

**UNIVERSITI TEKNOLOGI MARA**

**GENERATION EXPANSION PLANNING IN  
LIBERALISED ELECTRICITY MARKETS USING  
SYSTEM DYNAMICS**

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## **ABSTRACT**

Electricity companies and regulatory authorities had facing new challenge in power generation planning since the introduction of liberalized electricity market. In this new environment, generating companies are exposed to various risks and return on generation investment is not guaranteed. On the other hand, the regulator concern is on the generation investment, whether there will be enough generation capacity in the future. This is because in this new environment, the investment is rely on the investment decision of the generating companies and not the least cost planning by the regulator. This paper proposes to use System Dynamic to model the generation expansion planning in liberalized electricity market. This model could be used by regulator to plan for generation expansion planning and by generating companies to evaluate various investment plans in liberalized electricity market. A simple stock flow diagram has been developed to represent the generation investment activities. A 20 year's planning horizon has been considered in the simulation.

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