

Secure Transmission Lines & Ensure Grid Reliability with Our **Vegetation Encroachment Detection**



Our Vegetation Encroachment Detection solution safeguards energy infrastructure by precisely **identifying overgrown vegetation near power lines**, enabling timely and preventive action. It delivers **real-time monitoring**, **actionable alerts**, and **geospatial insights** to reduce outage risks and support efficient maintenance. Built on **Azure Machine Learning**, **Azure Container Registry**, **Azure Kubernetes Service**, **Azure Cosmos DB**, and **Azure Blob Storage**, the system ensures scalability, performance, and secure data handling. It uses **Azure Custom Vision** for fast model training, **Segment Anything Model (SAM)** for pixel-level segmentation, and **OpenAl CLIP (Contrastive Language-Image Pre-training)** for advanced contextual image interpretation. With **few-shot learning**, it rapidly adapts to new or evolving patterns using minimal annotated data, empowering utility enterprises to **manage grid reliability** with confidence and precision.

Gartner projects **global IT spending** in the power and utilities sector to reach \$249.1 billion in 2025, a 10% increase from \$231.2 billion in 2024. This growth is expected to continue with a 10.3% CAGR, reaching \$385.6 billion by 2029.

Key Features



Real-time
Monitoring and
Detection



Predictive
Analytics and
Risk Assessment



Automated Alerting System



Comprehensive Reporting and Analytics

Core Benefits









Asset Management

Informed
Decision-making

Operational Efficiency

Grid Reliability

Impacts

~70%

Reduced Power
Outages

~2X

Lower Maintenance Costs

~3X

Enhanced Grid Safety ~40%

Risk Mitigation

~ 5 X Increased Asset Lifespan