

# Assuring Quality Performance of the Advanced Metering Infrastructure (AMI)

NETSCOUT Solution Enables Energy Company to Support Customer Demands and Meet Strict SLAs

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## OVERVIEW

### Business Challenge

- Needed to validate performance of AMI prior to production rollout
- Needed proactive alerts and rapid troubleshooting capabilities
- High availability for AMI was needed to protect their reputation

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### NETSCOUT Solution

- nGeniusONE® service assurance platform and nGenius® for Flows
- InfiniStreamNG™ appliances and Flow Collectors
- nGenius 5000 series Packet Flow Switch

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### Business Value

- Ensured the success of their AMI service with the NETSCOUT® solution
  - Achieved Five 9's SLA with proactive alerts allowing preemptive problem resolution
  - Improved customer service and reduced risk to company reputation
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### Customer Profile

This natural gas and electrical power company serves customers across nearly half of the U.S. states and parts of Canada. In addition to electricity and gas, they also provide many other integrated energy solutions to customers such as pipelines, storage, etc. They are committed to finding better ways to deliver safe, reliable energy to homes and businesses, along with creating a diverse infrastructure, including clean renewable energy.

The company is taking advantage of digital transformation to improve the end-user experience, enhance network performance, cut costs, and provide continuous improvement across the business. Their current Advanced Metering Infrastructure (AMI) provides bi-directional communication for over 3 million smart meters, allowing both detailed billing and customer access to detailed energy usage, such as heat and air conditioning costs.

### The Challenge

The company was preparing to roll out a new AMI to provide more detailed billing for their customers as well as detect degradations and outages, allowing faster response without customers reporting incidents. In addition, the AMI implementation would improve customer service by giving customers access to their usage information online. Armed with own analytics, customers could better understand and control their energy usage for things like heat, air conditioning, appliances and general consumption. In addition, the AMI implementation was key to maintaining the company's good reputation as outages over a certain magnitude must be reported by federal compliance standards.

IT needed to validate their ability to manage the AMI proactively in pre-production to ensure they would not risk internal or customer-facing problems. It was critical to validate the ability to proactively understand if there were problems with data from the smart meters in the AMI not coming through the gateways in the data centers prior to production deployment. Any failure was critical to address quickly, especially with all eyes on the AMI rollout. This required generation of pre-emptive alarms allowing IT to understand and correct problems immediately to maintain their Five 9's availability Service Level Agreement (SLA) for the AMI data. Ability to identify issues pre-production gave them confidence that should issues emerge in production, they would be able to rectify and restore the service quickly.

### Solution in Action

In order to validate service assurance capabilities for the critical AMI services prior to production and provide service assurance in production, this energy company deployed additional InfiniStreamNG appliances and an nGenius Packet Flow Switch to their existing nGeniusONE solution. During pre-production testing, the solution instantaneously identified, and alarmed on lost communication to the meters, proving the system would work. When AMI was put into production, the solution continued to provide immediate notification of failures, allowing IT to address them quickly and maintain their Five 9's internal SLAs on twice-daily meter reads. Typically, the failures were related to AMI communications gateways in the data center. When issues arose, and IT was notified by the nGenius solution, they were able to quickly troubleshoot and re-mesh the system to restore communication.

The IT team uses NETSCOUT service dependency mapping to view the full AMI service - from smart metering, to SAP connections, and the backend databases - to fully understand interdependencies and speed troubleshooting. Finally, in addition to automated alarms when problems arise, the IT team takes advantage of the nGeniusONE Service Dashboard for real-time status of the infrastructure.

### The Results

The company was able to ensure the success of their AMI services through the NETSCOUT solution with an investment that represented a small fraction (less than 1/2%) of the overall AMI project cost. They were able to successfully roll out the highly visible AMI project in the market using pre-rollout testing and prove they were able to immediately detect any AMI communication issues, allowing them to take corrective action before the service was impacted. Doing this ensured reliable customer service, enabling customers to take full advantage of the benefits of AMI to help manage their power consumption. The timely and accurate data gathering also facilitated detailed billing and prompt notification of power outages, enabling the company to quickly dispatch the proper crews to fix the outages.

Internally, the ability to preemptively re-mesh AMI communications around malfunctioning gateways proved to the business that the infrastructure could deliver on their 99.999% availability SLA. This was possible with proactive alerts provided by nGeniusONE based on the services that were created to monitor AMI gateway health. All-in-all, the solutions provided enhanced customer service and allowed the power company to maintain its reputation by ensuring their AMI functionality met federal compliance standards.



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