



UNIVERSITI TEKNOLOGI MARA

**OPTIMIZATION OF GENERATION EXPANSION
PLANNING IN POOL ELECTRICITY MARKET
BY USING GAME THEORY AND
EVOLUTIONARY PROGRAMMING**

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ABSTRACT

These days, deregulated electricity industry has led to the perfect competition which is restructuring the Generation Expansion Planning (GEP). The aim of this research is to optimize the generation expansion planning among the generating companies (GENCOs) by using a solution and Cournot game theory in pool electricity market. By using the game theory, the expansion on which type of generation unit can be decided. A test system consisting of three different types of generator is considered. By applying the proposed method, the results are obtained and recorded in the table that show the expansion planning can be optimized.

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