

Press contacts:

Christel Lerouge
Tel.: +33 (0)1 47 54 50 76
E-mail: christel.lerouge@capgemini.com

Hester Decouz
Tel: +44 (0)870 904 5758
E-mail: hester.decouz@capgemini.com

Capgemini European Energy Markets Observatory (EEMO): EU Ahead of Schedule on 2020 CO₂ Emissions Reduction Target, But Behind on Renewable Expansion

Twelfth edition of report Also Explores Security of Supply and Electrical Grids Transformation

Paris, November 17, 2010 – 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, today announced the results of the twelfth edition of the European Energy Markets Observatory (EEMO)¹ report. Key findings show that despite being on track to exceed its carbon emissions reduction target, Europe faces a challenge to meet the renewable energy expansion objective agreed in the EU Climate and Energy Package. The energy consumption reduction, which is a non compulsory target in the European legislation, could also be difficult to meet. The report also examines actions, including demand response, to improve security of supply in Europe during exceptional events. The transformation of the technical design, equipment and management of grids, crucial to achieve the EU Directive goals and to ensure security of supply, is also explored.

Progress against EU 20-20-20 objectives

Owing to the economic recession and national legislation, the EU is close to achieving its Kyoto target reduction in Green House Gases emissions as a bloc, despite the fact that some Member States are still a long way away from reaching their individual targets. In 2009, total European CO₂ emissions fell by 7%. With a continued soft economy and industrial plants moving outside Europe, the 2020 Green House Gases emission reduction objective should be met and even surpassed.

Although at a slower pace than in 2008, renewable energy generation continued to grow in 2009 boosted by increases in wind and solar power of 15% and 53% respectively. However, the pace of change is currently not quick enough to reach the EU's target of 20% renewably sourced energy in the energy mix by 2020. The Commission assumes that 500 Terawatt-hour (TWh) of the 1,200 TWh growth in the renewable output

required to meet the target will come from wind power. This is a cause for concern as the most favorable onshore wind sites have already been taken, necessitating the development of expensive and complex offshore wind farms.

On the financial side, the crisis has decreased the required project finance flow, austerity plans have pushed many countries to reduce their subsidies to solar or wind energy development and new regulations are rendering wind farm construction very complex. In addition, as these energies are not yet competitive, their development has to be supported by customers. As a consequence, regulators and governments should decide to increase electricity prices and these decisions are always difficult to take in soft recovery times. With China now the world's first solar-panel exporter (exports valued at US\$15 billion) and India, the leading windmills' exporter, the development of these energies in Europe is leading to increased imports instead of developing local industry with jobs attached to it.

Europe's energy consumption goal – reducing primary energy consumption from 1,750 Million Tons of Oil Equivalent (Mtoe) in 2005 to 1,520 Mtoe in 2020 – looks challenging. Thanks to low industrial activity, primary energy consumption in the region dropped by 5.6% in 2009; however achieving the 2020 goal implies significant reduction from sectors such as buildings and transportation. Despite national laws passed in addition to the EU's, these two sectors have long lead times and multiple and dispersed stakeholders. Thus 2020 could be too tight a timeframe for these measures to make enough of an impact. In addition, significant investments, innovation and technology breakthrough (such as electrical batteries) will be required.

Security of supply and the need for smart grids

While overall electricity and gas security of supply increased during the Observatory period (2009 and winter 2009/2010), tense situations were observed in electricity during the very cold winter days and countries such as France were very near from hitting their electricity importation threshold and had to use messaging toward certain citizens asking them to reduce their consumption during peak hours. To increase security of supply during these tense periods, more peak power generation (there have been 13.8 GW newly-added gas-fired capacities in 2009), increased cross-borders interconnections (little progress was observed in 2009) together with vigorous demand response programs enabled by devices such as smart metering are needed.

Grid availability is a key factor in electricity security of supply. The new trends related to a greener energy mix and more active customer behaviors are transforming the design and management of the electricity grid. These smart grids will have new equipments and more sensors and will be digitally managed using standardized communication protocols. However widespread smart grid deployment will need a regulatory push and public funding. Growing adoption of smart metering and smart grid solutions will help to optimise power generation and customer demand and secure a power supply for homes, buildings and industries across Europe.

Colette Lewiner, Global Leader of Energy, Utilities & Chemicals, Capgemini, comments: *“The growing share of decentralized and unforeseeable renewable sources in the global energy mix and issues relating to security of supply, continue to make effective grid management a real challenge for Utilities. It is Capgemini’s opinion that over the next years, we will see increasing adoption of smart grid technologies in Europe as Utilities will have to control and manage the dramatic increase in data flow, storage and information exchanges associated with a more complex and demanding energy landscape.”*

For a copy of the abstract report, please visit: 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 12th edition is built on a majority of public data sources combined with Capgemini methodology and knowledge, and based on 2009 and winter 2009/2010 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.

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