

# **IMPACT OF INCREASING PENETRATION OF SMALL SCALE PHOTOVOLTAIC (PV) GENERATION ON VOLTAGE IN DISTRIBUTION NETWORKS**

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## Abstract

This dissertation proposes the implementation of a simple voltage management technique that uses active power curtailment to alleviate the impact of high PV penetration on network voltage. This stems from the results derived using power flow simulations to illustrate possible voltage impacts in two different networks, which is also documented. The need for such a study was derived from the global phenomenon of increasing embedded solar PV connections to the distribution grid. Despite there being a variety of economic and environmental advantages associated with the installation of these systems, their potential impact on the grid has yet to be fully understood. Findings show that a voltage control strategy based on active power curtailment was a successful technique to alleviate voltage rise, overvoltage and voltage change impacts brought about by increased PV penetration on a distribution network.