

**International Energy Journal, Volume 9, Issue 3, September
2008**

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Power Flow Solution for Balanced Radial Distribution Networks: A New Approach

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Abstract

This paper presents an efficient power flow solution method to analyze balanced radial distribution networks having high R/X ratio by using Tellegen's theorem (TT) and Kirchhoff's laws. A set of iterative power flow equations has been proposed at the computational stage to find more accurate value of injected current from the upstream at each node of a network. A computer program has been developed with the help of MATLAB Ver 7.0. The results obtained exhibit a better rate of convergence when compared to the existing backward-forward methods of power flow solution for various balanced radial distribution networks. The proposed method has a flexibility to extend for 3-phase networks also.

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