POWER DISTRIBUTION NETWORK VOLTAGE PROFILE ENHANCEMENT WITH THE PRESENCE OF RENEWABLE DG

Thesis is presented in partial fulfillment for the award of the Bachelor of Electrical Engineering (Hons)

MARA UNIVERSITY OF TECHNOLOGY

UNIVERSITI TEKNOLOGI MARA

MOHAMAD FAQRULL IZRALL BIN MAT FIAH
2010885168
MARA UNIVERSITY OF TECHNOLOGY
SHAH ALAM
JULY 2013

ACKNOWLEDGEMENT

The all mighty Allah has proclaimed in the Quran that He would assist us to surmount all predicaments. It is from my wise conscience and modest hear to devote immense gratitude to Him, for conferring with ideas and encouragement in the progression of completing this research.

My greatest gratitude and appreciation goes to my supervisor Assoc. Prof. Dr. Ismail Musirin for his guidance throughout the advancement of this research. It is indubitably essential to point out here that he had acknowledged me plenteous liberty to escalate my ideas in order to complete my research.

My gratitude also goes to my beloved family who always been supportive. Thank you to my best friends who were always being encouraging and kind hearted to share their ideas and knowledge with me toward the accomplishment of this research. My gratitude also goes to people who had helped me directly or indirectly in completing this research.

ABSTRACT

This thesis presents minimum voltage improvement of power distribution network with the presence of renewable energy. The study involves the utilization of sensitivity analysis as an analysis tool of determination of renewable DG installation location in the distribution system. However, only two types of renewable DG will be presented in this thesis which are solar DG and wind DG. Then, an optimization technique so called as Evolutionary Programming (EP) is used to determine the optimal size of the renewable DG based on minimum voltage enhancement. This is to ensure that the minimum voltage of the system could be improved. The simulation will be carried on the IEEE 15 Bus Radial Distribution System. Response for minimum voltage profiles were observed during with or without renewable DG. Next, Results obtained from the proposed techniques revealed that the voltage of power distribution network can be improved with the presence of renewable energy.

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