increasing the CO_2 emission volumes. Capgemini advises that in order for future investments in new power plants to be consistent with European Climate Change objectives, EU, National Governments and Utilities companies need to realign their policies.

Is gas security of supply threatened?
Finally, the Capgemini EEMO report warns that the security of the gas supply is being threatened by a clash between Russian and EU strategies. The EU, in its ownership unbundling measures published in September 2007, has included a "reciprocity" clause. This would prevent foreign investors, including Russian companies, from taking over European gas and electricity transportation assets, thus responding to fears that Gazprom might grow to dominate these EU networks as it is already controlling an increasing number of gas pipelines entering into the EU. However, as the unbundling measures are aimed at giving easier market access to the new retailer entrants, it could even help Gazprom in its strategy aimed at dominating the end to end gas value chain. With divergent strategies, one can easily predict that the EU/Russia battle for gas supply and value chain control is only beginning.

Commenting on the report, Colette Lewiner said, *"The report highlights the fact that in 2006 and 2007, security of supply remains of concern and that investment in infrastructure needs to be boosted in coherence with the new environmental targets set by the EU. The latter will be difficult to meet without strong political support, stringent National Allocation Plan and a long term scheme for* CO_2 *emissions rights,"* She concludes that; "*Many of the key players across the sector need to change in line with the present tense oil supply situation and the new regulatory and competitive environment, by optimising their asset portfolio, adapting their client relationships and fully implementing new energy and information technologies."*

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

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With 1 billion euros revenue in 2006 and 8,000+ dedicated consultants engaged in Energy, Utilities and Chemicals projects across Europe, North America and Asia Pacific, Capgemini's Energy, Utilities & Chemicals Global Sector serves the business consulting and information technology needs of many of the world’s largest players of this industry.

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Appendix 1

The new "Unbundling" European commission package[2] is aimed at creating a fluid and competitive European energy market: Will it be more effective than the previous Directives?

With a few exceptions[3], all EU states having opened their electricity market to competition for more than three years are facing above EU average electricity retail prices, says a new report[4] by Capgemini.

The new Capgemini EEMO report shows a staggering range of electricity retail prices, for the residential segment, from €0.06 to almost €0.20/kWh with the cheapest prices in Poland, France, Finland and Spain. The most expensive electricity is in Norway, Ireland, the Netherlands and Germany. These are also countries that have experienced three to seven years of fully competitive market and that had the highest average residential prices one year ago. The report also finds that residents in Germany, Denmark, Ireland and the Netherlands also experience the highest prices for gas.

One could therefore wonder if a 3rd Directive will improve competition in Europe as there are no real tangible results on price decrease from the two previous Directives. This evidence suggests that correlation between degree of market opening and level of prices is not consistent. This demonstrates that other factors such as regulated tariffs or subsidies, and energy generation mix remain prominent in the formation of energy prices.

On the wholesale electricity market, the new Capgemini EEMO report highlights some positive steps towards a European electricity market. Power exchanges continued to grow in terms of volumes traded and "product" diversification:

- In 2006, the traded volume of European power increased by 19%, which set a new record of 4,509 TWh;
- Now, there are 11 power exchange operators that serve the West European market, with two new exchanges in 2006: Belpex (Belgium) and OMIP (Portugal/Spain);
- The trilateral market coupling of Belpex (France, Belgium and the Netherlands) optimizes cross-border inter-connector capacity by allocating day-ahead border capacities using the three countries' power exchanges at the same time, leading to somewhat harmonized prices. This is expected to be extended to the Nordic regions, the UK and Germany as reinforcement of interconnections is made, and as French Powernext and German EEX power exchanges move towards a consolidation.

Unfortunately, even if European TSOs have engaged in increased domestic investments for transmission infrastructures, there are no noticeable improvements in 2006 of interconnections or in the removal of bottlenecks at priority interconnections, making a single European energy market still far away.

In order to accelerate the pace, the EU Commission announced on September 19, 2007 a new legislative framework draft aimed at unbundling transmission system operators from the incumbent Utilities. Based on Capgemini's worldwide experience,

- There are only two sustained models that are applicable for this market and both need research and consideration: ITSO (Independent Transmission System Operators) or deep ISO (Independent System Operators);
- There are key differences between the gas and electricity markets in Europe. Importations notably from Russia are of paramount importance for the security of gas supply. In this respect, the confrontation of the European unbundling models with Gazprom "super-bundling" strategy could create additional tensions.

Colette Lewiner, Energy, Utilities and Chemicals Global Sector Leader at Capgemini, said: "*As our report shows, while the wholesale electricity and gas prices tend to converge in Europe, that is not at all the case for retail prices. In addition, there are no clear correlations between market opening and price level. Market deregulations are by far not the only factor accountable for the price formation in electricity and in gas, and unbundling claimed by the EC is not the only measure to increase competition in the European electricity and gas sectors.*"

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[2] On September 19th 2007, the European Commission issued a new energy package aimed at "ensuring that all European citizens can take advantage of the numerous benefits provided by a truly competitive energy market".
[3] Finland and Spain are the 2 EU Member States having opened their electricity markets for more than 3 years and reporting below EU-25 average electricity price for residential clients. Average EU-25 price = 120€/MWh without tax; based on Eurostat January 2007 statistics.
[4] 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 the 25 European countries. This 9th edition – built from public data sources combined with Capgemini methodology and knowledge – is based on 2006 and winter 2006/07 data sets

Appendix 2

Electricity security of supply improvements seem incompatible with the EU CO_2 emissions reduction targets

In 2006, Utilities have continued to invest in plants and the real generation margin has improved, but the new plants will use fossil fuels thus increasing the CO_2 emission volume, according to the new EEMO by Capgemini

Whilst last year's report alerted that the electricity security of supply in Europe was threatened and that €700 billion needed to be invested in new power plants during the next 25 years, the new report shows that investments in infrastructures growth evidenced in 2005 is confirming in 2006 (+2.2% of generation capacity from 2005 to 2006).

Planned projects for generation plants across the 25 EU States amount to a total capacity of 190 GW, while the total capacity of projects with applied permits equals 165 GW. According to the UCTE[5] conservative scenario, the generation capacity adequacy should not be at risk before 2014-2015.

The European peak load capacity increased by 1.7% from 2005 over 2006. This modest increase linked to the mild winter and the continued investments in generation capacity has led to an improvement of the real generation margins (7.6% instead of less than 5% the year before).

However, the situation in terms of security of supply is much less rosy when considering EU Climate Change 2020 objectives[6]:

1. 81% of the planned generation plants will be fossil fuelled which are CO_2 emitters. This will have a negative effect on Europe's CO_2 emissions volumes, and is conflicting with the 20% CO_2 emission reduction objective of the European Commission;
2. In 2006, the share of renewable energy (hydropower, wind power, solar and biomass) in the primary energy has reached 6.5%. Although increasing dramatically in some EU countries such as Spain and Germany (with respectively 1.6 GW and 2.2 GW of new wind power capacity installed in 2006) this figure is still very far away from the 12% objective planned by the European Union for 2010 and the 2020 20% objective;
3. Last but not least, electricity consumption has increased by 1.4% in 2006 in Europe. Whilst this covers contrasted situations across EU Member States, this trend is also conflicting with the EU objective of reducing by 20% the energy consumption in Europe by 2020.

Colette Lewiner, Energy, Utilities and Chemicals Global Sector Leader at Capgemini said: *"Energy conservation measures are really the key objective since it will automatically drive CO_2 reductions but the cost of these policies have to be evaluated in order to prevent an impact on Europe's competitiveness. However a strong political will, giving a clear priority to these objectives on national industrial interests, is needed and other high consuming regions of the world such as North America, China and India should also apply these types of measures."*

[5] Union for the Coordination of Transmission Electricity, "System Adequacy Forecast 2007-2020" report

[6] In March 2007, the EU Ministers asked Member States to commit to a 20% reduction in energy consumption and Green House Gases emissions, as well as to reach a portion of 20% of renewable energies in their energy production. The horizon of this "three times 20% objective" is 2020.

Appendix 3

European gas security of supply is threatened by the clashing Russian and EU strategies

Europe did not encounter difficult situations in terms of security of gas supply, thanks to a humid 2006 summer and a mild 2006-2007 winter, but this hides real strategic issues according to Capgemini's new EEMO report

While the EU is challenged by issues related to gas supply, Russia is fighting the challenges related to access to the retail market. This clash of agendas is threatening Europe's security of supply.

Europe is highly dependant on imported gas. In 2006, the imports amounted to 54% with Russia providing, through Gazprom[7], around 25% of the total needs. According to the EU Green book[8], 50% of Europe's total supply will come from Russia in the year 2030.

The dependency on Russian gas varies from one country to another, and the most dependant countries are the former CIS members. This vulnerable situation of the former CIS members explains why Russia is so powerful when engaging in stand-offs on their gas supplies (Ukraine – early 2006 – and Georgia and Belarus – end 2006). Because of Ukraine's transit position, this January 2006 cut-off triggered in turn cut-offs in many other European countries underlining Europe's global fragility.

Gazprom is pursuing two main objectives towards the EU: increasing its control on gas transportation pipelines and entering the European retail gas markets.

- The pipeline control battle: Contrary to the European unbundling tendency, Gazprom wants to increase its control of the Russian gas fields, and it wants to increase its control on the transportation pipelines from the former CIS countries fields to Europe. Russia continues to refuse to ratify the Energy Charter treaty, and it continues to avoid any commitment to open the pipelines to other providers. In contrast to Europe's unbundling policy, this is a super bundling policy!
- Control of the whole value chain: Gazprom's strategy is to control the whole value chain (including retail) and to reap the margins. Several deals giving Gazprom access to the retail market, have already been signed between Gazprom and European energy companies (E.ON-Ruhrgas in Germany, Eni in Italy and two retail Companies in the UK).

Colette Lewiner, Energy, Utilities & Chemicals Global Sector Leader at Capgemini said: *"The EU is trying to react by imposing , a "reciprocity" clause to prevent foreign investors, including Russian companies, from taking over European gas and electricity transportation assets, thus responding to fears that Gazprom might grow to dominate the gas fields, networks, and retail. This is an illustration of divergent strategies that could threaten gas security of supply. The EU/Russia battle for gas supply and value chain control is only starting."*

[7] Gazprom is the largest vertically integrated natural gas company in terms of reserves (61% of all Russian natural gas reserves and around 17% of global reserves), production (85% of domestic production and one-fifth of global production) and transportation (it owns the world's largest high pressure pipeline system).
It is controlled by the Russian Federation, which raised its stake in the company in June 2005 in its attempt to regain control over the country's natural resources, which are the backbone of Russia's economy.
[8] EU Green paper March 2006