Internal market for electricity: safeguard security of supplies, infrastructure investment

2003/0301(COD) - 25/06/2010 - Follow-up document

In accordance with its obligation under Directive 2005/89/EC, the Commission presents its report on progress concerning measures to safeguard security of electricity supply and infrastructure investment. It outlines the progress made by Member States on the implementation of the Directive and key changes in monitoring electricity security of supply.

Member States have effectively implemented the provisions of the Directive either through the creation of new legislative provisions or the use of existing provisions emanating from other European legislation. Over the short term, there appears to be sufficient network capacity and generation to cope with European electricity demand. However, the picture becomes less clear over the medium and long term. A detailed analysis performed by ENTSO-E in its system adequacy forecast suggests that there will be sufficient generation capacity for the period between 2010 and 2025. However, national reports submitted by Member States indicate that national generation adequacy depends on important assumptions, in particular extending the lifetime of existing units. Without replacing existing generation units, additional capacity of 100-300 GW between 2009 and 2025 would be required.

The 2nd Strategic Energy Review provided a detailed overview of the age of operational generation capacity. In summary, as of end of 2008, the majority of European gas generators were less than 5 years old. However, the majority of coal and nuclear plants was more than 21 years old. Many of them are approaching the date of decommissioning, which is around 40 or more years after the start of operations, depending on the generation type. Combining the need for replacing aging plants with the increasing share of RES based generation, notably on- and offshore wind, as a result of 2020 commitments, and of the Large Combustion Plant Directive 2001/80/EC, presents a significant challenge to system operators over the coming years both in terms of balancing and network adequacy. After 2015, additional investments in generating capacity would be required to maintain the level of adequacy at an appropriate level. ERGEG has expressed concerns that the financial crisis might delay necessary investments that are already under consideration as the economic viability for these projects is put into question due to lower electricity demand.

Similarly, changes in demand patterns may need to be factored in as energy efficiency measures including Smart Meters take effect. As supported by the regulators, incentive based schemes should be employed to facilitate new network investment, and consideration should be given to the utilisation of Smart Grid technology.

The Third Energy Package will bring important changes for monitoring security of supply. ENTSOE's obligation to produce a biennial 10 year development plan that covers all aspects relevant for monitoring of security of supply – both on the side of generation and transmission adequacies, is a significant step forward. Although non-binding in nature it will provide an appropriate basis for ENTSO's network codes on network security and reliability.

As the EU approaches its 2020 climate targets, Member States should be increasingly vigilant of potential security of supply issues and take early enough appropriate measures to modernise and adapt their systems to the new challenges so that consumers can enjoy a high quality, low carbon and continuous supply of electricity.

The report explained some of the future evolutions in the European electricity system, notably with regard to the integration of massive amounts of electricity from renewable energy sources and the need to curb greenhouse gas emissions in the energy sector: fuel shift towards electricity in the overall energy mix; increasing distance between production and consumption due to higher reliance on renewable energy sources; intermittency of the major renewable sources (wind and solar

photovoltaic), increasing the need for balancing capacity, be it conventional or renewable; potentially increased role of electricity imports from outside the EU, due to high "green electricity" potential in neighbouring regions. These evolutions will require massive investments and appropriate incentive schemes for delivering these investments in a timely manner, while ensuring competition, sustainability and security of supply. The European Commission is therefore currently preparing an

Energy Infrastructure Package, whose role will be to encourage the development of European energy infrastructure. This new package will build upon the current TEN-E framework and establish a complete set of policies, taking into account existing procedures and financing for infrastructure development.