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ENERGY SECURITY OPTIONS IN THE LITHUANIAN NATIONAL ENERGY STRATEGY

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Overview

Paper describes current status and specific features of the Lithuanian economy, primary energy supply and energy transformation sector. During transition to a free market economy, the important changes have occurred in the technical and institutional structure of the energy sector, in reduction of energy intensity and increase of the role of indigenous and renewable energy sources. On 1st May 2004, Lithuania became full member of the European Union (EU). Membership opens the entire EU market for the national economy with considerable opportunities for further development. However, during the process of accession, one of the country's obligations was decision on closure of Unit 1 at Ignalina Nuclear Power Plant (NPP) before 2005 and Unit 2 in 2009. After closure of Ignalina dependence on energy supply from other countries will increase significantly. The analysis of the most important measures linked to reduction of this dependency is discussed.

Methods

The analysis is based on application of econometric model and methodology of uncertainty for energy demand forecasting as well as of optimisation modelling tool MESSAGE for investigation of the energy sector development options.

Results

Changes in dependence of energy supply could be illustrated by data presented in Fig. 1. The most important measures directed to increase of energy security are the following: construction of new nuclear power plant (in close cooperation with other Baltic States and Poland), integration of the Lithuanian energy systems into energy systems of the EU, development of capacities for natural gas storage, construction of the regional liquefied gas import terminal and necessary infrastructure, increased share renewable energy sources in the country's energy balance, increase of energy efficiency, building of 90-day stocks of crude oil and petroleum products, etc.

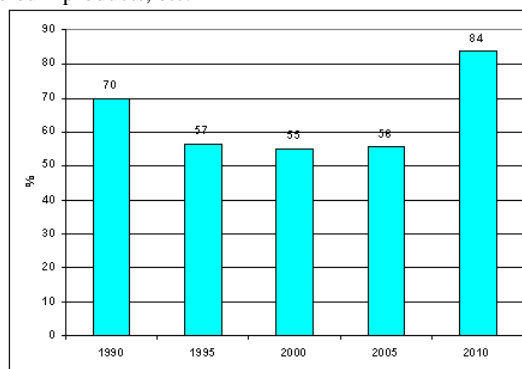


Fig. 1. Changes of country's dependence on energy import

Conclusions

1. Important features of the Lithuanian energy sector are the following: high dependence on primary energy supply from Russian Federation; still existing excess of generating capacities; absence of interconnections with Western energy systems; growing contribution of indigenous energy resources and local oil (its actual share in the country's balance of petroleum products is about 9%); large share of residential houses in towns (about 75%) supplied with the heat from district heating systems; necessity of modernisation of power plants and energy infrastructure, etc.
2. Due to closure of Ignalina NPP, increase of energy prices (in particular of oil and natural gas prices), increased dependency on energy import, interruptions of crude oil and natural gas supply appropriate energy security measures should be implemented.

References

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