



BULGARIAN NUCLEAR SOCIETY

“Towards a European strategy for the security of energy supply”

BNS contribution to the Green Paper

The Bulgarian Nuclear Society (BNS) is greeting the European Commission for providing the possibility by an open discussion on Green Paper issues to be found the proper decision of one of the most significant problems for the European citizen and the citizens of the Planet. These are energy supply problems in free market environment and the necessity of urgent actions to overcome the changes in the climate, which bring to bigger and bigger harms to the Planet and its inhabitants.

The process of Kioto Protocol ratification to the UN Frame Convention on the changes in the climate appeared to be a milestone in the overcoming the inertia in the traditional style of thinking of politicians and the public. According to the existing understanding, the terms “harm” and “danger” in most of the cases had been appreciated as synonyms. Usually no difference is done between the actual harm and the danger in case of which no harm was done while just danger (a probability) of occurrence of harm was taking place.

At the same time it is hard to indicate such a technology of our days with zero harm probability when utilizing it. This statement is much more valid when the assessment of this probability considers the human factor as well. One of the most jeopardious examples to confirm it is the Chernobyl disaster provoked by an unexplainable for the healthy mind conscious violation of all nuclear safety technological limits. The last example for human factor significance are the incredible in their scope harms for the USA and the whole world, done on purpose dated 11th of September this year, by otherwise relatively safe technologies for modern sky scraping building construction and the civil aeronautics.

We believe that during broad discussion on the Kioto Protocol ratification process, the public and its leaders will recognize the need of a new approach to safety. An approach based on new scientific, moral-ethical, legal and political grounds of assessing the social and economical significance for the public of the actually affecting harms caused by utilizing high technologies.

Only the achievement of an adequate social and economical balance *actual harm/risk of harm (danger)* when making decisions for implementing one or another technology could quarantines overcoming of the fundamental problem for the mankind future – the appearing changes in the climate. In this sense we support what had been said in the Green Paper “...The longer we wait, the more drastic the measures taken will have to be”. It is obvious that nuclear power is going to be the decisive factor in CO₂ concentration stabilization at the current levels by reducing the emissions “... by 50 to 70 % immediately...” (p.49, Green Paper).

There have already been some indications, that the “victory for common sense” appears to take place in the public attitude towards nuclear power. We believe that the state leaders will pay attention to this common sense.

Being a civil association of Bulgarian scientists, specialists and citizens having close attitude to the peaceful usage of nuclear power, the Bulgarian Nuclear Society can not stay indifferent to the future of the nuclear power industry, including the Bulgarian one. That is why we allow ourselves to take part in the debate being on the side of associated member of EU and future citizens of the United Europe.

Bulgaria, being a country included in Annex I to the Kioto Protocol is directly interested in such a solution of the problem, which could provide a worthy future of its citizens. The economical prosperity criteria being the major criteria for the European Union membership cause urgently to be ensured a sustainable development for the Bulgarian economy in the future market conditions in order to withstand the competitive pressure of other countries economics.

When analyzing the newest tendencies in the world energy generation process and the economical criteria for European Union membership, we have recommended to the Bulgarian government to reconsider thoroughly the Energy Strategy of Bulgaria, which currently is directed to reducing the nuclear power generated energy and to increasing the share of the polluting electrical power plants based on burning of lignite.

We state that one of the basic elements of a competitive Bulgarian economy is the development of a cheap, clean and stable electricity-generating industry. It should be based on the environmentally friendly and rehabilitating impact of the safe nuclear power industry together with maximal utilization of effective renewable energy sources.

So far, there still exists some misunderstanding by the European public about the Bulgarian nuclear reactors safety, which unfortunately was expressed in the Green Paper (p. 33) too. Widely spread is the opinion that these types of reactors are non-upgradable and due to this reason, they should obligatory been closed.

Kozloduy NPP, the only till now Bulgarian nuclear power plant, is equipped with VVER type of reactors – second and third generation, analogues of the western type of reactors known as PWRs. They have been running safely for more than 100 reactor-years. These reactors differ from the RBMK type of Chernobyl reactors by their structural characteristics. It would be reasonable to consider Kozloduy VVER 440/230 reactors safety by the statement of WENRA, incorporated in its report from 1999 namely: *“...When assessing the overall safety of the VVER 440/230 plants, it should be noted that these plants, like all VVER 440s, have some inherent safety characteristics which are superior to most modern Western plants. ... These reactors have more than twice as much coolant per megawatt as any Western designed NPP. ... This safety feature provides an effective protection against the possible escalation of many transients to more severe events.”*

In 1993, when the Bulgarian government signed the first agreement with EBRD, the country was in deep economical crisis. This was the reason in the Agreement on reactors 1-4 to be included, that they “...could not be upgraded at reasonable price”.

Unfortunately, this purely economical consideration was later transformed into a political pressure. Since 1991 till now, by mainly with Bulgarian resources and the considerable financial support of European banks and funds, there were eliminated almost all discrepancies between the current safety requirements and the units designs. But nevertheless, as a condition for the further negotiations for joining the EU, on 29.11.1999, the Bulgarian government was forced to sign with the European Commission a bilateral unfavorable understanding for earlier closure of Kozloduy NPP units 1-4.

The understanding:

- **Is unfavorable for Europe**, because the closure of units 1-4 does not increase Kozloduy NPP safety. This is so because the safety issue is going to be transformed from a technical problem to a human factor one. Bulgaria has got a structured educational system for nuclear power industry personnel training, but the

young people already avoid these specialties, because they do not want to be employees of a non-prospective utility. Hundred of highly qualified specialists who are operating these units have already been losing their motivation and are looking for work out of NPP. This situation will naturally bring to reducing the already achieved safety level.

- **Is unprofitable for Europe**, because by eliminating 1760 MW nuclear power, the European countries are losing their chance to receive in short terms the carbon dioxide credit from Bulgaria, worth 250 million USD annually. This credit is possible because of the reduced (when compared to 1990) and maintained at a permanent level Bulgarian emissions of CO₂.

- **Is unprofitable for Bulgaria**, because the elimination of 1760 MW nuclear power will bring to unforeseeable social, ecological and economical. As a whole this will result into additional reduction of the competitive power of the Bulgarian economics. Direct losses of investment and not producing of electricity, caused by earlier closure are estimated on 6.5 billion USD.

- **Is unprofitable for Bulgaria**, because by the elimination of 1760 MW nuclear power, the country will lose the possibility for its contribution to the combating of Europe for reducing CO₂ emissions. This contribution is evaluated to be about 2.7 billion USD in case the units final shut-down is postponed by 10 years only. Moreover they have much longer operational lifetime.

- **Is unprofitable for Bulgaria**, because the eliminated 1760 MW nuclear power should be replaced by fossil fuel burning power stations. But this means increasing of CO₂ emissions and paying penalty taxes worth 270 million USD/y.

When considering both sides unprofitableness of the understanding for closure of the units 1-4 of Kozloduy NPP and having in mind the occurring positive social and economical circumstances related to the nuclear power and maintenance of high level of nuclear safety in Bulgaria, **we propose that the European Commission to review its position for the future of Kozloduy NPP units 1-4. By such an act, it will give Bulgaria the chance to make its own contribution to the energy stability and to fulfillment of obligations of the future enlarged EU to the Kyoto Protocol.**