

However, for understandable, though clearly unknown to science, reasons – mainly due to shrinking consumption and surplus capacity – the cost of base electricity for the day ahead on IBEX was logically reduced. (<http://www.ibex.bg/bg>).

Therefore, if by some miracle the Belene NPP were already built, in a liberalized market its electricity would be totally uncompetitive and unsellable. An investment of a total of BGN 22-23 billion would have been lost. Moreover, the NPP would generate billions of losses annually for the repayment of loans and accumulated interest, as well as for maintenance. It is should be noted that the state has no way to raise that money, except by increasing taxes and cutting on the costs of salaries for teachers, doctors, policemen, pensioners, and so on.

Oh, what a life it would be!

For example, in the first week of March 2018 the price was 63.22 BGN / MWh, in the second week, 53.94 BGN / MWh, and in the last 5 days, 37 BGN / MWh. For March 17th, Saturday, the price reached the unthinkable 24.96 BGN / MWh, and for Sunday, March 18, the even lower 14.81 BGN / MWh. A downward trend is also observed in electricity prices for peak and non-peak power.

The same prospect emerges if the Belene NPP were to be completed in the foreseeable future. ESO's latest report for the period 2018-2027 clearly shows that, without Belene NPP (even without TPP Varna), by 2027 the consumption in the country will be fully secured, leaving opportunities for export amounting to between 6.5 and 7.9 billion kWh per year. Even the Bulgarian Academy of Sciences report notes on p. 268 of its report that, given realistic development of capacities and consumption, domestic consumption in the country by 2040 will be met, leaving huge opportunities for export, about 9 billion kWh by 2035 and up to 5 billion kWh after that, except for the winter months.

There is no guarantee, however, that other countries will need as much electricity, given that in recent years the export of electricity has declined and in 2017 it was only 5.52 billion kWh.

These are just some of the facts that show that the Belene NPP project has always been and remains a multi-billion-dollar adventure, fueled by corrupt expectations and pro-Russian interests. None of the generously offered suggestions can change that conclusion – suggestions about the Balkan countries' profound interest in the project, a "request" for European funding, interest by Chinese investors, the viability of the project demonstrated by the Bulgarian Academy of Sciences, the saying that no NPP operates at a loss, about keeping Bulgaria in the Nuclear state's club, etc.

<http://www.mediapool.bg/ako-aets-belene-veche-beshe-postroena-news276902.html>



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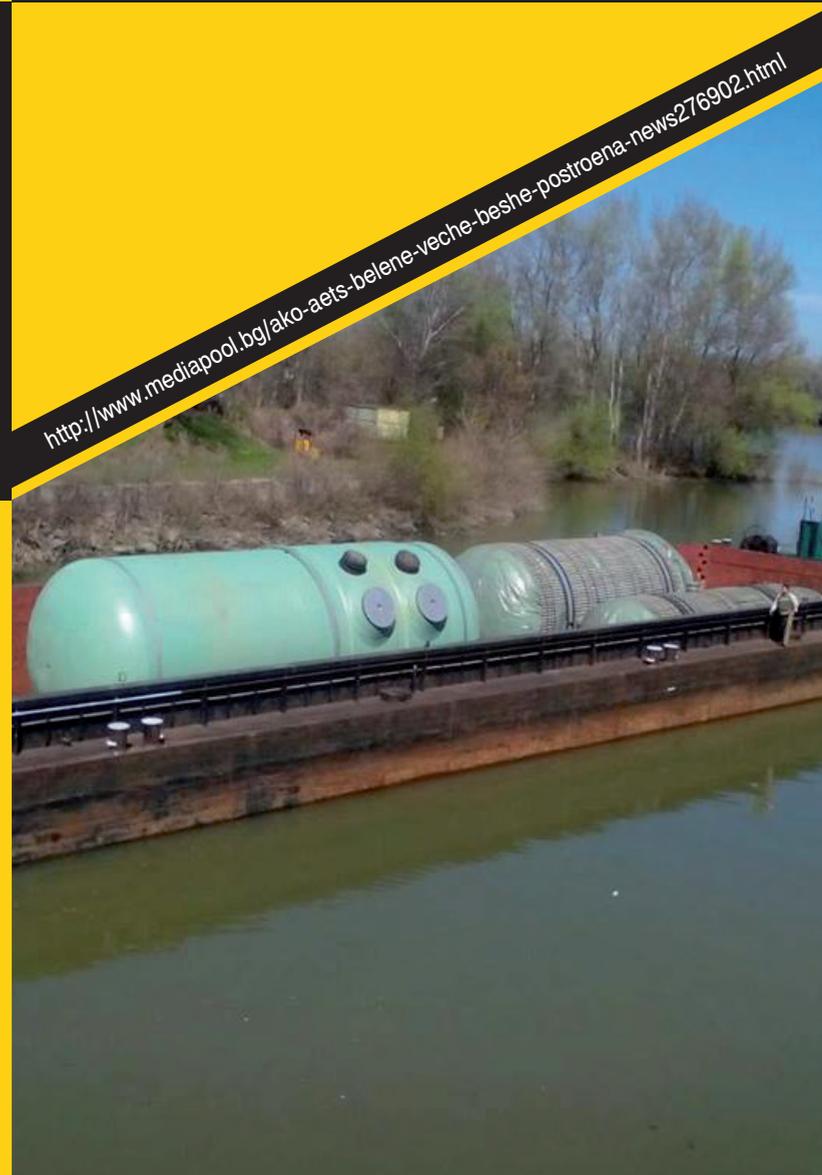
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IF BELENE NPP WAS ALREADY BUILT BY PROF. G. KASCHIEV



За Земята

This brief analysis is not intended for readers, of whichever political persuasion, who support the Belene NPP project, nor is it for government officials mesmerized with the grand idea of building it. I hope that people of common sense will read this text, so they can reconfirm their certainty of the futility of this multi-billion project, and finally put an end to it.

One can often hear the advocates of the Belene NPP say that we could have already had it finished a few years ago, and then, as the song goes, "...oh, what a life it would be...".

From an engineering point of view, this would, of course, not be possible, considering that, after the project was discontinued in March 2012, the technical project has not yet been approved, there is no contract for the construction, no strategic investor, no funding, there is nothing.

STILL, WHAT WOULD HAVE HAPPENED IF THE PROJECT HAD NOT BEEN TERMINATED?

Suppose that by mid-2012 the Belene NPP technical project had been approved and the Bulgarian state had begun construction. If, by some miracle, the construction works were perfectly organized, loans of about BGN 20 billion were secured at a reasonable price, if the construction were done without delay, if the power plant were staffed and connected to the power grid ... and many other "ifs", could hypothetically, possibly, Belene NPP's first unit might have already been completed?



➤ The first question to ask here is: Would there be a market for Belene's electricity?

An overview of the Electricity System Operator's (ESO) website shows that from the beginning of 2018 until March 12 electricity generation dropped by 4.8% and electricity consumption by 6.8%, compared to the same period in 2017. Last week, for example, the maximum load in the country was only 5286 MB and the minimum 3350 MB.

Since the beginning of 2018, net electricity exports have averaged 424 MW, with large fluctuations.

The state of the national load and exports should be considered in light of the following data:

- Even without Belene NPP currently we have about 11 880 MW installed capacity (including one unit at TPP Varna);
- Kozloduy NPP is constantly generating about 2100 MW;
- Due to the continuous spring rainfall, most hydro power plants (HPPs) with a total generation capacity of 2340 MB, without the pumps, work at full capacity, sometimes generating over 1600 MW and a total of 8.7% of the electricity generated since the beginning of the year;
- The remaining renewable energy sources (RES) with a total capacity of 1822 MB perform mainly depending on the weather, having generated 5.4% of the electricity produced since the beginning of the year;
- District heating and industrial power plants supply 400-500 MW;
- Coal-fired power plants, with a total capacity of 4 000 MW, cover the rest; although their capacity is deliberately limited, as witnessed by Bobov Dol TPP which the recently was completely shut down.

It is clear that even during the current season the chances of Belene NPP finding a market for its electricity, either in the country, or in the region, would be equal to zero.

➤ The second key question to ask here is: Would Belene NPP be competitive?

According to various forecasts, at full load (two units, 2120 MW in total, 7970 hours of work per year and 16.9 billion kWh gross generation per year) the electricity from Belene NPP would cost between BGN 170 and BGN 200 per MWh and significantly more when operating at lower capacity.

IS THIS COST HIGH OR VERY HIGH?

As always, the answer to the question is found in comparison. For this purpose it is best to use public data from the Independent Bulgarian Energy Exchange (IBEX). In 2017 the average price of base electricity traded on IBEX for the day ahead, was about 80.5 BGN / MWh. According to the Bulgarian Academy of Sciences, this price is expected to grow, yielding a moderate increase to BGN 114 / MWh in 2020.

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