

## Necessary Steps for Optimizing Electricity Generation Programs from Ahvaz Electricity Plants, Iran

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**Abstract :** Iran, a geographically arid and semi-arid country, experiences varying levels of rainfall across its territory. Five major and important rivers, namely Karun, Dez, Karkheh, Jarrahi, and Hendijan, are valuable assets of the Khuzestan province. To address various needs, including those of farmers (especially during hot seasons with no rainfall), drinking water requirements, industrial and environmental, and most importantly, electricity production, dams have been constructed on several of these rivers, with some dams still under construction. The outflow of water from dam reservoirs must be managed in a way that not only preserves the reservoir's potential effectively but also ensures the maximum revenue from electricity generation. Furthermore, it should meet the other mentioned requirements. In this study, scientific methods such as optimization using Lingo software were employed to achieve these objectives. The results, when executed and adhering to the proposed electricity production program with Lingo software, indicate a 35.7% increase in electricity sales revenue over a one-year examination period. Considering that several electricity plants are currently under construction, the importance and necessity of utilizing computer systems for expediting and optimizing the electricity generation program planning from electricity plants will become evident in the future.

**Keywords :** Ahvaz, electricity generation programs, Iran, optimizing

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