

Advancing Energy Innovation with a Generative AI Roadmap for Executives

INFRASTRUCTURE CRISIS



The Issue: 70% of U.S. grid assets exceed 30 years of service, causing sudden turbine failures that cost \$50K each and trigger \$2.3M in lost production per incident.



Generative AI Solution: We ingest 2.3M sensor readings per second, vibration, temperature, runtime, and forecast faults up to six months ahead.



Executive Impact: Slash maintenance spend by 47%, extend asset life by 23%, and eliminate 89% of unplanned outages. One Veritis client saved \$23M in year one.



GRID COMPLEXITY



The Issue: Operators juggle 15,000 variables per minute. Manual decision wastes 23% of power and costs \$6.4 million per outage hour, totaling \$3.2 billion in annual inefficiencies.



Generative AI Solution: Our real time engine simulates weather, demand, and asset performance, then instantly prescribes optimal distribution strategies.



Executive Impact: Achieve 99.97% reliability, reduce O and M costs by 34%, reduce outages by 89%, and accelerate restoration times by 56%.



REGULATORY MAZE



The Issue: Compliance teams navigate 47 federal bodies plus dozens of state rules, risk \$2.8M per violation, 147 day approval delays, and spending 60% of their time on documentation.



Generative AI Solution: Continuous regulatory monitoring, auto generated reports, and preemptive violation alerts that adapt within hours.



Executive Impact: Halve compliance costs, guarantee 100% accuracy, and accelerate approvals by 73%.



SUSTAINABILITY AND EMISSIONS



The Issue: Complex process controls and manual tuning leave up to 20% excess emissions, risking fines, reputational damage, and \$5M in annual penalties.



Generative AI Solution: Our Generative AI continuously analyzes process KPIs, temperature, pressure, feedstock composition, and auto tunes operations in real time.



Executive Impact: Increase operational yield by 15% (\$4M EBITDA), cut CO₂ emissions by 20%, and avoid \$5M in regulatory penalties.



MARKET VOLATILITY



The Issue: Commodity price swings and demand uncertainty erode margins, utilities and producers lose up to 12% revenue during unexpected market shifts.



Generative AI Solution: Our Generative AI generates thousands of price demand scenarios, recommends strategies, and triggers automated trades when thresholds are met.



Executive Impact: Boost trading gains by 18% (~\$2.1M), stabilize margins, and confidently navigate market turbulence.

