

# Factors for Building New Nuclear Capacities in the Light of Energy Markets Liberalization in European Union

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Since the 90ies in Bulgaria have started two processes: the Market Economy Transition and opening the national markets to those of the European Union (EU).

The internal market transformation coincided with the initializing of Common Harmonized Markets for Electricity and Natural Gas in EU [1]. It was expected that market liberalization will result in better trade rules, such as easier access to new markets, fair price forming and lower transition taxes between different member-states of the EU. This process met many challenges related to uneven development of the member-states countries as well as conflicts of interest.

The profound changes had a great impact on the development of the Bulgarian nuclear energetics, as it is shown in Ref. [2]- [4]. The Belene Project for second nuclear power plant in Bulgaria was frozen in the early 90ies. The uranium mining was stopped in 1991. At Kozloduy Nuclear Power Plant, four out of the six reactor units (1.6 GW generating capacities) were decommissioned in 2003 and 2007 respectively in accordance with requirements for membership in the European Union [5].

For the period 2003-2012 there are public debates on the possibility to restart the Belene Project. In 2012 the project was cancelled. The project New builds at Kozloduy NPP was considered [6].

In the last few years, the restart of the Belene Project is discussed again. Recently, Bulgarian Government launched of procedure for a strategic investor for the construction of Belene NPP [7].

Kozloduy NPP is operating with its 5<sup>th</sup> and 6<sup>th</sup> reactor units with the summary installed capacities of 2 GW. Both reactors generate one third of the electricity in Bulgaria. In the end of 2017 Unit 5 obtained operating licence until 2027 [8]. This year is running the procedure for licence extension for Unit 6 .

The question for building or not new nuclear capacities is related to strategical decision to develop or not a nuclear energetics in Bulgaria. It is expected that part of thermal baseload capacities will be decommissioned or replaced in the next two decades. Of interest is how liberalization market policies and long term strategies of European Union [9] will affect on the future developement of nuclear energetics.

This report is an attempt to systematize the factors for the construction of new nuclear capacities in Bulgaria. A review of the Bulgarian electricity market as well as of the structure and dynamics of the electricity production and consumption on the Balkan Peninsula is made. The challenges due to the market restructuring and liberalization rules are shown. Nuclear energetics and its future development in the EU, the poli-

cies, trends and challenges facing the sector are discussed. Recent nuclear energetics developments in the EU is shown [10]. Comparison with other EU Member States that have projects for new nuclear capacities is discussed. The risks associated with the constructing of new nuclear facilities are systematized.

## References

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