

## GOOD PRACTICE ASSET RISK MANAGEMENT: A REGULATOR'S TALE

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### ABSTRACT

*In 2004, BSI published the asset management Publicly Available Specification (PAS) 55. This specification is applicable to network companies where physical assets are a key factor in achieving their business objectives and effective service delivery. Ofgem, the British regulator, is now encouraging GB Network Companies to undertake certification to PAS 55 and will monitor each company's progress towards certification up until 2008. Thereafter, it is expected that companies will be certified and report their certification status to Ofgem on an annual basis.*

*This paper provides a chronological account of Ofgem's interest in asset risk management, it will describe how good practice is going to be assessed, provide an overview of network company certification to date and discuss how asset risk management interfaces with regulatory practice.*

### A REGULATOR'S INTEREST IN ARM

Asset Risk Management is described as the systematic and co-ordinated activities and practices undertaken by a network company to manage its assets and their associated risks in an optimum manner to achieve its strategic and regulatory objectives. It refers to the policies, strategies, information, plans and resource, which integrate to deliver efficient and sustainable networks. The outcome of competent asset risk management is asset integrity, i.e. assets that are fit for their purpose and whose risk of failure is managed to meet an appropriate standard of performance. It is not about 'gold-plating' the assets. Poor asset risk management may lead to failing assets and substandard performance in respect of safety, environment and quality of supply.

#### The Background

The regulatory profile of asset risk management stems from the major rail incidents (most notably the Hatfield disaster) that occurred in the UK at the turn of the millennium. The implications of these asset-failure incidents reverberated around the infrastructure industry with a number of key stakeholders wishing to assure themselves that their infrastructure assets were being managed in a responsible manner.

The Office of Gas and Electricity Markets (Ofgem) is the economic regulator for electricity and gas in Great Britain. Ofgem's role is to promote competition and regulate the monopoly network companies that own and operate the electricity wires and gas pipes to ensure that there is

adequate investment in, and stewardship of, these networks.

As part of the five yearly price control process that regulates the monopoly networks, Ofgem requires each network company to report its asset expenditure and investment plans. However, the depth and focus of information gained from the questionnaire-based process did not fully provide assurance that asset risks were being managed sustainably. The output metrics reported for price control were lagging in nature and did not provide assurance about future performance levels. The Ofgem Quality of Supply incentive mechanism addresses asset performance by measuring outputs, but by its nature reports on past performance; although experience shows that setting targets and incentives can be effective in influencing near-term future performance.

As a result, any asset risk management deficiencies that may not immediately change performance, but have cumulative effect over many years, are not readily detectable. Therefore, Ofgem sought to refocus its regulatory approach to (1) promote sustainable risk-based investment decisions that deliver efficient performance of the energy networks in the long-term, (2) avoid long-term problems arising from attention solely on short-term efficiency gains within a price review period and (3) inform stakeholders on whether network companies employed appropriate good practice asset management in the stewardship of their networks.

Ofgem's policy is to not become involved in the day to day asset management of each company, as such decisions are best taken by those closest to the assets with tacit knowledge of operational priorities. Therefore, Ofgem sought a process by which it could assess the practices and procedures being used by network companies in the management of their infrastructure assets. The solution chosen was to undertake a survey to query the asset and risk management processes of each company. This resulted in the development of Ofgem's bespoke asset risk management survey (ARM survey), which was designed to probe and report across three key headline topics: business strategy, network strategy and asset life-cycle management. This ARM survey was undertaken in 2002 and provided valuable information in understanding how the companies carry out the process of asset risk management and highlighted areas for future action. The report published in 2003 explained the methodology adopted, presented the results using radar plots and provided illustrative examples of leading practice,[1]. The experience gained by Ofgem

was subsequently fed into a parallel initiative being led by the Institute of Asset Management – to develop a document that enabled a standardised approach to the assessment of effective asset management (PAS 55).

### **The Refocusing**

At that time, Ofgem's intention was to run the ARM survey periodically as a means of assuring Ofgem and other stakeholders that appropriate good practices were continuing to be deployed.

Since the completion of the 2002 ARM survey, there have been substantial industry restructurings. Mergers have taken place in the electricity distribution sector resulting in the number of electricity distribution network companies being reduced to seven, a single gas and electricity transmission company has been established, and four separate gas distribution network companies have been created.

In April 2004, Publicly Available Specification (PAS) 55 was published by the British Standards Institution (BSI). This specification, which has been championed by the Institute of Asset Management (IAM), sets out a systematic approach to the processes that link company objectives and the assets used to deliver them. In essence, PAS 55 does not prescribe mandatory approaches to asset management, but promotes requirements which allow asset owners to demonstrate effective asset management to stakeholders against an independent standard. Significantly, the specification requires ownership and accountability for Asset Management at "Top Management" level [2,3].

In addition to the above, in May 2005 the UK Government established the Better Regulation Executive, which was tasked to take forward a Government commitment to reduce the regulatory burden to the public, private and voluntary sectors [4].

Consequently, in 2005 Ofgem's existing strategy was reviewed and it was decided that Ofgem would take a different stance to the existing ARM survey for engaging the sector in respect of the future reporting of asset risk management practices.

In July 2005, Ofgem embarked upon a consultation exercise to examine the sector's appetite for a subsequent ARM survey or an alternative approach that encompasses the newly published PAS 55 framework. This consultation comprised of three iterations over an eight-month period and included a stakeholder seminar [5,6,7,8].

In short, Ofgem's preference was for each network company to undertake PAS 55 certification on a voluntary basis and for their certification status to be made publicly known.

### **The Future**

The main points of the consultation exercise were: (1) the anticipated linkages between the assessment of asset management practices and price control reviews, (2) the potential increase in workload by having to certify to PAS 55, and (3) the development of a robust scoring methodology and about the degree of public reporting.

Ofgem's view was that the assessment of the rationale for asset management expenditure is an inextricable part of the price control process and that certification was envisaged to compliment, but not replace, this aspect of regulation. An in-depth focused analysis would still be a requirement of the price control process, but it is envisaged that certification will make this a smoother process for both the network companies and Ofgem.

One of the key considerations of Ofgem's refocusing was to reduce the regulatory burden relative to the ARM survey in 2002. PAS 55 practitioners advised Ofgem that certification would neither necessitate the re-design of an organisation's management system nor require the wholesale revision of an organisation's asset management documentation. In addition, auditors would not need to undertake duplicate audits where other ISO compliance standards and/or statutory frameworks cover aspects of the PAS 55 framework, e.g. in environmental and safety areas. Evidence gained from the ARM survey indicated that attaining BSI-PAS 55 certification would not represent an excessive challenge in either cost or time for the companies. This has been borne out subsequently by the experience of the network companies that have undertaken certification to date.

Finally, Ofgem called for the development of a consistent scoring system as a means of providing a high level overview of certification audit findings. This mechanism was seen to be of benefit to the regulator and the companies and would provide the means of assessing and highlighting asset risk management good practice to support continual improvement and to track trends over time. Ofgem was keen to see the industry develop an appropriate scoring system that it viewed as a helpful tool rather than trying to impose an approach that could result in unnecessary conjecture.

### **ASSESSING ARM GOOD PRACTICE**

During Ofgem's consultation exercise the IAM recognised the value of developing an independent sector-neutral assessment methodology and scoring system which was free from commercial bias, and allows organisations to assess their capabilities against PAS 55. Thus after further discussion, the IAM proposed a project to develop a scoring system as a tool to support those organizations wishing to adopt the PAS 55 framework [9]. The premise for this project was to enable organisations to understand their

current asset risk management status, to determine where improvements might be beneficial and to allow an organisation to track such improvements. This work was considered to be complementary to formal certification to PAS 55 and could be undertaken as an integral part of the certification audit.

Ofgem and the majority of the energy network companies opted to participate in the IAM led project as project sponsors. Other sponsors included water companies, rail companies and asset management service providers. The project was managed by an IAM appointed Project Manager. The sponsors were represented on the Project Management Board who assisted in the management and delivery of the project, supported by a Validation Panel which reviewed progress and approved the final project output.

The main point of concern for all sponsors was the subjective nature of a scoring methodologies and how this could be minimised or eliminated from the new methodology being developed by the IAM.

The IAM project was divided into three distinct phases: Phase-1 research into existing systems, Phase-2 development of the IAM assessment methodology, Phase-3 delivery of follow-up workshops.

### **Phase-1**

There are a number of asset management assessment methodologies currently in place, both within the UK and worldwide, and many have been successfully applied across a wide range of industries and organisations. A range of systems were reviewed. All adopted a maturity based scoring system, rather than a check-list type approach.

### **Phase-2**

The IAM assessment methodology employs approximately 100 questions that reflect the 21 key requirements of PAS 55. This has been developed using a five-scale, 0 to 4 maturity scoring system, where 0 represents innocence and 4 represents 'excellence', importantly recognising that the most advanced organisations may exceed level 4 maturity in particular areas. The methodology seeks evidence based on structured questions and explains why the question is being asked together with criteria to assist the assessor, plus associated guidance notes.

### **Phase-3**

The methodology will be reviewed via pilot assessments together with stakeholder workshops early in 2007, before being made available publicly via the IAM.

## **WHO'S CERTIFIED?**

Ofgem requested that each electricity and gas network company undertake certification to PAS 55 by 2008 and report on its progress towards certification by April 2007.

Currently, three of the twelve large regional electricity and/or gas network companies that Ofgem regulates have achieved full certification to PAS 55: National Grid (electricity transmission) in November 2005, Western Power Distribution and EDF Energy both in November 2006. Ofgem also welcomes international interest in PAS 55 - as illustrated by the certification of Essent in the Netherlands.

### **National Grid**

National Grid owns and maintains the high-voltage electricity transmission system in England and Wales, together with operating the system across Great Britain. National Grid maintains and operates around 14,000 km of overhead line circuits and 620 km of underground cable circuits.

At the time of certification, Jon Carlton, the then Director of Network Strategy for UK Transmission at National Grid commented that National Grid had welcomed the introduction of a universal benchmark for asset management and that it was delighted to receive its certificate after a comprehensive review of its systems.

### **Western Power Distribution**

Western Power Distribution is the electricity distribution company for south-west England and south and west Wales. It delivers electricity to 2.5 million customers over a service area of 26,000 km<sup>2</sup>. Western Power maintains and operates around 46,800 km of overhead line circuits and 35,300 km of underground cable circuits.

Following certification, Robert Symons the CEO of Western Power said that he was delighted that Western Power was the first electricity distribution company to obtain the PAS 55 certification and that the company gained significant value from the assessment process which complements the company's vision to be world class in power delivery.

### **EDF Energy**

EDF Energy is the largest electricity distribution network company in the UK. It is responsible for the whole of London, the East and South East of England delivering electricity to 8 million customers over an area of 29,200 km<sup>2</sup> and. EDF maintains and operates around 47,440 km of overhead line circuits and 117,100 km of underground cable circuits. Paul Cuttill, Chief Operating Officer, EDF Energy, said: "We are delighted to obtain the PAS 55 Certification. As a company we gained significant value from the assessment process which complements our vision to be the best DNO by 2010."

## ARM INTERFACE WITH REGULATORY PRACTICE

Each network company was asked to report to Ofgem by April 2007 on progress toward certification and, certified companies were asked to provide the auditor's executive summary of their certification audit report and, where appropriate, a scored assessment using the newly produced IAM assessment methodology. Ofgem intends to publish certification status on a dedicated page of its website.

In addition, Ofgem is working with the electricity distribution sector to utilise network information to assess and monitor "network risk" as a relevant parameter of network investment.

Currently, a working group has been convened to derive metrics from actual network information (e.g. transformer operating capacities and asset condition data). The objective of the working group is to provide a snapshot of a network's present risk status. The metrics would also assist in the short and long term assessment to manage/maintain the level of "network risk" that each of the electricity distribution companies presently employ.

This would also demonstrate the processes in place within the network company for their physical infrastructure management and what criteria they have used to justify the cost/benefit of investments going forward.

Ofgem acknowledges the development of asset management processes underway within the industry (e.g. development of asset health indices for better trade off between opex and capex) and believes common metrics may facilitate robust comparisons across the industry.

## CONCLUDING REMARKS

Ofgem perceives PAS 55 certification to be a measure of adequacy and not a measure of excellence, i.e. certification would represent the minimum level of good practice necessary to demonstrate competence in asset management.

Ofgem believes that PAS 55 certification will help provide assurance of long term asset risk management and establish greater clarity of the policies and processes that underpin the investment decisions of network companies. An in-depth focused analysis will still be a requirement of the price control process. The main contribution PAS 55 certification will make to price control is to provide a smoother process for both network companies and Ofgem. Certification should make it easier for companies to respond to Ofgem's questions on asset risk management practices. Ofgem is confident that further benefits will be realised over time as certification matures.

The informal feedback from the companies that have attained certification is that they found the preparation and certification process valuable, with numerous detailed learning points revealed, and are pleased to have their asset management processes endorsed through an independent process and to a universal standard.

## Acknowledgments

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