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Sensible Climate Change Policy may not ignore Nuclear Energy

Position paper endorsed by the Executive Committee of the Belgian Nuclear Society

There is a large consensus among the international community of climate scientists that humans are having an adverse influence on the climate system (IPCC AR5). Even if the understanding of climate physics must still be improved to reduce uncertainties in the prediction of long-term temperature changes, the Belgian Nuclear Society ("BNS") considers that the risks associated with climate amply justify energy policies designed to reduce greenhouse gas (GG) emissions as requested by the Paris Agreement of December 2015 (COP21). Moreover, the vast majority of reference studies and forecasts of future energy development scenarios compatible with the 2°C global temperature increase limit consider that nuclear energy will have an important role to play in the future energy mix.

BNS is convinced that the compliance with this Agreement can best be achieved by an energy policy where GG-free energy technologies - renewable and nuclear - are promoted on equal footing, with equal criteria. This policy should be applied during an energy transition from fossil to non-fossil generation, with long term implications.

Since its inception in the seventies nuclear energy delivers more than half of the Belgian electrical energy at competitive prices. The baseload electrical energy produced safely on two nuclear sites (Doel and Tihange) flows to the Belgian households and industries through the existing transmission and distribution grids. The price includes all costs related to plant decommissioning and waste disposal, both processes being technically well established. Last but not least, nuclear energy provides significant stable and qualified employment.

The Belgian federal and regional governments are continuously improving their policies to reduce the emission of greenhouse gases, in order to meet the reduction targets defined by the European Union. However, their policies do not make any reference to nuclear energy, as the latter must be phased out by 2025 according to a decision taken in 2003 by the Belgian Parliament. Replacing almost half of its electrical power park within an eight year horizon needs a thorough economic and environmental cost/benefit analysis.

The Swedish Parliament has recently recognized the role of nuclear energy to eventually achieve a goal of 100% renewable generation, by abolishing a nuclear tax and allowing the construction of as much as 10 new nuclear plants on existing sites, implying significant financial investments. On the other hand nuclear phase-out on a relatively short term may have detrimental consequences on GG emissions as the German "Energie Wende" clearly demonstrates. These consequences are due to the need of power supply during the absence of wind or sun in a park of energy sources largely made of renewables. As coal-fired power plants are more economical than say, gas-fired power plants, the paradox lies in the fact that the choice of renewable energy sources may lead to the wrong consequences with a large increase of GG emissions. Is Belgium willing to adopt this paradox?

Furthermore, the necessity to install significantly more renewable capacity and to maintain a parallel back-up system of fossil plants and the massive investments in the transmission and distribution networks lead to considerable systemic costs.

Presently, the low price of energy renders the energy transition economically difficult. It is due to increasing fossil fuels reserves discovery, new fuel sources or reduced demand. Under this condition, it is increasingly difficult to justify in Belgium investments in non-emitting new generation projects like renewables or nuclear.

This investment bottleneck is an effective argument against the phase-out of nuclear generation, and it supports the plant life extension beyond 40 years of the existing nuclear plants, as it is nowadays adopted in the USA and other countries.

The electric power generated on the two nuclear sites amounts to about 6 000 megawatts on a surface of 1.5 km² only. This implies that an expansion of nuclear generation is possible without excessive environmental impact caused by land use and loss of wildlife.

In conclusion, the Belgian Nuclear Society supports a policy where the phasing out of nuclear energy in Belgium is reexamined in a new time frame, probably running up to the end of the 21st century with new builds. The nuclear plants are indeed a Belgian asset to comply with the reduced emissions required by the Paris Agreement. To ignore them should endanger the transition to non-fossil energies in Belgium.