

# Economical Benefits by Contribution of Large Wind Farms to Voltage Control

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**Abstract** - Wind energy is the main installed type of renewable energies in Germany. Wind farms owner gets a fix payment for the generated energy. This payment is much higher than the average variable costs of conventional power plants. Wind farms do not participate at voltage control till now. Although, they can supply reactive power into the network. In this study it is assumed, that there is a reactive power market. Large wind farms are connected to high voltage networks.

It is shown, that fed reactive power from wind farms can contribute to minimization of the network losses in high and very high voltage networks. This fed reactive power leads to reduction of the complete demanded reactive power to support the voltage control by strong load too. Thereby, a part of costs of transmission system operator will be saved. These saved costs can be a contribution to reduce the fix payment of the generated energy of wind farms.