Optimizing asset integrity by combining domain expertise with data analytics

ABB Ability™ Asset Performance Management
Imagine having a maintenance program without surprises and complete certainty that you’re consistently making the right decisions on your plant or across a whole enterprise. ABB can help you get there.

ABB Ability™ Asset Performance Management couples deep domain experience with predictive analytics to help energy businesses predict, prioritize and reduce risk while decreasing operating expenses by up to 30%.
The challenge of maintaining reliability while increasing return on assets has never been greater

Asset performance visibility is critical

Energy businesses spend more than 30% of their operating expenses on unplanned maintenance. This includes unintended equipment failure and equipment underperformance, which leads to unplanned downtime and lower productivity.

A key reason for these maintenance-related operational inefficiencies is an ineffective maintenance strategy and a lack of equipment performance visibility. Too often, businesses rely on maintenance approaches that aren’t effectively integrated and aligned with desired facility asset performance.

Key drivers affecting maintenance strategies

Loss of experience
An aging workforce means less on-site skill and experience within operations, maintenance and engineering teams.

Market pressures
Competitive challenges mean a continuing need to improve reliability, enhance product quality and deliver shorter lead times.

Margin pressures
Cost and profitability challenges force producers to increase plant availability while decreasing maintenance spend.

Aging assets
Because maintenance gets more challenging as assets age, companies require more effective ways to maintain aging assets.

Asset complexity
As technology advances and digitalization becomes a part of components, maintenance requires a higher level of knowledge and expertise.

Expected performance improvement with ABB Asset Performance Management

- Improved production uptime: +10%
- Reduced shutdown durations: +20%
- Increased turnaround interval: +30%
- Decreased maintenance costs: +30%
- Return on investment: < 1 year
Introducing ABB Ability™ Asset Performance Management
Leveraging the power of predictive analytics

ABB Ability™ Asset Performance Management is a scalable enterprise solution that reduces unscheduled maintenance costs by helping you better understand and predict asset performance. You achieve higher reliability and production efficiency by minimizing or eliminating costly, unplanned downtime.

A proven solution for your enterprise
If your energy business is attempting to progress along the predictive maintenance journey, you are likely discovering that adopting predictive maintenance requires effective change management. After all, asset management strategy changes will have wide implications across an enterprise including modifications to processes, job roles, organizational structures and technologies.

ABB uniquely recognizes the challenges facing energy companies, and offers a superior combination of asset and process knowledge across the entire industrial plant.

Compare
Compare actual fleet, plant, equipment and component performance with expected performance

Predict
Uncover potential failures, their associated probability and predicted time to failure

Optimize
Monitor, analyze, plan and act for optimized maintenance and operation of critical plant equipment
Predictable operations
Asset Performance Management improves your return on assets

ABB Ability™ Asset Performance Management helps you extract the most value from your assets by avoiding the uncertainties, risks and costs of ineffective maintenance approaches. Using data-driven decision making, you optimize asset performance and maintenance across your entire enterprise.

With Asset Performance Management, you:
• increase efficiency and offset cost pressures.
• intervene at the right time, in the right measure.
• avoid unnecessarily servicing or replacing functioning equipment.
• identify issues before they impact production.
• increase return on assets as your maintenance organization intervenes just at the point of need. Not before. Not after.

ABB Ability™ Asset Performance Management portfolio
Helping you progress your maintenance strategy

- ABB Ability™ APM Asset Health
  Capability to monitor, analyze, plan and act for optimal maintenance and operation of critical assets

- ABB Ability™ Asset Insight
  Advanced monitoring, remote assistance, add-on analytic modules

- ABB Ability™ Smart Sensors
  Advanced sensing solutions

- ABB Ability™ Edge Insight
  Data collection and analysis with an edge gateway
Results from the field
Reducing unplanned downtime with more effective asset management

Case study: Enel Green Power

Enel Green Power predicts maintenance needs for sustainable hydro operation with ABB Ability™ Asset Performance Management

Customer needs
Enel Green Power develops and manages energy production from renewable sources at 1,200 plans in 29 countries. The company needed to improve sustainability, reduce maintenance costs and transform its performance, reliability and energy efficiency at 33 of its hydro power plants.

ABB’s solutions
Enel Green Power deployed ABB Ability™ Asset Performance Management to help operations and maintenance staff better plan for equipment maintenance, replacement and repair by gaining clearer visibility into equipment performance.

Benefits
• Reduced unplanned downtime
• More focused preventive maintenance
• Improved process efficiency
• Lower fleet maintenance costs
• Higher plant productivity

Key diagnostic indicator: the health status of a component

The three most abnormal health and fault indicators

All the health indicators in bar chart form

The time trend for each as shown above
Should you be investing in Asset Performance Management? Find out if ABB Ability™ Asset Performance Management is right for you

**Strategy**

1. Would you consider yourself Reactive / Preventative / Condition based / or Predictive? Where are you now for each major asset class?
2. Do you have plans to move towards a risk/condition-based maintenance strategy?
3. What are your pains with your current maintenance strategy? Where do you have reliability issues?
4. What is your current maintenance workforce?

**Assets**

1. What do you currently use to assess asset health? Is it the same across plants and assets?
2. What is your asset failure rate compared to your peers?
3. Have you had any major incidents lately?
4. Are you dealing with an aging fleet? Or a skills gap emerging in your workforce?
5. How is collaboration between operations, engineering & maintenance? Are they working from the same source of truth?

**Data**

1. How is your equipment instrumented? Where does this data go?
2. Could analyzing the data help? What problem needs solved?
3. Are you looking for remote monitoring, or for aggregating the data that you have in a single solution?
4. Do you have a patch work of monitoring solutions, while trying to implement a unified IoT strategy?
5. Are you successfully combining the wealth of historic data with new online sensor capabilities?
6. Have you implemented a standard data model for your asset analytics?