

“Security analysis in the area of electricity generation in Poland, a study of cases”

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The goal and thesis of the main PhD-abstrakt

The goal of the work is to show the governing body, the manufactures and the consumers of electricity, the additional costs, which are created due to the lack of long-term investment decisiveness in Poland. Indecisiveness of the Country mainly is the result of fear of social costs of market facilitation of energy prices for end-users. In my work, I have tried to systematise this problem.

A lack of decisiveness in terms of stating the investment priorities for the modernisations and for building new electricity facilities in Poland has caused a threat to the energy safety as part of the national safety.

A constant situation of electricity export and import imbalance (net import lager than export) will result in the energy and political conditioning from potential end-suppliers.

With an under-development of international network connections, it can plausibly lead to a decrease of GDP, and at the same time, to a slow collapse of the economic condition of POLAND.

Introduction – abstract

The information, which I have used in the work, point out substantial delays in the introduction of modern technologies in the Polish energy industry.

In the work, I have identified the forecasted the power exploitation time in Polish power plants, so-called **GCF - Gross Capacity Factor** – the ratio between the actual produced amount of energy from the beginning of



exploitation and the amount of energy produced by the blocks, in the same time, with nominal power.

Devices designed and built in the '60s are coming to the end of safe operations period. Around 300 000 hours of operation is the boarder period of the safe exploitation of blocks.

Building new or modernising the existing blocks takes a minimum of 60 months and have to be preceded by at least a 3-year preparation period. Such investments do not find easy funding through classic models, such as Finance Project or Corporat. A potential help of the Country in this filed has to be notified in the European Commission, which is done very reluctantly.

Conclusions – abstract

Things that can be done to increase the energy safety, resulting in an increase of national safety, for energy companies and the Polish Nation:

- Expediting the realisation of linear transfer investments of power networks.
- Introduce mechanisms for the support of building highly-efficient and ecologically clean technologies for making energy from coal.
- Introduce long-term contracts between the energy industry and the mining industry – to make investments possible.
- Decrease the fiscal load on the prices of electricity – to limit price increases for consumers.
- Performing research on the possibilities of underground CO2 storage.
- Actuating actions for building a nuclear energy industry in Poland.
- Introduce an SO2 and NOx trade in the country, and change the allocation rules for the rights to CO2 emissions.
- Increase the share of electricity production in relation to heat production.
- Create an institution, which will update databases, generate scenarios and analyse the development of the Polish energy industry for the needs of teams that negotiate solutions with the European Commission.

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