

## **112 Power Delivery Asset Management**

### **Program Overview**

#### **Program Description**

The Power Delivery Asset Management program offers a focused portfolio of products to support today's most important asset management objectives. These products include risk management, resource management, and decision support tools that assist asset managers in their support of strategic objectives. Key program thrusts include value models, decision support, and process guidelines and measurements.

#### **Industry Needs and Issues Addressed**

- Addresses the need to understand the risk and consequences of decisions
- Addresses the need for enhanced decision models that support strategic system enhancements
- Addresses the need for prudent management of company assets to maximize returns
- Addresses the need for enhanced system reliability and performance to optimize maintenance expenditures

#### **Impact**

- This program provides significant benefits, including an asset management framework that provides a consistent, systematic, and repeatable framework for transmission, substation, and distribution asset risk and performance assessment.
- Aging assets analysis methods enable members to reduce life-cycle costs by up to 35% through implementation of high-value repair and replacement strategies.
- An analysis framework addresses the interrelationship between equipment asset health and the systems within which they exist.
- Focusing resources on high-value projects will enable up to 70% higher return on equity and 40% higher return of assets.

#### **Key Accomplishments**

The key accomplishments of the Power Delivery Asset Management program are described in the following publications:

- Enterprise Asset Management: Executive Primer (1015385)
- Information Technology for Enterprise Asset Management (1013860)
- Case Study—Asset Management Strategies for Distribution Equipment (1013815)
- Asset Management Practices Survey (1013813)
- Guidelines for Power Delivery Asset Management (1010728)

#### **Current Year Objectives**

- Further implementation of the power delivery asset management framework
- Enhanced decision making process models
- Continued development of the asset management effectiveness model
- Enhanced development of the asset health/system health method
- Asset management workshop
- Information integration for asset health assessment
- Technical requirements for system performance and risk assessment integrated framework development

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### Industry Involvement

- Estimated 2009 funding: \$1.0M

### Program Technical Lead

Paul Myrda, 708-479-5543, pmyrda@epri.com

## Summary of Projects

Project Number	Project Title	Value
P112.001	Asset Management Workshop and Best Practices	
P112.002	Decision Making in Asset Management	
P112.003	Smart Grid Enabled Asset Management Assessment	

## Project Descriptions

### P112.001 Asset Management Workshop and Best Practices (067456)

#### Issue

Although proven and commonly used in other sectors, effective asset management processes still struggle to take hold in the power delivery sector due to a variety of challenges. These challenges include diversity in power delivery organizations, dimensions of value, the need to accommodate uncertainty into decision making, and the need to align responsibilities of individuals to higher-level corporate objectives. Utilities will benefit from developing systematic asset management processes and the analytical tools that support them. This project will focus on the development and dissemination of a variety of industry best practices and lessons learned in asset management. Through the introduction of these fundamental asset management elements and concepts, utilities can address these challenges.

#### Description

While this project will build on the wealth of EPRI's experience and prior asset management work, it will also assess the industry's effectiveness in implementing these strategies in light of new national initiatives such as an advanced metering infrastructure (AMI), smart grids, plug-in hybrid electric vehicles (PHEVs), and a selection of distributed resources. This year's program will include an asset management conference, a best practices strategy for maintenance and replacement, and some supporting process and practices for decision making.

#### Value

- The Asset Management conference and best practices inventory developed in this project can help members change their corporate culture by incorporating asset management best practices and aligning organizational processes around asset management goals.
- This project provides numerous financial benefits, including implementation cost reductions and improving the performance of asset management functions.
- Members may also reduce financial risk by using resources to monitor the performance of asset management projects, and applying program results to develop effective service provider relationships.

### How to Apply Results

The EPRI asset management conference will provide guidance to utility asset managers on specific topics related to effective implementation of asset management tools and processes. The conference will be supplemented by reports, webcasts and application support services for individual utilities that will enable them to implement the various strategies or models efficiently and effectively.

### 2009 Products

Product Title & Description	Planned Completion Date	Product Type
<b>Asset Management Conference:</b> The Power Delivery Asset Management Conference will address topics of interest in 2009 and build upon prior years' conferences and suggestions from attendees. This year's conference will specifically target other capital-intensive industries for extensible knowledge and insights to consider in the power delivery market.	12/31/2009	Workshop, Training, or Conference
<b>Define, identify &amp; capture best practice elements that support the AM model:</b> This project will identify, define, and capture the best practices that support the EPRI asset management model developed in 2008 as the Power Delivery Asset Management (PDAM) Guideline II. This additional information will help utilities continue to advance their company's asset management program.	12/31/2009	Technical Update
<b>Value Model for Measuring and Comparing Resource Allocation:</b> This work will establish a methodology for developing a corporate value model. The objective is to translate "high-level" goals, such as "improve customer satisfaction" into criteria that can be applied to make judgments and decisions about asset investments. The purpose of a corporate value model is to quantify value so that the values of various activities, such as capital investments and maintenance programs, can be measured and compared. The desire is to be able to link clear, specific, and preferably quantifiable criteria for all asset management decisions through a well-defined hierarchy to corporate goals.	12/31/2009	Technical Update

### P112.002 Decision Making in Asset Management (067457)

#### Issue

Making asset management decisions in today's business climate is challenging, for a variety of reasons. Decisions are based on variables that differ from company to company and region to region. But some decisions can be made based on characteristics that are shared by other businesses. By understanding the common elements of their business models, utilities can make decisions that will help limit the impact of decisions that would be based on their unique qualities. Identifying the common characteristics among utilities and other industries and making them part of structured decision making process is essential.

#### Description

This project will focus on the development of decision making models and processes within asset management that supports overall corporate strategic objectives. Utilities can overcome obstacles preventing systematic decision making by implementing this asset management process. While this project will build on the wealth of EPRI's experience and prior asset management work, it will also assess other industries that implement these strategies effectively.

**Value**

- The process and models developed for this project can help members streamline their corporate culture by incorporating a well-documented and structured decision model that supports their corporate project selection process.
- This project provides financial benefits through proper selection of projects that firmly support corporate financial objectives.
- Members may also reduce external risk by explicitly documenting risk factors in their asset management decisions, thereby ensuring effective resource use.

**How to Apply Results**

This program’s reports will provide guidance to utility asset managers on specific topics related to the effective implementation of decision models and processes. The reports will be supplemented by webcasts and application support services for individual utilities for each of the deliverables.

**2009 Products**

Product Title & Description	Planned Completion Date	Product Type
<b>Develop an Equipment Value Model:</b> This project will develop equipment value models based on either financial or performance-based metrics. The product will be a standard template or process for determining the value of equipment that will work together with the EPRI power delivery asset management process developed in the 2008 PDAM Guideline.	12/31/2009	Technical Update

**Future Year Products**

Product Title & Description	Planned Completion Date	Product Type
<b>Equipment Value Models:</b> Develop application and case studies for using equipment value models.	2010	Technical Update

**P112.003 Smart Grid Enabled Asset Management Assessment (067458)**

**Issue**

While Smart grid implementations provide companies with significant benefits, harnessing those benefits within the asset management process has its own challenges. On one hand, a smart grid becomes an enabler of asset management principles that in the past were starved for data. However, once a smart grid is installed and functioning, asset management systems may be overwhelmed by all the new data and information available within its system. Dealing with and preparing for this wealth of data is critical to a smart grid enabled asset manager.

**Description**

This project will build on EPRI’s experience in developing smart grid roadmaps as well as prior asset management decision models and tools such as the Maintenance Management Workstation that were effective industry led initiatives. This project will assess current smart grid installations and develop the concepts for leading edge tools built upon smart grid technology. These tools will fundamentally change

the asset management mechanism from one of educated guesswork to one of fact-based data driven decisions.

### Value

- The methods and tools developed by this project will help members evolve their corporate culture by incorporating smart grid enabled asset management practices and alignment of organizational processes with their asset management goals.
- This project provides numerous financial benefits, including implementation cost reduction and performance improvement of asset management functions.
- Members may also reduce financial risk by explicitly including more precise risk factors in asset management decisions, ensuring effective resource use by monitoring the performance of asset management projects and applying the program's results to develop effective service provider relationships.

### How to Apply Results

This EPRI report will provide guidance to utility asset managers on how to enable asset management assessments using smart grid technology. The report will provide specific topics related to effective implementation of asset management tools and processes within a smart grid environment. It will be supplemented by webcasts and application support services for individual utilities.

### 2009 Products

Product Title & Description	Planned Completion Date	Product Type
<b>Smart Grid Enabled Asset Management Assessment:</b> This deliverable will assess the impact of various smart grid technologies on asset management. Although it is anticipated that smart grid technologies will generally improve classic asset management approaches, this may not always be the case. Also, various data-reduction techniques may need to be employed to prevent data overload or asset management system overload from the new wealth of data. In addition to the improved data available, a new set of assets that make up the smart grid will need to be monitored and maintained. The smart grid also brings with it its own set of asset issues that may be unfamiliar to the power delivery asset manager.	12/31/2009	Technical Update

### Future Year Products

Product Title & Description	Planned Completion Date	Product Type
<b>Smart Grid Enabled Asset Management Assessment – continuation:</b> This product will continue the work started in 2009 and also include new areas of concern generated in 2009 through the initial assessment of smart grid technologies' impact on asset management.	2010	Technical Update