

## **Influence of Harmonics on Medium Voltage Distribution System: A Case Study for Residential Area**

**Authors :** O. Arikan, C. Kocatepe, G. Ucar, Y. Hacialiefendioglu

**Abstract :** In this paper, influence of harmonics on medium voltage distribution system of Bogazici Electricity Distribution Inc. (BEDAS) which takes place at Istanbul/Turkey is investigated. A ring network consisting of residential loads is taken into account for this study. Real system parameters and measurement results are used for simulations. Also, probable working conditions of the system are analyzed for %50, %75 and %100 loading of transformers with similar harmonic contents. Results of the study are exhibited the influence of nonlinear loads on %THDV, P.F. and technical losses of the medium voltage distribution system.

**Keywords :** distribution system, harmonic, technical losses, power factor, total harmonic distortion, residential load, medium voltage

**Conference Title :** ICEPE 2015 : International Conference on Electrical and Power Engineering

**Conference Location :** Venice, Italy

**Conference Dates :** August 13-14, 2015