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## Transmission Cost Allocation through Modified Equivalent Bilateral Exchanges

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### Abstract

*This paper proposes the use of two procedures to allocate the transmission usage costs. The first proposed procedure is a multi-stage transmission usage allocation procedure which is based on the equivalent bilateral exchanges (EBE). In the first stage, the system operator allocates the transmission losses to bus generators and consumers. Thus, the actual power generation and consumer levels are modified to new virtual levels according to the allocated component of the transmission power losses. In the second stage, the EBEs between power generation and power demand, at different buses, are computed then the usage costs of the transmission lines are allocated. The second proposed procedure is based on modified sensitivity factors (MSF). The proposed procedures are aimed at controlling the market transactions levels and rates between market users. Also, the proposed procedures exhibit desirable apportioning properties and are easy to implement and understand. Case studies based two test systems 5-bus test system and the IEEE 14-bus test systems are carried out to show the applicability of the proposed procedures.*

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