

POWER QUALITY MEASUREMENTS PERFORMED ON WIND FARMS IN TURKISH POWER SYSTEM

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ABSTRACT

The wind farm integration may cause power quality concerns in power systems. Integration of large scale wind farms into power systems presents some challenges that must be addressed such as system operation and control, system stability, and the power quality. Therefore, determining how much the power quality would be affected by fluctuant power production and by the connection of the wind turbines to the power system is the most important issue. Turkey has the highest share in technical wind energy potential in Europe. However the installed wind power capacity is only 0.20 % of total economical wind potential. According to Energy Market Regulatory Authority (EPDK) reports, new wind power plant license applications are reached to 78 GW by the end of the November 2007 [2]. Up to now, only 2 GW of the total license applications was permitted by Energy Market Regulatory Authority. In this paper, the effect of wind farm is investigated by means of power quality in the transmission network. The power quality measurement results show important indications about the real effects of the integrated renewable generations on the power system.