

Financial Evaluation

Voltage as a Service (VAAS)TM is an energy-saving service solution for regulating and optimising 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.

Overview

Investing in "Voltage as a Service" (VAAS) is different from traditional capital investments in voltage optimisation (VO) equipment. VAAS is a performance fee based model where a service provider manages and optimises voltage for a facility in exchange for a recurring fee, with no upfront capital expenditure.

The evaluation of VAAS involves analysing the financial, operational, and strategic implications of outsourcing voltage optimisation to a third party. This Application Note provides an outline for conducting a financial evaluation for VAAS.

Evaluation Outline

Key step	Description	
Define the Objectives and Scope		Identify the primary objectives for considering VAAS, such as reducing energy consumption, minimising capital expenditure, improving power quality, or simplifying facility management.
		Determine the scope of services required, including the facilities to be covered, voltage optimisation, real-time monitoring, maintenance, and performance guarantees.
Understand the VAAS Model and Offerings	Service Components	Understand the components of the VAAS offering, including voltage optimisation hardware, software, installation, ongoing monitoring, maintenance, and reporting.
	Payment Structure	Clarify the payment terms, which could be based on a fixed monthly fee, a share of the energy savings achieved, or a combination of both.
	Contract Terms	Review contract length, service level agreements (SLAs), performance guarantees, and any penalties for non-performance or early termination.
Conduct a Baseline Assessment	Energy Consumption Analysis	Gather historical data on energy consumption, demand charges, and energy costs for the facility. Understand current power usage patterns and identify areas of high energy consumption.

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	Voltage Profile Assessment	Analyse the voltage profile at different points in the facility to determine current voltage levels, fluctuations, and variations. This data will help identify potential for voltage reduction and optimisation.
	Load Profile Analysis	Assess the load profile to understand how dynamic the voltage requirements are, as this may affect the service cost and potential savings under the VAAS model.
	Power Quality Assessment	Evaluate power quality parameters such as voltage stability, harmonic distortion, power factor, and transient events to understand the potential benefits of VO.
	Current Costs	Document current costs associated with energy consumption, equipment maintenance, and power quality management.
Evaluate Financial Implications	Operating Expenditure (OpEx)	Analyse the recurring costs associated with the VAAS service, including service fees, potential performance-based payments, and any additional charges for customisation or premium services.
	Cash Flow Analysis	Compare the impact on cash flow under a VAAS model (OpEx-focused) versus a traditional ownership model (CapEx-focused). Evaluate how the VAAS model affects budgeting and financial planning.
	Total Cost of Ownership (TCO)	Compare the TCO under VAAS to that of a traditional in-house VO system, considering the lifecycle costs, service fees, maintenance, and any ancillary costs.
Perform a Financial Analysis	Payback Period	Determine the time required to break even on the VAAS investment based on the cumulative net savings achieved. If there is no capital investment, the payback is immediate.
	Net Present Value (NPV)	Calculate the NPV of the VAAS investment by discounting the expected net savings (energy savings minus service fees) back to the present value. A positive NPV suggests the investment is financially viable.
	Internal Rate of Return (IRR)	Determine the IRR to assess the profitability of the investment relative to the company's required rate of return. A higher IRR indicates a more attractive investment.
	Return on Investment (ROI)	Compute the ROI by comparing the net benefits over the contract period to the costs incurred under the VAAS model.

Key step	Description	
Evaluate Non-Financial Benefits	Reduced Risk Exposure	Evaluate the benefits of transferring risks associated with voltage control equipment performance, maintenance, and obsolescence to the service provider.
	Improved Power Quality	Assess how VAAS can improve power quality and stability, potentially reducing downtime and increasing equipment reliability.
	Scalability and Flexibility	Consider the flexibility of scaling services up or down, adding additional facilities, or upgrading the VO technology without significant upfront costs.
	Extended Equipment Lifespan	Reduced wear and tear on electrical equipment due to optimised voltage levels.
	Environmental Benefits	Lower energy consumption leads to reduced greenhouse gas emissions, which can contribute to sustainability goals and corporate social responsibility (CSR) initiatives.
Assess Risks and Mitigation Strategies	Vendor Reliability	Assess the reliability, reputation, and financial stability of the VAAS provider. Consider their experience, expertise, and track record in delivering VO services.
	Contractual Risks	Analyse risks related to contract terms, such as fees, service level penalties, performance guarantees, and termination clauses.
	Performance Risks	Consider risks related to underperformance, unanticipated energy savings shortfalls, or potential disruptions during implementation.
	Mitigation Strategies	Develop risk mitigation strategies, such as negotiating favourable contract terms, ensuring clear SLAs, and considering backup options.
Perform a Sensitivity Analysis	Conduct a sensitivity analysis to understand how changes in key assumptions (e.g., energy prices, energy savings rates, installation costs) affect the financial outcomes. This helps in evaluating the overall value proposition of the VAAS model.	
Develop a Business Case	Prepare a comprehensive business case document that outlines the potential benefits, costs, risks, financial analysis, and strategic alignment with organisational goals.	
	Include key findings, financial metrics, and recommendations for stakeholders to make an informed decision.	



Key step	Description
Present to Stakeholders for Approval	Present the business case to senior management, finance, and operational teams to secure buy-in and approval for adopting the VAAS model.

Conclusion

The investment evaluation for Voltage as a Service requires careful consideration of both financial and non-financial factors. By assessing potential energy savings, costs, risks, and strategic benefits, stakeholders can make an informed decision about whether VAAS aligns with their energy management and financial objectives.

Voltage as a Service (VAAS) offers both immediate and long-term financial benefits while aligning with broader strategic goals related to sustainability, operational efficiency, and risk management. These benefits make VAAS an attractive proposition for businesses looking to reduce energy costs, enhance their environmental credentials, and improve their overall competitiveness.

Voltage as a Service (VAAS) can provide a very useful contribution to a company's plans to meet its Carbon emission targets, as well as reporting requirements. Voltage as a Service (VAAS) provides the right voltage to electrical equipment, ensuring efficiency, cost savings, environmental benefits and performance reporting while maintaining equipment performance and longevity.

For further information, contact us at sales@vaasco.net

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