

Voltage as a Service™ and grid stability

Voltage as a Service (VAAS)™ is an energy-saving service solution for regulating and optimizing the voltage supplied to electrical equipment to the optimal level for efficient operation. The purpose of VAAS is to reduce energy consumption, lower electricity bills, and decrease carbon emissions by ensuring that electrical devices operate at their most efficient voltage level.

Enhancing grid stability

Large-scale deployment of Voltage as a Service (VAAS) can enhance grid stability in several key ways.

Voltage as a Service (VAAS) systems adjust and optimize the voltage supplied to electrical consumers, which can contribute to overall grid stability and efficiency.

A detailed overview of how Voltage as a Service (VAAS) systems can impact grid stability is summarised in the table below.

Enhancement	Impact
Reduction in Voltage Fluctuations	VAAS systems can stabilize voltage levels by reducing fluctuations and maintaining the voltage within a narrow range. This helps to prevent voltage sags and surges that can affect sensitive equipment and lead to outages.
Decrease in Line Losses	By optimizing voltage levels, VAAS systems can lower the amount of electrical energy lost as heat in transmission and distribution lines. This increases the efficiency of energy delivery and reduces the load on the grid.
Improved Power Factor	VAAS systems can help in maintaining or improving the power factor of the grid, which reduces the amount of reactive power and enhances the overall efficiency of power distribution.
Support for Renewable Energy Integration	As renewable energy sources can cause variability in voltage levels, VAAS systems can help stabilize the grid by adjusting voltage levels in response to changes in renewable generation, thus enhancing grid reliability.
Load Management	By optimizing voltage, VAAS systems can influence energy consumption patterns and help in balancing loads across the grid. This can prevent overloads and enhance the stability of the grid.
Reduction in Transformer Stress	Optimizing the voltage can reduce stress on distribution transformers and other critical infrastructure, extending their lifespan and reducing maintenance needs.

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