

ELECTRICITY DEMAND FORECASTING OF THE 13TH FIVE-YEAR IN NORTH CHINA UNDER THE “NEW NORMAL ECONOMY”

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Overview

As the foundation of the national economy, electricity production and supply provides an indispensable condition for economic development, social progress and the improvement of living standard. The incompatibility between electric industry and economic development would pose enormous impact on the national economy and people's life. Therefore, the balance of electricity demand and supply has been one of the core problems in related researches on electricity market.

With the emergence of a “new economic norm” and “economic restructuring”, the electricity demand situation in North China will undergo significant changes in the future. In order to ensure the harmonious development between electricity industry and economy development, it is essential to forecast the electricity demand in North China during the 13th Five-Year-Plan period, combing the economic development planning and the goal of economic structure adjustment.

The paper is organised as follows: After the introduction the second section gives a brief overview about the forecasting model of electricity demand which is necessary to establish a more appropriate model. The third section analyze the affect factors of the electricity demand in different sectors based on grey correlation analysis and co-integration test. In section four we establish forecasting model of each sector and make predictions under different scenarios based on cointegration theory. In the final section suggestions of electric power development planning are derived.

Methods

Grey correlation analysis , Cointegration theory , Scenario analysis

Results

The results show that the total electricity consumption will grow at an annual rate of 4.44%-5.14% during 13th Five-Year-Plan period, which would be more than 17683.71×10^9 kWh in 2020.

The electricity consumption growth of tertiary industry and resident sectors would raise fast, which will grow at an annual rate of 7.18%-8.41% and 7.25%-7.81% during 13th Five-Year-Plan period.

Moreover, comparing with the demand structure in 13th Five-Year-Plan period, the proportion for industrial electricity demand will decline by 2%, the proportions for tertiary industry and resident sector will increase by 1%.

The electricity consumption structure in North China would change in the future.

Conclusions

The situation of economic development has significant influence on the electricity demand in North China. The planning of electricity industry should fully take economic factors into consideration.

During the 13th Five-Year-Plan period, the speed of power construction should be decline under the “new normal economy” and “economic restructuring”.

In addition, the power load characteristics will obviously change along with the change of electricity demand structure. Power grid should strengthen the peak shaving capability in the next work.

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