

Title: A Simple Market Plus Controls Approach for Distribution Grid Voltage Management

David Holmberg, NIST Engineering Laboratory

Abstract: A comprehensive approach to voltage management is proposed that uses both distribution grid equipment and customer DER to manage voltages on the grid. Lessons learned from the NIST TE Challenge help to provide a foundation for understanding the capability of TE markets and other effective control methods. Based on this and other NIST research results, we propose an optimum entry point for TE markets in the next stage of grid development, and suggest a TE system coordination and control approach that can provide a stable grid voltage at a minimal cost to the system. This is made possible primarily through the effective engagement of DER for the provision of grid services, in addition to more intelligent grid management by the distribution operator.