



GRID EDGE SUPPORT & EFFICIENCY

SOLVE LOW VOLTAGE AND DYNAMIC VOLTAGE ISSUES

Problem: Low and dynamic voltage issues on the secondary-side cannot be solved by primary-side assets.
Solution: Distributed, dynamic autonomous Grid Edge Control.

Key Features

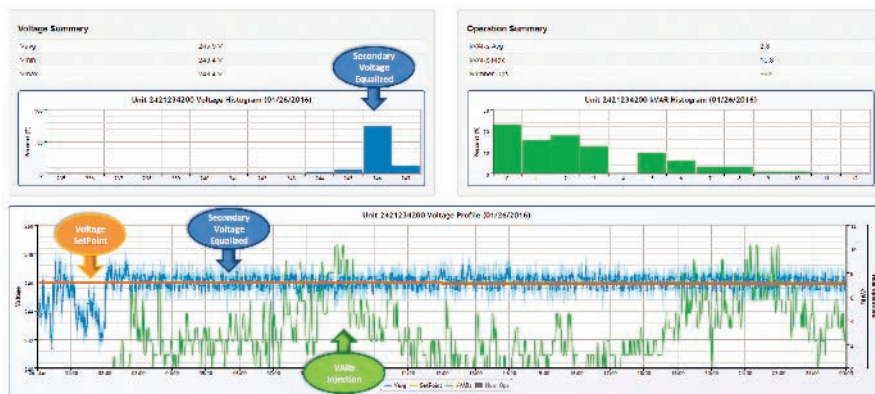
- » Autonomous, distributed and dynamic voltage support
- » Surgical deployment – scalable across an electrical distribution system
- » 24/7 monitoring – multiple communications options
- » Easy and live installation – single person crew
- » Support for high PV penetration



Installation of an ENGO unit on the secondary side of a service transformer.

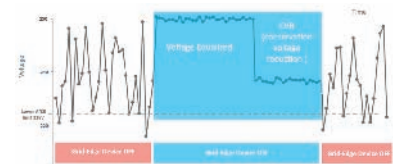
Solve Voltage Dynamics at the Point of the Problem

Varentec provides a targeted solution for feeder voltage issues by deploying field ENGO devices that provide sub-cycle correction of low voltages across a network, as shown below:



Fast Response, Proven Results

Real-time data confirms continuous equalization of secondary voltage.



Benefits

- » Avoid cost of traditional approaches: \$5-50,000 per node
- » No maintenance – no active cooling or batteries
- » Improve quality of supply and customer satisfaction
- » Reduce line and transformer technical losses
- » GEMS (Grid Edge Management System) provides data analytics and visualization

Grid Edge Voltage Support

Utilities report as many as 4% of all secondary-side locations have persistent low voltage problems. Low voltage can violate standards, and cause power quality issues and revenue loss for electric utilities. Varentec offers utilities an easy to deploy system-wide solution for low or dynamic voltage issues.

ENGO/GEMS solution can be used as a conservation voltage reduction (CVR) tool to shave peak demand or achieve 24/7 energy savings. The solution can increase reliability and capacity to improve overall grid edge energy efficiency while relieving the operational burden on primary side assets, which extends primary equipment life.

Real-Time Distributed Autonomous Voltage Control at the Grid Edge