

Voltage Optimizing Transformer

Date reviewed: 12/07/2020

Description of Technology		Energy Saving Opportunity	
<p>Voltage optimizing behind-the-meter transformers adjust the voltage supplied to a site to a level needed for optimum performance of end-use equipment. Adjusting incoming voltage from the utility can reduce overall energy consumption, particularly in commercial & industrial settings with their own high-voltage electrical distribution system, with variable savings depending on the type of loads. Note: by definition, the savings are coming from energy conservation rather than energy efficiency.</p>	Sector(s):	<input type="checkbox"/>	Residential
		<input checked="" type="checkbox"/>	Commercial & Industrial
	Applicability Criteria:	Large commercial/industrial sites with their own high-voltage electrical distribution	
	Efficiency Improvement:	Reduces energy usage by adjusting voltage to optimal level for a particular end-use	
	Energy (%) Savings Potential:	Highly variable	
	Demand (%) Reduction Potential:	Highly variable	
Strengths		Weakness	
<ul style="list-style-type: none"> Optimizing voltage at the transformer often leads to energy and cost savings Optimizing voltage can prolong the life of end-use electrical equipment Well-established in the market 		<ul style="list-style-type: none"> Savings are highly variable and difficult to predict. Different types of electrical loads (resistive load, inductive load, etc.) cause different reactions to reduction in voltage. Will require a custom incentive process that involves pre- and post-metering over a long time period. 	
Third Party Analysis/ Previous MTAC Reviews		Suppliers Known to MTAC	MTAC Status
<p>AEP Dolan Technology Center performed lab tests and Professor Jihong Wang of the University of Warwick performed theoretical analysis and simulation modeling for the energy savings realized when using Powerstar's EEVO transformer.</p>		<p>Powerstar</p> <p>PathZERO</p>	<p>Acknowledged to have energy savings potential and referred to individual PA for their own EE program consideration</p>
Market Development Issues			
Cost:	Depends on size of transformer. Can range from \$10K to \$50K		
Market Risk and Barriers:	None, already well-established in market		
Time to Market:	Currently on market		
Simple Pay-back: (Years)	Variable		

