Additional explanatory memo regarding the volume of the strategic reserve for winter 2015-2016

In the memo regarding the strategic reserve, an estimate is made of the volume (MW) needed in the strategic reserve to meet the LOLE (Loss of Load Expectation) criteria given in the Electricity Law. This volume is determined using a probabilistic model that calculates the probability that, for the whole period in question and for every hour of the year whilst taking imports and exports into account, Belgian system consumption will not be fully covered by the Belgian generation facilities.

This model uses as its main stochastic variables the fluctuating availability of generation resources due to incidents and faults, as well as scheduled maintenance work based on historical data. These stochastic variables only apply to the central generating units, while the decentralised generating units and demand are included in the calculations on the basis of historical profiles for various years. The combination of the stochastic variables and the historical profiles allows an extensive set of potential situations to be built up and carried forward for the years ahead.

The memo regarding the strategic reserves makes strict use of the statutory methodology which relates to volumes for 3 hours of LOLE for an average winter and 20 hours of LOLE for a particularly harsh winter. The memo is very transparent in its handling of the assumed hypotheses, which are coordinated with the DG Energy. The results of the memo are integrally linked with the initial hypotheses and can only be interpreted within this reference framework. A change in the hypotheses has a direct impact on the results, certainly in the case of large volumes.

A number of hypotheses demand particular attention:

- The uncertainty surrounding the nuclear units in Belgium in the winters ahead means that various sensitivities regarding the availability of Doel 3 and Tihange 2 and of Doel 1 and Doel 2 have been carried forward. Doel 1 is not factored into the equation for winter 2015-2016 as a result of the uncertainty surrounding the temporary restocking of fuel.
- A small increase in demand for electricity is assumed compared to the situation in 2010. However, over the past few years there has been a decrease in demand for electricity and also in peak demand. Having said this, peak demand can make a very quick resurgence, and it is this type of demand that is most critical for security of supply studies.
- It has been announced that facilities (central and decentralised units) with a total capacity of 1,650 MW will be shut down between 2014-2015 and 2015-2016.

- For the new analysis, Elia recommends reducing import capacity from 3,500 MW to 2,700 MW for a very limited number of hours that are critical for ensuring security of supply in view of structural changes established in energy flows during the winter peaks in the CWE network. Furthermore, the market risk associated with the possibility of purchasing energy is expected to increase due to power plants being shut down in neighbouring countries:
    - RTE's System Reliability Report shows that France will be facing a capacity shortage/gap from winter 2015-2016 onwards;
    - TenneT's Security of Supply Monitoring Report indicates that surplus capacity will fall sharply over the years ahead;
    - Power units will be shut down in Germany.

Based on these assumptions, Elia calculates a range of [1,500 MW to 3,700 MW] of volume shortages for winter 2015-2016. For the new analysis, only the volume and not the LOLE figures resulting from the probabilistic analysis will be given. For large volumes, these figures rise very dramatically and paint a pessimistic picture of the number of hours of need for this volume. The number of hours depends on a large set of parameters including climate factors and changes in demand. As the time series for total Belgian energy consumption are based on historical data, no account is taken of any responses from the market to a call by the authorities to limit consumption or of recent adjustments to the imbalance tariffs. The future will show what the impact of these factors might represent. Increases in the import capacity during the less critical hours in CWE as a whole are not taken into account either.

Elia has applied the law and has determined the need for a strategic reserve. However, whether the strategic reserve product, which gives the grid operator responsibility for the activation of this capacity, is the best tool for ensuring security of supply is open for discussion, in particular given that the results lead to such a large volume and large number of potential operating hours.

The hypotheses outlined above indicate the differences between winter 2014-2015 and winter 2015-2016 and justify an increase in the strategic reserve needed. One aspect to note in this regard is that the additional volume of 2,750 MW according to the Ministerial decree is less than the sum of the announcements made for 2015-2016 and the difference between the volume of SR and contracted SR in 2014-2015 (see figure). Furthermore, there are a number of announcements that are not linked to the shutdown of those units that can be offset by the strategic reserve. This will again maybe lead to a discrepancy between the need for strategic reserves and what can be contracted.