

## LITHUANIAN ENERGY SYSTEM DEMAND FORECAST FOR THE PERIOD TILL 2050 YEAR

Vilnius 2008

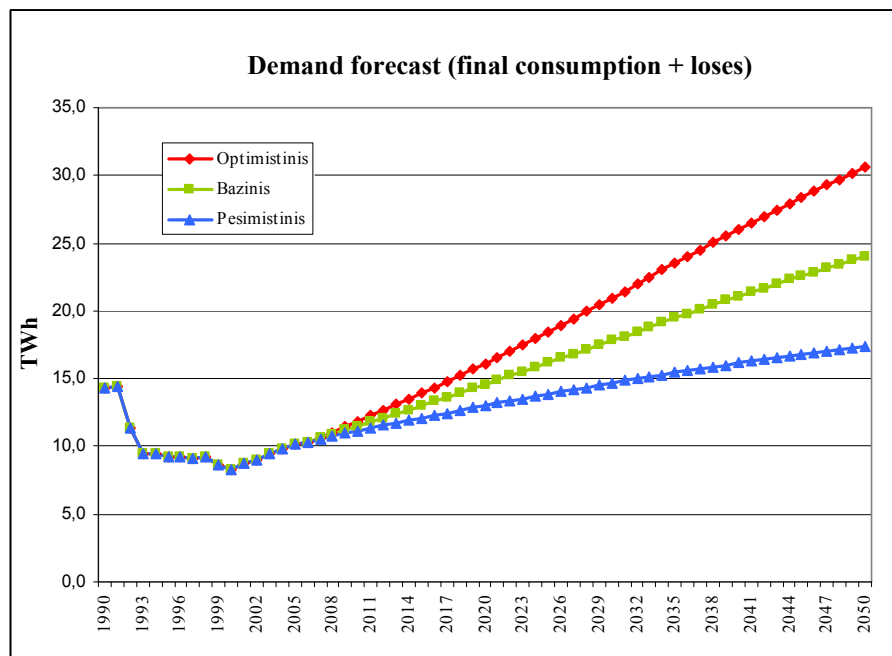
## Summary

This paper is aimed at scheduling needs, studies or analyses of Lietuvos Energija AB, in which it is necessary to provide long-term prognoses of power demand in Lithuania, to perform adequacy analysis of generation capacities of the power system and project transmission system development and rehabilitation.

The power demand prognoses have been performed using a modeling pattern *MAED*. This pattern makes it possible to evaluate Government's policy, probable technological changes within the country, demographic changes, expected growth of Lithuanian economy, etc.

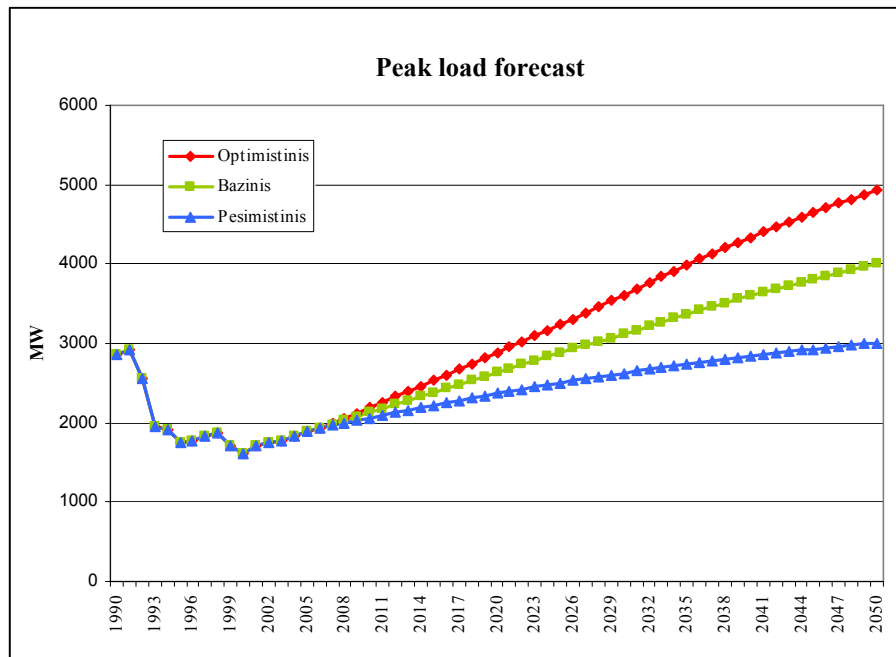
The main evaluation indicator, reflecting the country's economic situation, having the biggest impact to change of electricity demand is the gross domestic product. This paper's tendencies in the change of gross domestic product until 2010 are considered according to projections of Ministry of Finance, tendencies of changes for 2001-2050 – in accordance with projections of the European Commission.

According to maximum demand scenarium for 2005-2050 total (total end-customer demand plus grid loss) electricity demand may reach 30.6 TWh. Average annual growth of electricity demand in Lithuania during the analyzed period according to such a scenarium would be around 2.5%. According to average needs scenarium total electricity demand may grow up to 2.4 times and reach 24.0 TWh. Average annual electricity growth would be around 1.9 %. The expectation of minimum demand scenarium is that total electricity demand of Lithuania in 2050 may stand at approx. 17.4 TWh, i.e. it may grow by 1.7 times. According to such a scenarium average growth of annual electricity demand in 2005-2050 would be about 1.2 %.



Total electricity demand in 1990-2050

Maximum system demand's capacity is defined according to expected electricity demand and scheduled  $T_{max}$  – maximum demand capacity coefficient.



Maximum demand capacity change in 1990-2050

Maximum demand capacity (own needs of substations is not included) at maximum electricity demand in 2050 may account for approx. 4940 MW. Provided the demand is minimum, the maximum demand capacity may reach approx. 3060 MW, at average demand – approx. 4000 MW.