Aplikasi jaringan syaraf tiruan untuk peramahan beban tenaga listrik jangka panjang pada sistem kelistrikan di Indonesia

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Abstrak

It has been studied the forecasting of electric power peak load in the Indonesian electric system by using Artificial Neural Network (ANAU) Back Propagation method with the study period is 2000 - 2025. The long-range forecasting of electric peak load is influenced by economic factors. in this study, it?s selected the economic data which is estimated very influence to forecasting, which in this case become input ofAN1\L i. e.: Gross of Domestic Product (GDP) per-capita, Population, Amount of Households, Electrification Ratio, Amount of CO, Pollution, Crude Oil Price, Coal Price, Usage of Final Energy, Usage Qf Final Energy on Industrial Sector; and Average Electric Charges. Data used for study are actual data, start year 1990 up to 2000. Result of the peak load forecasting in the end of study (2025) by using ANN is 85,504 MHC meanwhile the load forecasting in the National Electricity General lan (NEGP) is 79,920 MW (the difference of both is about 6. 6%). Based on ANN approach is obtained results that the peak load forecasting in Indonesia in the year 2005, 2010, 2015, 2020 and 2025 are 16,516 MHC 24,402 MHC 36, 15 7 MIK 56,060 MW and85,584 MW respectively.