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Session MB21 - Energy Management

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### 3 - An Optimal Power Mix and Dispatch Model Considering Climate and Environmental Impacts: A Case Study in Taiwan

[📅 June 18, 2018, 11:00 AM - 12:30 PM](#)[📍 Joy, 4th Floor](#)

#### Authors

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#### Abstract

Taiwan's air pollution has been a critical issue to residents' health. Despite Taiwan Government has set an energy transition policy of nuclear-free homeland and 20% of power generation for renewable energy in 2025, thermal power generation is still the main source, which occupies 80% of power generation. This results in bad air condition that is known as PM<sub>2.5</sub>. Further, the high atmospheric pressure brings more polluted air from China in winter. How to mitigate air pollution in the period of energy transition becomes a critical issue. Therefore, the aims of this study is to develop a mathematical model that describes power mix and dispatch under seasonal and air pollution factors. With empirical data, we will discuss and compare the configurations of power generation source through Goal Programming (GP). Under different weight allocation of various scenarios, this model expects to provide advices to Ministry of Economic Affairs and Taiwan Power Company on power dispatch and control.