

Standards for Managing Utility Assets: PAS 55, ISO 55000

Public or private, if an organization fails to value and manage their physical assets, it will be difficult to maximize their potential and meet stakeholder expectations. Those organizations that take the time to plan for asset selection and acquisition, efficient and safe operation and maintenance, as well as upgrading and disposal will ultimately miss opportunities for improving service, reliability, and professionalism. To make it easier for utility companies to manage their assets for the greatest advantage, two emerging management systems provide guidance and structure for achieving more with less: PAS 55 and ISO 55000.

The parent of asset management systems, PAS 55, has been in use around the world for several years and has provided a stable foundation on which to manage assets. In the works is a newer standard through ISO known as ISO 55000 which eventually will eclipse PAS 55. Energy utilities looking to remain compliant with government regulations, competitive in a privatized energy market, and high-performing for greater customer satisfaction will do well by investing the time needed to adopt PAS 55, and later ISO 55000.

PAS 55: Optimal Management of Physical Assets

PAS (Publicly Available Specification) 55, which is published by the British Standards Institution, provides a 28-point requirement checklist of best practices for asset management within the utility industry: gas, electricity, and water, though it can also be applied to public facilities, mining projects, manufacturing facilities, as well as road, air, and transport systems. Though it began as a system for use in the UK, PAS 55 has been adopted in many countries and is fast becoming a worldwide life cycle management tool for organizations working with physical assets.

The system underwent an overhaul in 2008 with the help of 15 industry sectors from 10 countries and over 50 participating organizations.¹ Today, PAS 55:2008 is separated into two parts. Part 1 is the specification for the optimal management of physical infrastructure assets, whereas Part 2 provides guidelines for the application of PAS 55-1.



PAS 55 has become an essential tool for those working with physical assets as the management system of choice for controlling bottom-line costs and improving performance and service standards. Covering everything from design to equipment acquisition, lifecycle planning to cost-benefit analysis, commissioning to operation and maintenance, risk management to customer service, PAS is the only mechanism for ensuring an alignment between plans and real-world delivery of services. Following are the key features of PAS 55:ⁱⁱ

- A clear, internationally recognized definition of what good asset management means.
- 28-point checklist for good practices in lifecycle planning, cost/risk optimization and joined-up thinking.
- In widespread use by many enthusiastic users.
- Developed with more than 6 years, by over 50 public and private organizations in 10 countries and 15 sectors - incorporating feedback from users.
- The hallmark for demonstrating competent governance of critical infrastructure.
- Applicable to all sectors and all asset types.
- Extensive glossary and definitions of key terms.
- Detailed guidance and examples of good practice.

One of the important advantages of using PAS 55 is that it builds asset management competencies within an organization. To begin, because PAS 55 involves an independent audit, it pushes an organization to become familiar with their own systems (though even the PAS 55 self-audit will help with this). The scrutiny of outside eyes can help bring to light problems and identify opportunities for improvement.

PAS 55 also helps employees define for their organization what is meant by “assets”, determine lifecycle costs, and develop methods for optimizing investments and reducing risks. By doing so, asset managers develop skills in

benchmarking by learning how to objectively compare the performance of various components across multiple regions and systems.

Of course, ultimately using a system such as PAS 55 allows an organization to identify improvement areas and opportunities. Doing so is the start to selecting the best places for future investments, determining where upgrades need to be made next, and so forth.



Many organizations are also using PAS 55 as a way of complying with new regulations for the management of energy resources and reliability of service. For instance, PAS 55 is commonly used by electricity distributors in the UK and other European countries where certification is required as a way to demonstrate regulatory compliance. This has proven to be extremely important when it comes to funding. Since some investors require compliance with PAS 55 in order to demonstrate sustainable business practices, proactive adoption of these standards has already proven very useful for many organizations.

The PAS 55 – ISO 55000 Connection

The International Standards Organisation (ISO) has officially adopted PAS 55 as the basis for their ISO 55000 series of international standards. The development of ISO 55000 is an ongoing process (through an ISO Committee known as PC251) and the standards are expected to be published in 2014.

That said, much work has already been done to complete development of these standards. Three standards will be included in the overarching ISO 55000 series:

- **ISO 55000:** This will provide an overview of asset management, while also providing terms and definitions that will be used within the series.
- **ISO 55001:** Within this standard will be the specifications for a system to management assets. This will not cover information management systems such as software packages, though these are tools that are useful in managing assets.

- **ISO 55002:** This standard will provide the in-depth guidelines for how to implement the entire system.

In the end, utilities will be able to use ISO 55000 in an integrated fashion with other ISO systems, including ISO 9001 for quality management, ISO 31000 for risk management, and ISO 14001 for environmental management. It will also be compatible with OHSAS 18000 for occupational health and safety. Those wishing to prepare to adopt ISO 55000 are recommended to start by implementing PAS 55.

How Good Asset Management through Standards Lower Asset Failure Risks

A good asset management system is one that provides guidelines that improve a company's ability to deliver reliable, quality service that meets the highest environmental, safety, and customer service standards. One of the ways an asset management system does this is by helping to prioritize investment and maintenance schedules in order to lower asset failure risks. By analyzing current and future conditions, and assessing performance against a set of standards, a utility company can plan for problems before they happen.

Most good asset management systems will also continuously assess the current conditions of assets in order to assign maintenance and upgrades as appropriate at the right time. This helps to provide a balance between getting the most out of assets while making the most strategic investments in new equipment.

One example of a good asset management system structured around PAS 55 is that of the Power Systems Business Group (PSBG) of CLP Power in Hong Kong. By the time PSBG implemented PAS 55 in 2006, they had already been implementing an asset management system for almost a decade. But by working with an external auditor (The Woodhouse Partnership Ltd.), PSBG was able to achieve even higher levels of asset management excellence. In particular, they increased their knowledge and competency of their own systems, refined their capital investment strategy, optimized maintenance procedures, and developed an innovative system for managing supplier relations.ⁱⁱⁱ

Over the course of the first 10 years of asset management at CLP Power, PSBG was able to reduce customer minutes lost by 90%, respond to a 20% growth in load, expand assets, and maintain a competitive tariff. This was made possible only by

the push to innovate which came through their new-found ability to manage their assets more capably.

Consider also the use of PAS 55 by PG&E following the catastrophic San Bruno explosion in 2010 after which 8 people were killed and 58 injured. For PG&E, the accident rang up a bill of \$546 million in pre-tax funds for related actions following the incident, in addition to \$375 million in third-party liability provisions. These costs may have been avoided if PG&E had implemented a standard like PAS 55 prior to the accident. As it is, the company chose to do so following the accident and has benefited from it significantly since.

As PG&E's Jane Yura explained: "Our rationale is that it provides a very objective standard and a process in which to manage your assets from end to end. Asset management is a long-term proposition and it is important to have something that is very structured and sustainable over a long period of time."^{iv}

Not only does a standard like PAS 55 help to provide risk-based decision making structures on a very detailed level, it also helps to better define assets from top to bottom to identify potential risks at every point in a utility's business. This includes everything from workforce to suppliers to physical assets and beyond. By providing such a granular view of a company's portfolio of assets, they can introduce risk management systems throughout the value chain to remove failure risks or drastically reduce them.

Standards Push for Continuous Improvement

Perhaps one of the greatest advantages of implementing advanced asset management systems like PAS 55 is that they force an organization to establish a baseline and then continuously monitor their entire systems to ensure there are no critical breakdowns on an ongoing basis. This has tremendous benefits not only for delivering more reliable, cost-effective service, but also helps to substantially reduce risk. As governments increasingly require such certifications, the energy grid worldwide is no doubt going to feel the advantages in safer, more reliable systems.

Images via Flickr: [USACEpublicaffairs](#)

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Sources

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