

Asset performance management for power generation

Drive improved productivity of power generation operations

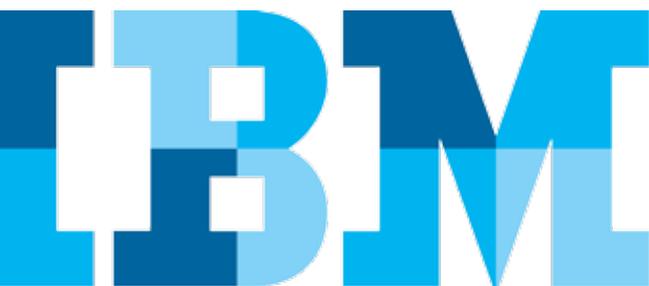


Highlights

- Helps reduce operational risk and unplanned outages
 - Provides integrated platform that can turn raw data into actionable intelligence
 - Enables more informed decision making through fleet-wide visibility and analysis
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Your generation company must deliver reliable and cost-effective electricity to meet growing consumer demands while managing the substantial capital and operating investments in your plant and its equipment. Profitable operations fundamentally depend on optimized efficiency of electricity production and reduced maintenance and fuel expenses. However, these variables represent complicated and expensive trade-off decisions that are further affected by constantly evolving environmental and climate-based regulations, and supply variability due to growing wind and solar generation sources. You face the challenge of attaining efficiency, reliability, flexibility and agility in asset functioning and performance—not just at the plant level, but across your entire fleet as well.

Asset Performance Management from IBM can provide a comprehensive and unified view of equipment, plant and fleet performance, considering asset health, operational efficiency, energy usage, emissions and maintenance. Using advanced analytics and business intelligence tools, it helps you gain a better understanding of generation fleet performance in relation to asset health, cost and operational value. By integrating asset management, predictive analytics and key performance indicator (KPI) visualizations, this offering can help you make more informed decisions for unit-based generation load dispatch, maintenance and operations from a fleet-wide perspective.



Our offering helps you improve the efficiency and reliability of your assets through detailed analysis of the trade off between maintenance strategies and operations—this can help you better understand the dynamics that affect the performance of your plant and equipment. Unlike highly specialized or localized performance assessment applications that provide unidimensional views into asset performance, this offering helps you gain a broader, more in-depth understanding of the factors that drive asset efficiency and performance.

We can help you aggregate, share and compare performance data at the plant or fleet level by integrating asset performance management and IT systems. These capabilities help you drive and institutionalize asset performance best practices throughout the enterprise.



Helping reduce operational risk and unplanned outages

Traditional condition-based monitoring, plant efficiency and asset management systems have only singular views of a problem; typically, they were designed to exist solely in either operations or maintenance functional silos.

Our offering is designed to coordinate these views into an integrated representation of asset (and plant) health and efficiency. By helping you better understand the tradeoff between operations and maintenance management, we can enable streamlined and automated operations and maintenance activities from a fleet-wide production and scheduling perspective. This helps you improve the reliability of production and maintenance planning while enabling you to more efficiently evaluate risks before outages or equipment failures occurs.

Our solution can integrate asset performance analysis, equipment health prediction, and maintenance execution while providing detailed insights on asset status and history to help monitor and visualize performance outputs, predict outages and downtime.

Significant features of Asset Performance Management are:

- Combined view of asset health and performance – predictive indications and equipment key performance indicators
- Ease of access to equipment work and maintenance history, supporting information (manuals, drawings and vendor sheets) and instrumentation data through a single, unified view
- Advanced visualization and analytics capabilities for detailed assessments of asset performance characteristics
- Analytical decision support systems including optimizers that provide suggestions for optimization of operations and maintenance processes based on the insights and assessments generated

Providing actionable intelligence through an integrated platform

By providing actionable insights that can help you make informed enterprise-level decisions and address overall operations and maintenance performance issues, our offering helps you improve the efficiency of your assets. This requires access to relevant background data that can be easily understood, interpreted and manipulated by multiple cross-functional disciplines and information systems.

Our offering helps unify disparate, asset-related data through the Solution Architecture for Energy and Utilities framework (SAFE), a software platform that enables information exchange, process integration and business collaboration between plant and fleet information systems. With the SAFE framework, your company can leverage an integrated information approach and service-oriented architecture design based on industry standards. It can help you perform a comprehensive, in-depth analysis of your assets, unifying and correlating data from plant performance systems to provide actionable insights across the following Asset Performance Management functions:

- Fuel Management – fuel selection, purchasing, contract management and supply chain management
- Performance Management – overall thermal performance (heat rate), with indicated contributions by individual plant systems and equipment

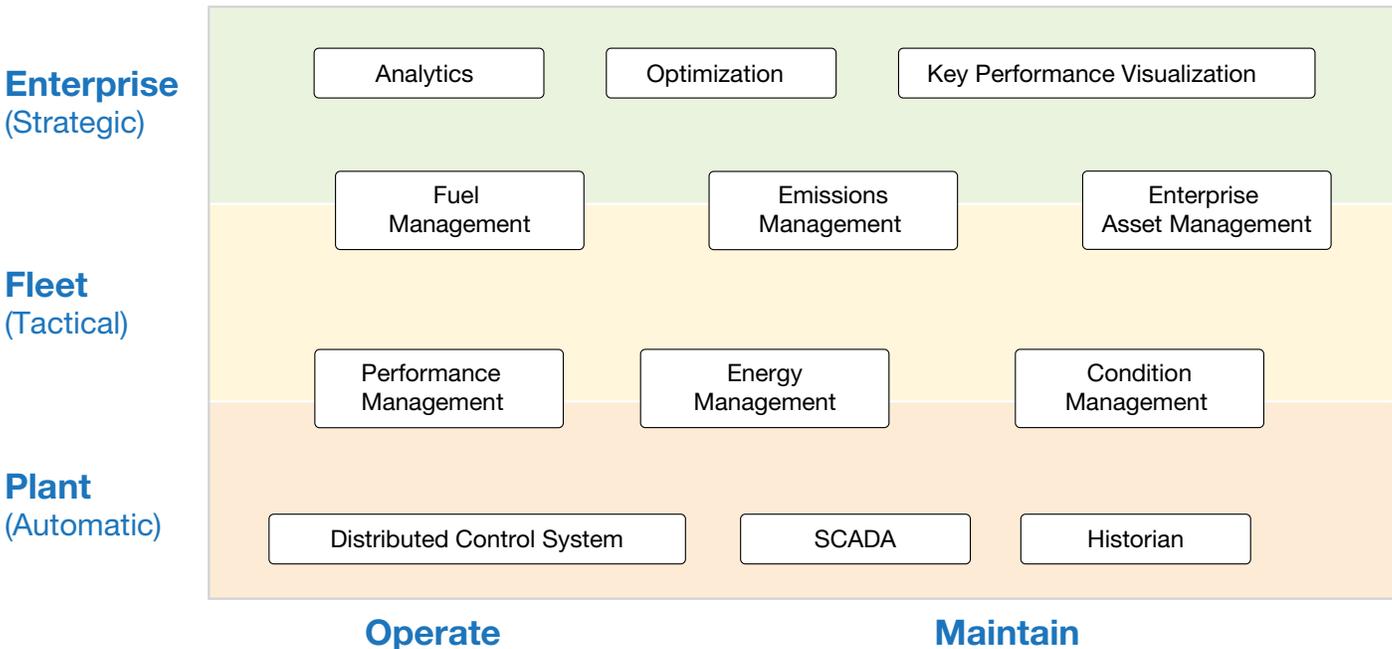
- Energy Management – detection and analysis of equipment and subsystem use of energy towards electricity production
- Emissions Management – measurement, tracking, and reporting of nitric oxide, sulphur monoxide Greenhouse Gas (GHG)
- Equipment Condition Management – manual and automated assessment of plant equipment health and prediction of outages
- Enterprise Asset Management – organization and tracking of all plant assets; maintenance, work order, materials, and workflow management.



Enabling informed decision making through fleet-wide visibility and analysis

IBM's SAFE framework provides a platform for business analytics and visualization, allowing access to data from supporting performance assessment systems. By aggregating this data and putting it into a common context for analysis, we can help you gain a better understanding of how your plant assets fundamentally behave and of their impact on overall plant and fleet performance. The integrated view can help you evaluate and optimize fleet planning for improved revenue generation, profitability, cost reduction, risk management, outage scheduling and environmental compliance.

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Asset Performance Management functions mapped to business processes

Why IBM?

Leveraging our advanced hardware, software integration services and research and technology capabilities, IBM can provide a comprehensive asset performance management offering designed to address various aspects of your company's operations—ranging from the technical to the financial.

We combine best-of-breed industry integration frameworks and business intelligence software with applications from our partner ecosystem to help deliver a high-performance, enterprise-scale solution that is specifically tailored to bring efficiency, flexibility, agility and reliability to the power generation industry. Asset Performance Management for Power Generation from IBM comes from the IBM Smarter Planet® suite of offerings for Energy and Utilities.



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