

INVESTMENTS IN NEW ELECTRICITY GENERATION CAPACITY IN POLAND. WHAT PRICE LEVELS CAN BE EXPECTED IN MEDIUM AND LONG TERM AND WHAT WILL THIS MEAN FOR INDEPENDENT MARKET ENTRANTS?

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On many electricity markets one question is currently discussed: If and when can investments in new power generating capacity be expected? In Poland, during the next 20 years approximately one third of total generation capacity has to be exchanged due to its age. Furthermore it is expected that electricity demand will rise at least by 50% until 2030. This will lead to the additional need of 14 000 MW of new power generation capacity.

On the other hand, renewable energy sources enter the market. For instance, it is expected that due to environmental policy app. 7 500 MW in wind power will be installed during the next 20 years. This process will necessarily be accompanied by the restructuring of the power system, e.g. by enlarging peak capacity through OC gas turbines.

Nevertheless, the Polish energy economy cannot be based on renewable energies and gas turbines only. Thus significant investments into conventional hard coal and lignite, maybe even nuclear power plants are necessary, but are currently realized too slowly. One of the present problems of investors is that the current system's marginal prices do not cover capacity expenses - a problem which is commonly known as the "missing money" problem from other markets.

A second problem is the existence of market power of state owned companies. The market structure can be changed only slowly in the future. Thus, the national champion PGE will likely keep a dominant position on the market.

In our paper, we investigate the following key questions:

- What are the specific reasons of the "missing money problem in Poland and why did market power during the last years not lead to a significant increase of wholesale market prices?
- Will the system overcome the "missing money" problem and thus when will prices actually reflect long-term marginal costs?
- What will the existence of a state owned National Champion mean for investment decisions of independent market entrants?

We approach this problem in modeling the long-run marginal cost of the Polish power sector and in analyzing the market imperfections of the Polish electricity market.

Applying the model of a partial monopoly, we argue that prices should in theory rise from a current short-term marginal cost level and reach a level on or above long-term marginal costs in future. This in general would allow the realization of new investments also of smaller or independent market entrants, but also give significant windfall profits to the National Champion.

But due to political pressure and consumer protection, the National champion will be forced to keep prices low. This will lead to a level below long term marginal costs. As a consequence, independent investors will refrain from entering the market. Only those companies, that have already build-up generating capacities in the past, will be able to compete on the Polish market with a national champion in the future.