

Nontachai Yoothai 2014: Optimizing Operational Plan in Distribution System of Integrating Distributed Generators with Wind Power Generation. Master of Engineering (Electrical Engineering), Major Field: Electrical Engineering, Department of Electrical Engineering. Thesis Advisor: Associate Professor Ekachai Phaisanhitisakul, Ph.D. 57 pages.

Energy crisis tends to be a great impact in near future due to an enormous demand in global usage. To avoid the serious consequence of the energy shortage, supplying energy source in response to the great demand of energy is the top priority to deal with. Wind energy is one of renewable energies that has been used to mitigate the problem. To achieve the goal, an operational plan to integrate different kinds of energy generation must be efficient so that they can seamlessly work together. In addition, effective operational plan can also be useful to reduce the production cost of energy generation.

In this thesis, an algorithm of creating an operational plan between wind generation and existing distributed generators is proposed. This study is separated into two aspects. First, wind forecast model is implemented based on auto-correlation technique. Second, optimal operational plan of the previous wind forecast and existing distributed generation is present to meet the demand of the energy. The results of the proposed approach can be used to manage energy production effectively.

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