

**SOLVING UNIT COMMITMENT WITH SMART GRID
CONSIDERATION USING EVOLUTIONARY PROGRAMMING
INCORPORATING PRIORITY LISTING TECHNIQUE**

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ABSTRACT

This paper proposed Evolutionary Programming incorporating Priority Listing technique to solve Unit Commitment problem in power system economics and planning. The objective of this research is to find the most economical cost for the unit commitment problem using the proposed technique while at the same time to study the effect of smart grid consideration to the conventional grid system. This research used 10 generating units as its basis for simulation with 24 hours of time intervals. The Evolutionary Programming incorporating Priority Listing technique is tested alongside with Evolutionary Programming technique as benchmarking purpose for both conventional Unit commitment problem and Unit commitment problem with smart grid consideration. The proposed Evolutionary Programming incorporating Priority Listing technique with smart grid consideration is expected to produce a better outcome in term of its operational cost compared to the conventional system. Finally, the result of the simulation of Evolutionary Programming incorporating Priority Listing with smart grid consideration is shown to verify the performance of smart grid.

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