

## Effect of fossil fuel price fluctuations on electricity planning comprising renewable energy

### Abstract :

Electricity generation mix in Malaysia largely relies on fossil fuel including coal, natural gas (NG), diesel and fuel oil. In the Ninth Malaysia Plan, the government aims to achieve 5% electricity generation mix from renewable energy (RE). Nevertheless, until now, RE contributes less than 1% of the national electricity generation mix. In spite of its emission benefits, NG prices volatility have encouraged calls for investments in RE. Unfortunately, NG price in Malaysia is highly subsidized, thereby making RE implementation unattractive. This article addresses the impact of NG price (with and without subsidies) on RE-integrated electricity generation in Malaysia. The results show that a small increment in NG price will not affect the selection of RE source for electricity generation. If RE electricity generation is chosen, it will slightly increase the cost of electricity (COE) by 2.2 cents/kWh. Without NG subsidies, this cost can be translated to an additional 3 cents/kWh of COE.