

## **Report on Customer Service Performance Measures in UK Network Industries**

### **SQUEEZING HARD TO IMPROVE QUALITY**

**by**

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CCR Working Paper CCR 02-3

#### **Abstract**

Literature on performance measurement systems reached great heights in the late-1980s, and challenges of the traditional financial performance indicators being inadequate for measuring what is most representative of organisation-wide operations in the 1990s. This paper provides a descriptive consideration on the customer service aspect of performance measures, as imposed by the economic regulators of water and sewerage services, electricity (supply, distribution and transmission), gas (supply and transmission) and telecommunications. This paper is also offers a detailed description of the evolution and performance of the companies within these network industries, indicating any emerging trends behind the patterns that explain the operational effectiveness and implications to which the data draw our attention. The observations on the published performance measurement data indicate a general trend of improvement over time in the performance of all companies in all the industries. The greatest rate of improvement is most obvious in the earlier years of the Standards being established, nearer to the time of privatisation. However, there are patterns of performances by particular companies, or of particular Standards, where evidence of improvement is much “fuzzier”, and these raise questions of effective control over improvement of the Standards which are predominantly influenced by inevitable forces, such as the weather. Furthermore, such behaviour raises questions on whether there can be further “true” improvement where performance levels are already high in the latter years, or whether it is time for the redesign of the performance measurement systems as a whole, to suit the changing needs of customers with the passing of time.

May, 2002

*Keywords:* customer service standards, service regulation, utility quality regulation, performance measurement systems, customer satisfaction, UK network industry

**ISSN 1473-8473**

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This paper forms part of the project “Regulatory Design: External and Internal Performance Measures in Regulated Industries”, funded by the Economic and Social Research Council (Project Number: R022250147). The author is immensely grateful for the helpful and extensive advice and comments of Prof. Catherine Waddams, on the earlier draft of this paper.

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## 1.0 INTRODUCTION

A focal consideration of economic regulation and industrial policy has been understanding how to regulate firms with market power (Armstrong et al, 1994), and “in the process of regulatory reform, markets have been liberalised, industries have been restructured, and new regulatory methods and institutions have been created” (p.1). One original argument for the privatisation of the UK network utility industries was to make way for the expectation of lowered costs of production and a higher service to consumers (Parker, 1999), this being associated with an unbundling of services that would no longer be leading to a narrower definition of areas of natural monopoly. There is a trade-off between lower costs from the incentives which privatisation provides and the potential exploitation of excessive power over consumers. This begs policy innovations by government to prevent monopolistic abuse of power to achieve profits in excess of those achievable under conditions of perfect competition, and this warrants a need for economic regulation.

According to Waddams Price (2002), “one tool for controlling privatised companies with market power is to compare the performance of different companies, either for regulators to use some form of comparative regulation between monopolies, or to provide additional information for consumers as they are offered choice in previously monopolised industries”. Moreover, a method of monitoring the processes and mechanisms within the organisation is through performance measurement systems, arguably historically developed to maintain organisational control and “the process of ensuring that the organisation pursues strategies that lead to the achievement of goals and objectives” (Brignall and Ballantine, 1996: p.6). Inasmuch as the importance of measuring performance has been increasingly recognised across a multiplicity of industries and sectors, particularly in the 1980s, the effectiveness in using traditional financial performance indicators, such as the financial ratios of cost accounting, to achieve their objective of measuring the overall performance of the organisation has been challenged, particularly in the 1990s. Even the fad-phase of EVA<sup>®</sup> (Economic Value Added), a means to calculate “the profit that remains after deducting the cost of the capital invested to generate that profit” (Stern et al, 2001: p.15), was considered insufficient and ineffective to fully comprehend the management of organisational performance (Otley, 1999). Literature on performance measurement systems indicates that a number of alternatives

have been proposed, providing the initiative to include other elements for measurement (Kaplan and Norton, 1992; 1996), due to financial measures no longer being adequate for the changing nature of the present times (Johnson and Kaplan, 1987), that alternative frameworks ought to be applied (Fitzgerald et al, 1991; Eccles and Pyburn, 1992), and that customer satisfaction is a better indicator of organisational performance (Ittner and Larcker, 1998).

It imperative to focus on customer service levels for utility regulation because these ensure that companies provide to customers minimum levels of safety, reliability and efficiency of service as if under market conditions; on the part of the company, these also give them incentives to acquire a competitive edge. According to Baldwin and Cave (1999), “competition involves rivalry among firms for the customer’s business across all the dimensions of the service – price, quality and innovation” (p.210), and as one purpose of regulation is “ensuring that consumers and licensees reap the benefits that flow from privatisation” (OFFER, 1990: p.5), this is a vital element for exploration. Furthermore, Neely et al (1997: p.1142) argue:

“Customer service, like quality and flexibility, is a multidimensional concept and can be affected by both tangible and intangible factors. Customers may, for example, base their assessment of the level of service they receive on factors such as the value of the product or service, their satisfaction with the environment in which they receive the service and the speed with which the service is delivered.”

Therefore, the purpose of this paper is to provide a detailed account of the evolution and performance of customer service measures since they were first established, in each of the sectors, taking into careful consideration any connections between the changes in the required levels of performance as imposed by the economic regulator, the penalty payments attached for the companies which do not attain these targets, and the actual performance attainment levels of the individual companies.

The methodology of data collection applied for the preparation of this paper comes directly from published annual reports, predominantly those directly on customer services, of the economic regulators. The data from these reports were then inputted into a freshly created database, from which specific datasets were generated. In various instances, these data were recalculated to ensure consistency and comparability, particularly where the economic regulators had altered the formats in which the data were presented, or where

the data were omitted for particular years, either because they themselves were incomparable or unavailable, at the time of preparation or publication.

It is not only useful to collect together these datasets, but it is also interesting, as what lies behind the patterns in the performances of each individual company and Standard, is a moving story. However, the scope of this paper does not include the revelation of these hidden stories, although Crowther et al (2001: p.236) suggest that:

“It is already noted that one of the regulators’ duties is to protect consumers. However, there is also a requirement to ensure that the industry is able to continue into the future ... the regulator must protect the privatised companies to the extent that their survival is of importance. Also, the regulator’s job is dependent upon the continued requirement for a regulator and the success of the regulatory process. It is then possibly not too surprising that the results achieved by the privatised industries and the regulatory process itself have been defended by the regulators.”

Therefore, it is interesting to explore the extent to which, and whether it can be so that, the design of the performance measurement systems allows sufficient scope for year-on-year improvement in the network industries. In this way, following Crowther’s assertion, the work of the economic regulators will remain of utmost importance, to ensure that there will be improvement in these industries, whilst providing sufficient scope to enable such improvements.

To pursue these observations, this paper considers, in this order, the customer service performance measures of the electricity (supply, distribution and transmission), water and sewerage services, telecommunication and gas (supply and transmission) industries, within each a detailed description of their establishment, evolution, and performances. In this way, this paper endeavours to provide an insightful consideration of the effectiveness of the performance measurement systems that currently exist in these industries. The paper then offers discussion on the possible implications and explanations for the emerging patterns of the observed data, and closes with a conclusion that summarises the main issues that have arisen from these observations.

This paper intends neither to build nor test existing theory on performance measurement systems; this is left to future research. Instead, it intends to provide only the current state of development of these measures in the UK network industries under consideration, and some thoughts on the implications of such observations. It is anticipated that, because

existing literature on similar subject areas applies datasets that are either incomplete (Baldwin and Cave, 1999; Iozzi, 1999; Waddams Price, 2002) or outdated (Ogden and Anderson, 1995; Dean et al, 1999), the observations on the data in this paper endeavours to enhance and assist future research on similar topics, by adding supportive empirical evidence to forthcoming new theories, as well as consolidating these new assertions and informative “stories”.

The customer service “standards” that apply in the network industries vary tremendously and are industry-specific. There can be no simple cross-industry description applicable to all the Standards. This paper only places emphasis on the evolution and performance data of UK network industries as of April 2002. Typically, the economic regulators set Standards which are either compulsory whereby a penalty will be imposed for not achieving these, or minimum levels which customers ought have the right to “expect”. A stricter form of these is where the penalties have been made automatic, which offers a more accurate measure where these are indicated by the number of payments made (electricity Guaranteed Standards), vis-à-vis a percentage level of achievement, such as in water Standards and electricity Overall Standards. The details of these are therefore explored by consideration of each industry in turn, as immediately follows.

## **2.0 ELECTRICITY: SUPPLY, DISTRIBUTION & TRANSMISSION**

The electricity provided to households is divided into the companies that supply it, those that distribute it and the very few companies that hold the licence to transmit it. In the UK, this is regulated by one economic regulator, and a system of performance standards is set to govern the functioning of the companies that provide these services.

The Director General of Electricity Supply, in his first Annual Report of OFFER, announces that “ I see my prime task as ensuring that consumers and licensees reap the benefits that will flow from privatisation of the electricity industry” (OFFER, 1992: p.5), and in his opinion, “a competitive market, with efficient and financially sound companies operating within a stable regulatory framework, is in the best interests of consumers and the industry itself” (p.11). Essentially, a test of the effectiveness of performance measures

in the electricity industry is one which is capable of determining whether such performance achievement levels lead to the achievement of the regulator's prime task.

A report by the National Audit Office in 2001 (NAO, 2001) outlined that although "competition has reduced electricity bills for many customers ... some have experienced problems" (p.2), and that in spite of ongoing development in standards of customer services, "information on quality of service is, however, still hard to obtain" (p.5).

Therefore, this section provides an outline and overview of the evolution and progress of the performance measures used by the regulator for electricity supply, distribution and transmission, Office of Gas and Electricity Markets (OFGEM), formerly OFFER (Office of Electricity Regulation), and the companies in the electricity supply and distribution industries. This reports background information on the rationale behind performance measures in this industry, and then considers the electricity supply, distribution and transmission measures individually, and any emerging trends. The information results predominantly from published data and related documentation of OFGEM, although some of these data are reinterpreted and applied to exhibit a more meaningful linkage for the establishment of a year-on-year comparison.

A descriptive approach is taken in outlining patterns in the company performances, and the author cannot testify against the degree of accuracy and reliability of the data, as these are provided to and reported by OFGEM. Although reported performances are considered subject to some formal audit or independent assessment, even OFGEM announces that "companies are themselves responsible for their own standards of reporting, and the results are presented in this report on that basis" (OFFER, 1993a: p.3).

## **2.1 ELECTRICITY SUPPLY**

The first set of published data on the quality of public electricity suppliers (PESs) was the 1991/92 publication of "Report on Customer Service" (OFFER, 1992), by the fourteen Electricity Supply Companies in England, Scotland and Wales, with the purpose of helping customers "assess the quality of the service they currently receive and to enable them to compare it with the service provided by other Electricity Supply Companies" (OFFER, 1992: p.i). This annual report was renamed "Report on Services for Electricity



Customers” (OFGEM, 1999) in 1998, when the electricity and gas regulators, OFFER and OFGAS respectively, merged to become OFGEM. This report also records the “number of complaints that have been referred to OFFER and the Electricity Consumers’ Committees by individual customers and the number of customers disconnected for non-payment of electricity bills ... [which are] important indicators of the way in which the Electricity Supply Companies deal with their customers ...” (OFFER, 1992: p.i). A summary of customer services is also included in one section of the OFFER/OFGEM general Annual Reports.

The evidence from this paper suggests that the development of customer performance measures in electricity supply has been the most coherent and best-defined, vis-à-vis those of other utilities. Various external reviews were conducted for the development and enhancement of customer services for electricity supply (OFFER, 1993b), electricity distribution (OFGEM, 2001f), and for other utility services. The excellent development of measures for electricity supply could have been due to early review of customer preferences and expectations (OFFER, 1993b), as opposed to those conducted later for electricity distribution (OFGEM, 2001f), gas transportation (OFGEM, 2001g) and water and sewerage services (OFWAT, 2001b).

These Standards were established by a regulatory framework, by which sections 39 and 40 of the *Electricity Act 1989* set out standards to be achieved by the PESs and reported to the Director General. These standards cover the provision of services to customers in supply, distribution and metering services. It was reported that “one of the main purposes of the Standards is to set a common framework for customer service by the companies ... [and this] framework is intended to ensure a minimum level of service for all customers and to encourage companies to aim for higher levels of performance” (OFFER, 1998b: p.63).

There are two types of standards: Guaranteed Standards and Overall Standards. The former sets service levels which must be met in each individual case, and in the event of PES’s failing to provide the required level of service, the customers affected are entitled, upon request, to a package of compensation. This predetermined amount of compensation required as minimum payment is set by the regulator. The latter covers areas of service where it is not appropriate to give individual guarantees, but where the customers should have a right to *expect* a minimum level of service. For this, payments need not be made

for failure to maintain a particular standard. Although the exact performance level for each PES's Overall Standard may be different, they have been set by the Director General after review of recent performance, consultation with the companies, the Electricity Consumers' Committees and other customer representatives. These were given particular review in 1993, 1995, 1998 and 2000.

Table 1 outlines the current Guaranteed Standards and the levels of penalty payment required, which are compulsory, although not necessarily automatic. The GS scheme of performance measurement accounts for the number of claims made under each of the categories, and thus clearly does not directly account for the company's ability to provide the levels of standards, as not all customers who have suffered would make a claim. This is in spite of GS10 being a Standard to make customers aware of the GS scheme per se. For the evolution and development of the Guaranteed Standards, refer later.

Under the Guaranteed Standards, PESs are at least once a year required to send to each of their customers details of the Guaranteed Standards. Initially, the Director General neither had powers nor asked PESs to detail their customers of Overall Standards. However, the provisions of the *Competition and Service (Utilities) Act 1992* clarified the need, and now customers must be informed of the company's individual predetermined targets and their actual percentage performance of this target.

The Standards are subject to changes by the Director General, and "will need to take into account changes in customer needs and expectations" (OFFER, 1992: p.3). Furthermore, the Standards are used by the Director General to review the operation of the formulae which govern the maximum price the companies can charge for electricity.

Table 2 exhibits the original set of Overall Standards, and this framework to date has hardly changed, although the substantive level of achievement set for the PES have altered through time, before stabilising (see later).

The first report on customer services (OFFER, 1992) indicated particular and greatest concern on the standard of meter reading, which limits the extent to which the PESs can rely on estimated meter readings to produce bills. "Estimated bills are unpopular and cause problems for many customers, particularly when there is an unexpected high bill

following a series of under-estimates ... [so] there is a strong case for raising this Standard” (OFFER, 1992: p.i). Company performances of these two Standards improved well (see later), but other concerns were raised as the Standards developed over time.

The presentation of the first two publications of the report of the Overall Standards remained very clear and detailed. These included, for each of the PESs, the predetermined performance, achieved performance, and the raw data of each component success and failure. However, the third report (OFFER, 1994) to exhibit the data for 1993/94 presented the data on Overall Standards in graph-form with no data in figures. Only required and achieved percentages (of the past three years) were graphically presented. Furthermore, without explanation, data for standard OS3b were excluded from the report.

The 1994/95 report (OFFER, 1995) was the first in which a table of required and achieved performances for each company was presented, in addition to the graphic illustration. Data for standard OS3b remained missing.

The presentation of the Overall Standards data remained unchanged in the 1995/96 and 1996/97 (OFFER, 1996; 1997) publications, but for the reappearance of data on standard OS3b. No changes were made to the presentation of Overall Standards in subsequent publications.

A few key improvement issues were outlined in the 1997/98 report (OFFER, 1998b). A significant requirement would be for all the Overall Standards (apart from OS1a) to be set at 100 per cent. Further, common customer service obligations under the Guaranteed Standards for all PESs were made. These changes were made because the Director General expressed concern over the increasing role these Standards played as the competitive market developed; further, as second-tier suppliers would operate in more than one PES area, it would be more appropriate for Standards on distribution to be uniform across all PES areas.

Consultations were also indicated in the 1998/99 report (OFGEM, 1999), particularly in the areas of: a standard covering supply restoration in less than the current 24 hours; reducing the scope of the severe weather exemption; the introduction of a new Standard to

deal with frequent supply interruptions; and requiring all payments for not achieving a Guaranteed Standard be made automatically.

In the 1998/99 report (OFGEM, 1999), a Code of Practice was outlined, recognising that companies have important obligations to customers set out in the Codes of Practice, which form a key part of customer protection to specify clearly the standards customers should expect from suppliers. These codes were agreed with the Electricity Consumers' Committees and approved by the Director General, in preparation for the introduction of full competition in 1998. These Codes cover issues relating to: payment of bills by domestic customers, including guidance for payment difficulties; advice on energy efficiency; procedures for site access; and company complaint-handling arrangements. There is also the arrangement for promoting the awareness of the Codes and for monitoring the service delivered to customers. Further, suppliers must by licence report on their performance under the Codes.

There were originally (in 1991/92) ten Guaranteed Standards. The Director General's reviews led to a new one being introduced in July 1998, GS11 on prepayment meter faults. The standard requires companies to respond to prepayment meter faults within three hours (on weekdays and four at weekends). Table 3 outlines these changes over time.

The report of 1999/00 (OFGEM, 2000b) outlined further tightening of the standards. The Guaranteed Standard and associated Overall Standard covering supply restoration was changed from 24 hours to 18 hours. Moreover, the report of 2000/01 (OFGEM, 2002a) indicated that all overall standards, except OS1a and OS1b, remain at the attainment target of 100 per cent. This signals a relaxation of standard OS1b for all companies, as it fell to 99.5 per cent, previously fixed at 100 per cent since 1997/98.

Another dimension was the enactment of the *Utilities Act 2000*, in amendment of the *Electricity Act 1989*, which made it an appropriate time to review the arrangements in the Standards. The Act confirmed that OFGEM can "make regulations prescribing such standards of performance in connection with the activities of electricity distributors, so far as affecting customers or potential customers of electricity suppliers" (s.39A(1)), and that "if an electricity distributor fails to meet a prescribed standard, he shall make to any person who is affected by the failure and is of a prescribed description such compensation

as may be determined by or under the regulations” (s.39A(2)). With regard to overall standards, OFGEM may “determine such standards ... in connection with the activities of electricity distributors as ... ought to be achieved by them” (s.40A(1)(a)), and “arrange for the publication in such form and in such manner as it considers appropriate, of the standards so determined” (s.40A(1)(b)).

Whilst the electricity supply market successfully opened up in May 1999, and customers were offered a choice of PESs, customers were still dependent on the PES of the area for distribution services. Thus, for the PESs which remained monopoly suppliers, new arrangements for the Standards were issued. Guaranteed Standards continued to apply to PES tariff customers. Second-tier customers were to receive the same level of service on distribution matters from local PESs as received by the PES’s own supply customer. PESs must publish their own performance data in serving all their tariff and contract supply customers. Similarly, second-tier suppliers must publish their own Standards on supply issues and monitor these performances.

The report of 2000/01 (OFGEM, 2002a) signals many changes, particularly in terms of presentation of data. Due to the many recent changes in ownership of the companies, with associated changes in names, the 2000/01 report provides the current and previous company names, but for the purposes of this present report, to prevent confusion and complexity, the data herein are presented using the former names. The business brand names for distribution and supply are as exhibited in Table 4 (OFGEM, 2002a: p.9).

Furthermore, the report was also subject to many other substantive modifications. Due to the separation of businesses of the electricity companies, the report presents most of the data by separation into distribution and supply, and PES and non-PES, where appropriate. Again, for the purposes of consistency and ease of comparability, in this present report, only the original company name will be used, and data that are measured against the original united form will be applied. Additionally, for the total number of payments made by each company, due to the recognition of the varying sizes of the companies, not only are the total number of payments for each company presented, the number of payments made per 100,000 customers is also available.

For comparability purposes, for GS2, only restoration of supply within 12 hours can now be observed, as the second measure (restoration within 24 hours) has been reduced and measured as restoration within 18 hours. Moreover, the number of domestic disconnections is no longer reported in the OFGEM annual report, but the responsibility has instead been passed to the Social Action Plan, and the presentation of these data are no longer comparable with those in the previous OFGEM reports.

In fact, the last of this annual report on customer service standards that presents all data in the same particular format is that of 2000/01, as “responsibility for future reports covering performance from 1 October 2001 will pass to **energywatch**” (OFGEM, 2002a: p.2), the independent statutory consumer organisation, although OFGEM will still continue to collect the same data for its personal use and interest within its other regulatory functions. This is to make way for the introduction of fresh data from the newly established Information and Incentives Project, better known as the IIP.

### **Supply Standards: PES and Guaranteed Standard Performances**

The effectiveness and operation of the Standards may be assessed by evaluating the PES performances under these standards. A series of data collected as published from the reports (OFFER, 1992; 1993a; 1994; 1995; 1996; 1997; 1998b; OFGEM, 2000b; 2002a) illustrates either very effective functioning of a particular standard (smooth and obvious improvement in performances), moderate effectiveness (general improvement, with a few exceptions), and ineffective operation (where the data show no pattern in the performance data at all).

The overall performance among PESs and the industry indicate very effective improvement in the Standards to make and keep an appointment (GS9), notice of supply interruption (GS5) and a reduction in domestic disconnections. The year 1993/94 saw the greatest reduction in domestic disconnections, and this is most obvious in the industry figures. There is some slight fluctuation in the performance of GS5, such as the high number of payments made by South Western in 1992/93, and the sharp fall in payments by East Midlands in the same year. However, the overall pattern indicates an overall industry tendency of improved performance of the Standard.

Similarly, although many of the Standards have not indicated a clear improvement in the performances, for them, there are still patterns which emerge to indicate some kind of improvement or control. For instance, in the first few years of the operation of GS4, estimating charges, there has been a significant improvement in performance across the industry. Thus, estimating charges seem to be controllable. A very obvious fall back in performance was in 1993/94 where Midlands made a large number of payments, and the same for Norweb and ScottishPower in 1998/99.

But for the sudden large volume of guaranteed payments made by Yorkshire in 1994/95, there is a general pattern of improvement in GS7, for responding to meter disputes. In the first year of running this Standard, a large number of payments was made by ScottishPower, but it seems that it has kept this Standard under control since 1994/95. Again, but for the high volume of payments made by East Midlands in the second year running of GS3 (providing a supply and meter), there seems to be a general trend to improved performance in the industry. Despite the unusually high volume of payments made by Yorkshire in 1995/96, the industry trend still indicates an improvement in the performance of GS3.

Two Standards, responding to failure of a suppliers' fuse (GS1) and investigation of voltage complaints (GS6), show a general fall in the number of payments made for the Standards (ie, an improvement in PES performance) but a slight increase in the payments in the latter years again. In the case of GS1, of particular significance is the sudden increase in payments made by SEEBOARD in 1992/93 and Eastern between 1994/95 and 1995/96. It seems that the industry worsening of the Standard in the latter years is not due to the poor performance of any one particular company. In the case of GS6, the lowest number of payments made was seen in 1996/97, and increased again in 1997/98, predominantly due to SWALEC.

Finally, the performance of two Standards indicate no pattern or trend at all, notifying customers of payments due for the failure of any Guaranteed Standard (GS10) and responding to queries regarding charges and payment queries (GS8). As these two Standards are very similar, both involving contact with customers, it is not surprising that the performances of these are very similar. Unfortunately, there is insufficient evidence to warrant any valid commentary on the performances of these two Standards.

As the issue of control is imperative, for the PESs and the regulator, and more so as it ultimately affects the customers, it is crucial to evaluate the performances of the GS standards scrupulously under each PES. In this light, similar three distinctive patterns to that of the GS performance levels have emerged: very obvious improvement in performances (smooth pattern in the fall of the volume of payments made, signifying strong control), general improvement in the performances in the Standards (general trend emerging among the Standards), and again, where no pattern is obvious.

The data on East Midlands show a clear and general pattern of improved performances, with the exception of poor performance in 1994/95. The performance of Hydro-Electric shows a very rapid rate of improvement, even with the unusual poor performance of restoring supply within 24 hours in 1992/93 and 1996/97. However, Southern and South Western have shown excellent control of the Standards and both PESs improved performance in all the Standards since they were first operated. The performances of Manweb indicate good improvement in the Standards over time. In 1999/00, however, there has been a minor increase in customer complaints and payment for poor responses to customers (GS1 and GS2).

The performance of several PESs indicate overall improvement in customer services. The performance of Eastern has generally improved. It seems that the performance in responding to customers and restoring supply within 24 hours is particularly high in 1994/95, which reflects the slight increase in customer complaints in the same year. The performance of Midlands is very similar; there is a slight indication of improved performances, except for the extremely high volume of payments made for restoring supply within 12 hours in the year 1995/96, and the high initial number of domestic disconnections and payments for responding to customers. Again, for ScottishPower, there seems to be an emergent pattern of improvement in customer service but for the exceptionally high number of payments made for restoration of supply in 24 hours in 1993/94. Also, there seems to be a slight increase in the number of payments made for responding to customers in 1996/97.

Finally, various PESs indicate little pattern in the performance of the Standards. These include London, with exceptionally poor performance of payment in period (GS10) in



1997/98 and initial high domestic disconnection rate. The year 1998/99 saw very poor performance of restoration of supply for both Northern and Norweb, and no obvious trend, particularly for Norweb's notice of planned interruptions. There are too many fluctuations in the performance of the Standards of Yorkshire. It is unclear whether there is any correlation between the performance of any one of its Standards with another.

Although there are fluctuations in the performance of various Standards for SWALEC and SEEBOARD, particularly a poor general performance of many Standards in 1995/96, there is a clear improvement in the volume of customer complaints over time for SWALEC. For response to customers and payment in period for SEEBOARD, it seems that 1995/96 saw the best performance in all Standards, but since then has taken a "U-turn" and the number of payments made under the Standards has increased again.

In 2000/01, for GS6 and GS7, the numbers of payments have more than doubled. In the former, the industry values increased from 9 to 13 (mainly attributable to Yorkshire), and for the latter, the number of industry payments rose from 23 to 59. However, in the cases of GS8 and GS10, the year of 2000/01 has seen immense reductions in the number of payments. The industry number of payments fell from 1,228 to 518 and from 994 to 328, for the two standards, respectively.

In general, the latest set of data (OFGEM, 2002a) raises doubts over whether the Standards can truly improve. For most of the companies, the volume of complaints has vastly increased. In the case of Eastern, from 858 to 1,867, for East Midlands, from 762 to 2,320, for Hydro-Electric, from 144 to 1,467, for Manweb, from 362 to 566, for Northern, from 1,754 to 4,884, for South Western, from 68 to 899, for Southern, from 497 to 1,816, and for SWALEC, from 141 to 1,213. OFGEM (2002a) also indicates large one-year increases in payments for restoration of supply within 12 hours for Manweb and ScottishPower which have seen increases from 0 to 26 and from 0 to 25, respectively. For ScottishPower, the number of payments made for responding to customers has also increased from 16 to 38. Other increases include from 1 to 24 for Northern's meter disputes, 12 to 95 for NORWEB's payment in period, and from 21 to 41 for Yorkshire's notice of planned interruptions.

## **Overall Standards – The Pattern of PES Performance**

Due to the variations in the minimum performance levels required and set by each PES, it would be inappropriate to evaluate the performance of each PES under the category of Overall Standards. Instead, it is more interesting to consider the pattern of performance of Overall Standards of each PES over time.

Generally, with the exception of Manweb and SWALEC, which had reduced the required level of various Overall Standards (and the relaxation of OS1b for all companies, in 2000/01), all the required levels of Overall Standards in the PESs have increased over time. Thus, the importance of considering the changes in the required levels of performance in juxtaposition with the actual performance level has become somewhat reduced. Their variations and fluctuations are outlined in Table 5, but still indicate a convergence to a tightening and levelling of standards over time.

Correspondingly, overall, the PESs performed increasingly well, indicating improvement in the achievement of these Overall Standards.

However, of particular significance, some PESs fell back on various Overall Standards. East Midlands suddenly achieved only 94.5 per cent for OS4 in 1993/94, falling from 100 per cent in the previous year. London saw sudden falls in OS8 and OS5 to 87.5 per cent and 77.8 per cent respectively. Yorkshire saw a sudden fall in the achievement rate of OS2 in 1993/94 to 89.5 per cent, and of a greater magnitude, the achievement of OS1a of Hydro-Electric gradually fell from 96.1 per cent in 1991/92 to only 76.6 per cent in 1995/96, and increasing again the following year.

Data for 1999/00 indicate greatest fall-back for Northern, in which the achievement of OS7 was 94.4 per cent, OS5 was 93.8 per cent and OS8 only 89.4 per cent. This is particularly significant, as many of the Overall Standards were increased by OFGEM to 100 per cent in the latter years.

Some surprising indications are manifested in the latest dataset of 2000/01. In the case of East Midlands, Eastern and Southern, these are attributable to the large decrease in the achievement percentage levels of OS1a, from 89.9 to 84.8, 93.8 to 91.1 and 92.2 to 89.1

percentage points, respectively. Other sharp falls in the achievement percentages can also be attributed to Eastern, London and NORWEB for decreases from 100 to 95.3, 99.4 to 79.6, and 99.3 to 92, respectively for OS2. The worsening of the percentage levels of OS2 is depicted in the industry average to fall in the year from 99.6 to 97.6 (see later). The only substantive company improvement of OS1a (of the magnitude as large as about 1%) can be attributed to Manweb (from 87.5 to 88.1) and SWALEC (from 89.3 to 91.4).

A different method of evaluating the effectiveness of the Overall Standards is to consider the *number* of OS's that have not been achieved by each PES in each year. It is also of interest to consider, in such instance, *which* OS is unachieved and the *percentage* by which there is underachievement. Further, by considering in juxtaposition the pattern of failure rate with the pattern of actual level of achievement, the overall "true" performance of each PES is explored. Refer to Table 6 for these details.

Thus, in considering the overall volume of PES unachieved Overall Standards, a pattern seems to be apparent. A general "pattern" is indicative across the PES, that initially there were a high volume of failures to achieve the Standards when they were first introduced, but gradually the achievement rate improved, with fewer failures, to an optimal level in 1997/98. In 1998/99, the regulator put all, except one, of the Overall Standards to 100 per cent, and the number of failures increased again in that year, albeit not as many as the earlier years, and gradually, the PESs have become acquainted with the higher required levels and the failure rate appears to begin to fall thereafter, despite a sudden rise in 2000/01.

In the case of the 2000/01 data, not even the relaxation of OS1b can curtail the increases in unachieved Overall Standards. From this, there is a slight indication of the re-emergence of a growth in the volume of unachieved Overall Standards, as indicated in Figure 10.

The increased volume of failures in 1998/99 does not imply a fall in the actual level of performance of Overall Standards, but rather a higher standard to achieve. This is evidenced by the examination of a graph of average PES OS achievements. It is clear that, with the exception of the performance of OS4 falling to 92.8 per cent in 1996/97, the average performances of all the Overall Standards have increased over time, and did not

worsen in the years of 1998/99 and 1999/00, despite increases in the rate of failure to achieve the increased standards.

Generally, the highest number of failures to achieve the Standards across the PESs is Midlands, especially in the years 1992/93 and 1993/94, but an improvement is seen thereafter. Throughout the time period, the greatest number of failures seems to be for OS1 and OS8. The PESs which have experienced the least number of failures are SEEBOARD, South Western, Southern, SWALEC and Yorkshire.

However, in considering the average OS actual performances of Midlands, SEEBOARD, South Western, SWALEC and Yorkshire (Figure 11), it is clear that the average performance of Midlands is actually not worse than that of the others. In fact, it performed better than South Western in the earlier years, and subsequently outperformed SEEBOARD and SWALEC. This incongruity with data on unachieved Overall Standards is due to different predetermined levels of required Standards. By reference to Figure 12, as the average level of Overall Standards required for PESs have increased at an active rate for all the standards, it is not surprising the companies find it difficult to achieve the standard required.

A summary of OS failures, depicted in Table 6, indicates that since the introduction of 100 percentage required levels in all but one of Overall Standards in 1998/99 (see Figure 13), all the PESs have at least one failed Standard since then. However, the pattern indicates a fall in this number of failures.

In considering the percentage by which the Overall Standards are unachieved by each PES, three classes of the same discussed “pattern” (as the volume of unachieved OSs) seem to become apparent: very obvious, moderately obvious, and where there is no pattern.

The three PESs in which the “pattern” is most obvious are Eastern, Midlands and Manweb. In the case of Eastern, the number of and percentage by which the OSs are unachieved are very high, and low in the latter years. This is the same for Midlands, but for OS1a for which the Standard was not raised to 100 per cent in 1998/99, which per se seems to gradually follow the same pattern. In the case of Manweb, the percentage by

which the OS is not achieved is greater in the latter years. These are indicated in Figures 14, 15 and 16.

Note that there are PESs which experience this same pattern, but only in a limited way, ie, where only one or two of the Standards follow this pattern. These are SEEBOARD, Southern, SWALEC, and Yorkshire. South Western's only failed to achieve two Standards in the latter years.

The PESs which show a strong resemblance to the general pattern are as follows. East Midlands has a high percentage by which it has missed the achievement target on, inter alia, OS4 for the years 1993/94 and 1998/99. London failed by 22.2 per cent in 1998/99 to achieve the Standard for OS5. However, this was not due to a sudden excessive rise in the required Standard, as the compulsory 100 per cent is only 2 percentage points greater than the previous year's 98 per cent required target. Northern's performance indicates a fall in the early achievement of OS8, since 1995/96, and further exacerbated by the 1998/99 increases in the Standards levels, inter alia. Norweb and ScottishPower follow similar performance patterns; they both only fail to achieve a few Standards in the earlier years and none as they have become acquainted with the Standards, but then fail again to achieve a few Standards when they have arisen in the latter years.

One PES, Hydro-Electric, seems not to follow the pattern at all (see Figure 17). It had failed to achieve the performance level in OS8 in the first year by 10 percentage points, but recovered by 1993/94. There was a one-off failure to achieve OS2 by 5.1 per cent in 1992/93. There were also failures to achieve OS7 and OS1b in 1995/96. These disappeared by 1996/97, but reappeared with OS7 and OS4 in 1998/99 at the introduction of the 100 percentage levels.

Again, the 2000/01 data indicate a number of particularities which diverge from the "patterns" of performance. The first is the recognition that East Midlands has underachieved OS1a by 5.2 per cent (only 0.1 per cent in the previous year). Second, the percentage of miss-rate for NORWEB and London has increased from 0.7 to 8.0 and 0.6 to 20.4, respectively. Thirdly, the 2000/01 data raise fears for the increasing size of underachievement percentage rates of OS7 for Southern, South Western, SEEBOARD and Yorkshire, with increases from 0.9 to 2.2, from 0.5 to 0.8, from 1.5 to 2.6 and from 1.2 to

2.4, respectively, and for these companies, the growth of OS7 underachievement commenced in 1997/98 with the introduction of cross-the-board 100 per cent attainment targets.

### **Required Levels of Standards, Penalties and PES Performance**

Of particular significance is the connection between the performance of aggregate PES Guaranteed Standards (for which Industry values are considered) and the predetermined required level of each Guaranteed Standard, and secondly the connection of that with the penalty payment levels. For these purposes, the graphs for the electricity supply industry, changes in the level of required standards per OS and the changes in the penalty payments per OS are considered. As the changes in the required performance level per OS and penalty payment per OS are predetermined, and predominantly at the same time, there is no need to consider any connection between them. Note that, for simplicity purposes, the penalties considered in direct comparison are for domestic consumers only.

The overall pattern of the industry performance of the Guaranteed Standards indicates a general improvement in quality over time. These patterns are more particular in the case of keeping appointments (GS9), estimating charges (GS4), domestic disconnections and the general level of complaints. However, some Standards have not performed well, particularly in the latter years. These include the restoration of supply (GS2), responding to customers (GS8) and the notification of payment required for the failure of the Standard (GS10).

Generally, the required levels of performance have tightened across the board, particularly in the latter years. However, responding to customer queries (GS8) was tightened from 10 to 5 working days in 1993/94, while others such as GS4 and GS7 were tightened in 1998/99 and GS2 in 1999/00. Nonetheless, notice of supply interruptions (GS5) was relaxed permanently from at least 2 days' notice to 5 in 1998/99. These industry comparisons can be shown by Figures 18, 19 and 20.

Comparing the industry performance with the tightening of the Standards, it is interesting to note that the poorly performed Standards of the latter years do not reflect the performance level of those which have been tightened in the latter years. Thus, it is

unclear why GS8 and GS10 have performed so poorly in 1999/00. Similarly, in spite of the tightening of GS4 and GS7 in 1998/99, these have still performed well throughout the time phase.

The corresponding predetermined penalty payments generally have increased over time. The bulk (GS1, GS5, GS6, GS7, GS8, GS9 and GS10) were increased from £10 to £20 in 1993/94. GS2 was increased twice, from £20 to £40 in 1993/94 and again to £50 in 1997/98. Of extreme interest is the rise and fall in the penalty payment for GS3; this rose from £20 to £40 in 1993/94, and was reduced back to £20 again in 1994/95, where it has remained since.

Although the size of penalty payments is increasing over time, with improved various industry Standards, it still cannot be concluded that these are directly linked. This is because there are some poor performers in the latter years, and there has not been any reduction in the penalty payments in the latter years. Similarly, it cannot be implied that the poor performances of Guaranteed Standards of the Industry are related to the changes in the amount of compulsory penalty payments. The size of penalty payments changes too infrequently to suggest any direct effect on the performance in the industry.

## **2.2 ELECTRICITY DISTRIBUTION**

Presently, also covered by the same provisions of supply in the *Utilities Act 2000*, electricity companies must make available data regarding the performance of the standards on the distribution of electricity to the customers. The main publication by OFGEM which produces data on the performance of the companies on distribution is entitled “Report on Distribution and Transmission System Performance”. Much of the data contained in this paper come from the reports of 1999/00 and 2000/01 (OFGEM, 2001d; 2002b), as these data were made available online for these two years too.

The opening paragraph of the 1997/98 Report (OFFER, 1998c: p.1) states that:

“All licensees who operate transmission or distribution systems are required to report annually on their performance in maintaining system security, availability and quality of service. This information provides a picture of the continuity and quality of supply experienced by final customers. Information is now available for each of the years since Vesting ... [The] report

continues to incorporate year-by-year comparisons to help identify trends in companies' performance."

The format of this report varies little from year to year, but due to the introduction of the Information and Incentives Project (IIP), operational since April 2002, the 2000/01 is the last of the traditional format, in order to ensure that "there is no gap in the published information prior to the conclusion of the current review and publication of data for the first year of operation of IIP" (OFGEM, 2002b: p.2)

This annual report opens with information on the overall security and availability of supply, measured in terms of the number of interruptions and supply minutes lost, experienced by customers connected to the distribution systems of the 14 distribution companies, in addition to measures on restoration times achieved.

There is the statutory requirement on the transmission and distribution companies to maintain voltage and frequency within prescribed limits, and the system operators must report on incidents which cause excursions outside the prescribed limits for both frequency and voltage. For the purposes of this paper, security will be considered by the measurement of supply interruptions per 100 connected customers; availability will be considered in terms of minutes lost per connected customer; and the quality of distribution service in terms of the percentage of interruptions due to distribution faults that are restored within 3 hours and within 24 hours.

### **General Patterns of Performance for Distribution Businesses**

In view of the company performance for supply interruptions, generally, the evidence indicates a gradual improvement over time. This is most obvious in the case of SWALEC, with a gradual fall of customer interruptions (CIs) per 100 from 284.6 in 1990/91 to 152.7 in 1999/00. Some companies seem not to have improved in this Standard. London, for example, although it has the best supply performance, has remained the same throughout the years. In 1990/91, this was 40.68 and by 1999/00, this has only changed to 36.9, per 100 connected customer.



However, if the average of the industry is considered in greater detail, it is clearer that there has been a huge improvement in this Standard over time. The average industrial performance has fallen from 123.6 interruptions to 87.3 interruptions per 100 connected customers, which indicates a high rate of overall improvement (as shown in Figures 21 and 22).

The same can be observed for supply availability. The range of customer minutes lost (CMLs) per connected customer is extremely wide, and is difficult to observe an obvious improvement in the service. Of particular significance is the extremely poor standard of East Midlands and Midlands in 1991/92, with 1003.9 and 397.8 minutes lost per customer, respectively. Nonetheless, in view of the average performance, it is clearer that there has been a gradual improvement over time, and that the unusual poor performance in the opening year is predominantly due to that of East Midlands and Midlands.

The quality of service aspect is measured by the percentage of faults due to distribution faults not being restored within 3 hours and 24 hours. Thus, a fall in the pattern would indicate an improvement in performance over time. In both instances, there were wide ranges of performances across the companies. Of particular interest was the extremely poor performance in 1992/93 of East Midland in both cases, being 35.2 and 16.5 for non-restoration within 3 hours and 24 hours, respectively. Correspondingly, this raised the average performances of the two time bands for 1992/93 from 14.3 per cent and 0.8 per cent to 16.5 per cent and 1.82 per cent, respectively. By 1999/00, the performances improved to only 9.45 per cent and 0.00 per cent, respectively. However, although the 2000/01 data show improvement from the very first sets of data, compared to those of 1999/00, there were slight increases in the percentage of resolutions not met within 3 hours. Still, this presently raises fears about possible future patterns of worsening performances. These trends are shown in Figures 23 and 24.

Under the existing system of guaranteed and overall standards, the evidence indicates acceptable improvement over time. However, quality of customer services is really only one facet of their purpose. The introduction of the Information and Incentives Project (IIP) initiated to address some of the weaknesses associated with the existing price regulation framework. In this, *inter alia*, it attempted to “strengthen the incentives on the electricity distribution companies to deliver the agreed quality of output and to value better

changes in the quality of output” (OFGEM, 2001c: p.1). Although this paper does not provide sufficient scope to incorporate all details of the IIP, it must be noted that analyses of electricity distribution performance measures have thus become difficult.

### **2.3 ELECTRICITY TRANSMISSION – The National Grid (NGC)**

Under the original *Electricity Act 1989*, the Director General of Electricity Supply has various powers and duties to carry out a number of functions, particularly in a manner he considers best calculated to secure that all reasonable demands for electricity are met, that licence holders are able to finance their activities, and to promote competition in the generation and supply of electricity. Furthermore, this includes additional duties to protect the interests of consumers, to promote efficiency on the part of transmission and supply licence holders and the efficient use of electricity. Section 9(2) of the above Act provides for holders of Transmission Licences to develop and maintain an efficient, co-ordinated and economical system of electricity transmission, and to facilitate in the supply and generation of electricity.

Note that in the context of NGC, under Condition 12(2) of the Transmission Licence, it shall “... draw up and submit to the Director for his approval a statement setting out criteria by which the performance of the licensee in maintaining transmission system security availability, and quality of service may be measured”.

There are three transmission licensees in Great Britain: The National Grid Company (NGC), and two Scottish companies, ScottishPower and Hydro-Electric. Specific measures for NGC are included later in this report.

NGC is not only the sole possessor of a licence to operate the national grid that transmits electricity at high voltage from generators to the Regional Electricity Companies’ local distribution networks, but it is also responsible for scheduling and co-ordinating power flows across the interconnectors between England and Scotland and the UK and France. Thus, it is required to maintain an efficient, co-ordinated and economical system of electricity transmission, and to facilitate competition in the generation and supply sectors.

The Grid Code and Condition 12 of the NGC's Transmission Licence sets out limits or security standards with the purpose of maintaining system security and quality of supply on the NGC system, and ensuring that generation capacity is matched with demand, voltage and frequency, and the flows are contained within the thermal limitations of the NGC system.

Data on performance measures, specific to NGC, are reported and published in a yearly report (NGC, 2000), in which system performance is monitored by reporting monthly variations in system availability, together with planned and unplanned system unavailability. For the purposes of this report, only the annual amounts will be considered.

Here (see Figure 25), system availability is defined as the total hours each circuit is available, as a proportion of the product of the number of circuits and the number of hours in the period. Overall, the graph of average annual system availability and winter peak system availability indicates a general rise in the achievement of this standard over time. The rates at which these two performances are improving are very similar.

The NGC Transmission System has interconnections with France and Scotland. Interconnector availability is the measure which indicates the level of availability of the transmission system interconnectors at the geographic boundaries of the transmission systems.

The pattern of the French Interconnector annual availability indicates a gradual improvement in the standard (see Figure 26). However, interestingly, the Scottish Interconnector's performance fell at first instance from 95.7 per cent in 1990/91 to 86.2 per cent in 1993/94, but had improved in the following year to 98.6 per cent and remained at a level above 95 per cent.

NGC monitors and reports on the security and reliability of the Transmission System in terms of the loss of supply incidents and estimates of the total energy unsupplied for the year. Performance is monitored by total estimated energy unsupplied from the NGC system for each incident and the average incident duration. An incident is defined as "any system event which results in a single or multiple loss of supply" (NGC, 2000: p.11). The

average incident duration is measured by the estimated total energy unsupplied (in MW mins), over the total of MW lost.

There has been enormous improvement in NGC's performance of average unsupplied energy per incident against the estimated unsupplied energy, between 1990/91 and 1991/92. The average incident duration has also generally fallen, indicating improvement in the standard, as indicated in Figure 27.

To ensure the quality of supply, the *Electricity Supply Regulations* permit variations of the voltage up to 10 per cent above and below the nominal at 400kV, 275kV and 132kV, and not exceeding 6 per cent at lower voltages. The Standard by which this is to be measured is when voltage excursions have exceeded 15 minutes. Similarly, the Electricity Supply Regulations permit variations in frequency up to 1 per cent above and below 50Hz. This is measured when the frequency excursions are for more than 60 seconds.

NGC's performance on these measures is particularly good, as there were only two years in which voltage excursions occurred. There was one in 1992/93 and two in 1997/98. Similarly, there were only in 1991/92, 1992/93 and 1993/94, one, one and four cases respectively of frequency excursions, and another three in 1995/96.

### **Summary & Implications**

It seems that the service standards in the electricity industry are very well segmented, considering carefully many related areas believed important and valued by customers. The Guaranteed and Overall Standards system applied in the electricity industry is the first of its kind, although these may subsequently have been brought into other utility industries.

Generally, the performance of the PESs against the GS and OS scheme has indicated strength and confidence in this performance measurement system. In most cases, particularly where guaranteed supply standards have been tightened and penalty payment sums have increased over time, the improvement has been incredible and repetition of this in other industries is much desired. Of particular interest was the introduction of compulsory 100 percentage levels of achievement in Overall Standards, which led to a

marked increase in the number of PESs not achieving these, as well as the increase in the number OSs which the PESs are not achieving. This happened in parallel with actual trends that indicated improvement in the percentage achievement of the Standards. This is a clear suggestion that the performance measurement system here is a problematic one. If, for instance, all PESs should meet all the required OS levels, there could not be any future indication of “improvement”. A good performance measurement system should strive to achieve this.

### **3.0 WATER & SEWERAGE SERVICES**

As with the privatisation of the electricity industry, the water and sewerage companies must be accountable for the manner in which services are provided to customers. Much of the literature suggests that, at the time of privatisation, the water industry still had its monopoly position intact, urging for a greater impetus to beckon forth effective development of a system of performance measure that can ensure a competent level of service to customers.

Ogden and Anderson (1995) outline the state of customer representation in the water industry prior to privatisation. Although they outline the original White Paper on water privatisation and the government argument that it would be more efficient at providing water services under market conditions, there is still a need to regulate in order to ensure the quality of customer services when privatised.

Prior to 1973, customer representation in the water industry was conducted via local authorities which also provided the water services; in 1973 this representation was passed over to the regional water authorities, and according to Ogden and Anderson (1995: p.539), in 1983, “customer representation gain[ed] a distinct identity”, whereby consumer consultative committees (CCCs) were formed. Subsequently, a unique system of performance measurement that governs the quality of customer services that still exists today were established. The focus of attention in this paper is on the current performance measures in the regulated water industry.

This section of the paper essentially explores the wide scope of performance measures in the water industry, and the approach will predominantly rely on data provided in the water regulator, OFWAT (Office of Water Services) published report, presently entitled “Levels of Service for the Water Industry in England and Wales” (OFWAT, 2001a). A brief outline of the evolution of these Standards, penalty payments required for water company defaults and the significance of what can be inferred from these findings are all considered in this paper.

### **Evolution of “DG” Standards**

The first Report on the non-financial performance measures in the water industry was entitled “The Water Industry of England and Wales: Levels of Service Information, 1989/90” (OFWAT, 1990). In this, it was clearly outlined that “the Companies” are required under “the Licence” (the terms of the Instrument of Appointment) to report on a series of specified Levels of Service Indicators. The collection of this information was intended by OFWAT to (a) provide customers with information on their service companies’ problems and performance; (b) enable the companies to demonstrate now and over time the effectiveness of their operational and investment programmes and their management of these vital services; and (c) enable all involved in the industry to compare the relative level of service provision across all the companies (OFWAT, 1990: p.1).

The Director General of Water Services monitors and regulates the companies under the *Water Act 1989*, and considers the data provided in this review. “By considering levels of service improvements over time and in combination with other physical and financial information ... the companies, their customers and shareholders, and the financial markets will be able to make performance and efficiency comparisons” (OFWAT, 1990: p.1), even if the indicators are not truly performance or efficiency measures themselves.

The original set of service indicators in the 1989/90 Report (OFWAT, 1990: p.3) involved eight primitively defined standards, simply known as DG Standards (Director General), the numeration, nomenclature and scope of which were modified over time. Table 7 outlines the original set of DG Standards.

It must be noted that the data collected to form the first report were not always collected on common definitions or based on proper systems of records with clear reporting links back to real events (audits). Essentially, the guidelines on the reporting of levels of service information were not finalised until June 1990, so individual companies had different methods of reporting. Caution must be applied when using the 1989 data for purposes of direct comparisons.

The 1990/91 report on customer services (OFWAT, 1991) indicated that DG4 became “Water Usage Restrictions”, instead of “Hosepipe Restrictions”. Of quintessential importance, in July 1991, the Director General had deleted the 1989/90 definition of DG8 because it was believed this indicator was not a relevant level of service parameter as Local Planning Authorities had adopted different consultation practices which seriously impaired the data.

The 1991/92 report on customer services (OFWAT, 1992) introduced a system of confidence grades for presenting the data of the 1991 reporting year, based on data reliability and data accuracy. The 1990/91 Report, presently entitled “Levels of Service Report for the Water Industry of England and Wales”, noted that: “... because of concern about the quality of information provided ... OFWAT required the companies ... to give confidence grades to the information provided [and] the information is audited by independent certifiers who have given an objective and expert opinion on these confidence grades” (OFWAT, 1991: p.4).

The 1992/93 report on customer services (OFWAT, 1993a) provides changes to the DG standards, adding specificity of requirements to them, as follows:

- DG1 Population at risk of water shortage
- DG2 Properties at risk of low pressure
- DG3 Properties subject to unplanned supply interruptions of 12 hours or more
- DG4 Population subject to hosepipe restrictions
- DG5 Properties at risk of sewer flooding
- DG6 Billing queries responded to within 20 days
- DG7 Written complaints responded to within 20 days

This was the first year in which a comprehensive set of data was included for the previous years’ performances. Four specific categories of performance were recognised:

- Response to customers – DG6 and DG7;
- Reliability of water supply services – DG2 and DG3;
- Adequacy of water resources – DG1 and DG4; and
- Sewerage services – DG5

Although these standards were confirmed in the report, data for DG1 and DG4 were excluded due to influences by climatic and weather patterns, for that year's publication. DG5 was also excluded because the data were only applicable to 10 of the 32 companies. Similarly, the data for these three DG standards were excluded again in the 1993/94 (OFWAT, 1994) report, with additional doubt regarding the consistency of the information reported. The definition of DG1 had been changed to "Population at risk of water shortage" in the 1994/95 customer services report (OFWAT, 1995), although data for DG1, DG4 and DG5 were not included in the Report, due to inconsistencies in the data collection process. The 1995/96 customer services report (OFWAT, 1996) marked a significant change in the DG standards. DG1 was removed, and DG4 was renamed as "Water Usage Restriction". Furthermore, two new standards had been established:

- DG8 Bills of Metered Customers
- DG9 Ease of Telephone Contact

DG8 shows the percentage of customers who receive at least one bill during the reporting year based on an actual meter reading. These can either be company or customer readings! DG9 concerns the ease with which the customer can contact the water company. Telephone traffic is monitored, and the response timing in bands of 15, 30 and exceeding 30 seconds. The data taken into consideration by OFWAT include: total calls received on customer contact lines; total calls answered; calls answered within three time bands (within 15, 30 and exceeding 30 seconds); average time to answer calls; abandoned calls; and when all lines are busy. For consistency, for the purposes of this paper, the data utilised refer only to that of telephone calls answered within 30 seconds.

The 1996/97 customer services report (OFWAT, 1997) shows changes in the standards of the DGs. DG6 had been reduced to billing contacts not responded to within 5 working days (previously 20) and DG7 had been reduced to written contacts not responded to within 10 working days (previously 20). Unfortunately, the data only exhibit these in



percentage form. Thus, for consistency, the latest publication (OFWAT, 2001a) was consulted for the purposes of this paper, which includes performance data for DG6 and DG7 from as far back as 1990/91.

In 1997, the National Audit Office also reviewed the quality of services provided to customers by the water industry (NAO, 1997), and found that these have generally improved since the privatisation of the industry. However, it suggests that the customers' satisfaction with the quality of services provided was insufficiently monitored, and recommends greater use of targets for the regulation of quality services, that OFWAT should set up best practices toward which companies should aspire, and conduct further research for up-to-date information on customer satisfaction.

Since 1997, the DG standards have not changed much. DG5 was, in the 1998/99 customer services report (OFWAT, 1999a), known as “properties at risk of flooding from sewers”, but, in the 1999/00 report (OFWAT, 2000), as “properties at risk of flooding from sewers (once in ten years)”. All other standards remained the same.

Nonetheless, it seems that OFWAT has taken up the advice of the NAO (1997) and furthered research into customer satisfaction, and published jointly with the Ofwat National Customer Council (ONCC) findings from a survey on the satisfaction with service provided by local water and sewerage companies (OFWAT, 2001b). Among other things, this survey report indicated 90 per cent general satisfaction with customer services received, and two-thirds of customers reckoned with “value for money” for the water and sewerage services received. The results also indicated a high level of satisfaction with telephone handling, which explains the increasing improvement in this standard in the latter years (see later). However, the customers saw dissatisfaction with the penalty payment levels of the compensation scheme, Guaranteed Standards Scheme (GSS), and this was one of the impetuses for the recent amendments (see later). The report also played a persuasive role in the design and implementation of the new Overall Performance Assessment (OPA) mechanism (see later for details).

Furthermore, the OFWAT Annual Report 2001-2002 (OFWAT, 2002a) announces that the ten Customer Services Committees (CSCs) and the Ofwat National Customer Council (ONCC) now work together under a new name, WaterVoice, which represents the

viewpoints of water customers. Further to OFWAT's maintenance of the existing standards of customer services scheme, WaterVoice conducts "regular audits of company practices ... supplementing the quantitative monitoring of service quality" (OFWAT, 2002a: p.16).

### **Data Collection Methodology for the Performance Trends**

The 2000/01 Report on the level of services (OFWAT, 2001a) indicates only the requirement for standards DG2, DG3, DG4, DG5 (three categories), DG6, DG7, DG8 and DG9. The industry percentages are available for all these standards from 1990/91 to 2000/01. All the data used in the analyses, with minor exceptions, and contained in this paper, were derived primarily and predominantly from those as published exactly in the OFWAT service standard annual reports.

For consistency, the collection of individual company performance measures for the early years of DG6 and DG7 were calculated. For DG6 (Response to Billing Contacts), the percentages of two bands were summed for the value referring to responding within 5 days for the years 1989/90, 1990/91 and 1991/92. Similarly, for DG7 (Response to Written Contacts), three bands were summed for the percentage referring to responding within 10 days, for the years 1989/90, 1990/91 and 1991/92.

Note that the performance data of DG3 do not show any *obvious* pattern. This could be partly due to inconsistencies in the reporting of the data. It must be noted that the data refer to *unplanned, unwarned* interruptions to supply for greater than 12 hours. The sets of performance data in the publications are not consistent. Instead, the numbers of affected properties were calculated by using the 1993/94 figures, where the number of properties affected in that year were divided by the percentage of properties below reference level. The product of these two figures (a common factor) was multiplied by all the other years' data of percentages below reference level, in order to estimate the number of properties. No performance was estimated for Bournemouth and West Hants because the denominator was 0 in this method of calculation.

## **Achievement Performances of Companies on the DG Standards**

By inspecting the performance levels of all the Standards in the industry overall, there is sufficient evidence to suggest a general increasing improvement for all the companies. This is further evidenced by the general decrease in the number of guaranteed payments being made over time and particularly in the latter years.

The graph of overall industry performance (since 1990) indicates general improvement pattern in all the Standards (Figure 28). Of particular significance is the poor performance of DG4 (Hosepipe ban) in 1995/96, at a rate of 39 per cent, from a previous rate of only 3 per cent in the previous year. Similarly, there is a gradual improvement in DG7, but for the unusual poor performance at 24.1 per cent in 1993/94.

Considering the performance of the individual Standards, it seems that three have demonstrated a smooth and obvious improvement in the performance of all the companies throughout the years.

Firstly, the company performances for responding to written contacts (DG7) is particularly good, as there is a clear convergence to a percentage level of above 90 per cent by 1997/98, where it remained. Of particular interest is the performance of Anglian, as the rate fell from a growing high, from 90.7 per cent to 50.7 per cent in 1993/94, and a jump back to 97.7 per cent in the following year. Bristol was originally the poorest performer, with a performance level of only 25.1 per cent in 1989. Interestingly, this level improved very quickly to 30.9, 61.3 and 97.5, in the respective years 1991/92, 1992/93 and 1993/94. Figure 29 exhibits clearly these patterns.

Second, the Standard for response to billing contacts (DG6) performed increasingly well, with a gradual overall improvement to levels above 90 per cent by 1998/99. In this Standard, the original worst performer was Severn Trent, with 40.9 per cent in 1989, but it improved dramatically in 1992/93 jumping from a level of 45.5 per cent to 83.3 per cent. Other companies saw sudden unusual slumps. Bristol, for example, suddenly fell from 76 per cent to 53 per cent in 1991/92, and increased again to 72 per cent the following year. In the case of Mid-Kent, in 1994/95, the Standard had fallen from 77.4 per cent to 61.1 per cent, and back up to 97.3 per cent the following year. Similarly, for Essex and Suffolk,

the peak of its performance was the 71.3 per cent in 1996/97. For these, it is reasonably justifiable to suspect measurement error. Figure 30 indicates these patterns, although very clearly a convergence of overall improvement is also clear.

Thirdly, the Standard for bills for metered customers (DG8) saw good improvements (see Figure 31). Initially, the poorest performer was United Utilities, with only 90.8 per cent in 1989, but this made a sudden improvement in 1997/98, jumping from 92.9 per cent to 98.1 per cent. Northumbrian also slumped in 1997/98 to 96.7 per cent, and Essex and Suffolk again in 1996/97 to 96.9 per cent from a previous 100 per cent achievement in this Standard. Of great significance is the performance of Severn Trent in 2000/01, which fell from 99.5 per cent in 1999/00 to 96.7 per cent.

However, it is particularly interesting to note that despite the fluctuations in the performances of this Standard, the general performance level is high (above 90 per cent) in all cases. Furthermore, although this Standard is a new one, the starting levels are as high as the Standard's counterparts of the same year, *vis-à-vis* the levels of those Standards of equal effectiveness in 1989/90. This suggests across-the-board ability to perform well.

It is interesting to see (from figure 32) a fall in the general number of properties at risk of flooding from sewers (DG5). This Standard measures the effectiveness of the companies' control over inevitable effects, such as the weather. This pattern is less obvious, but still, there is a convergence to a low rate of flooding. In this measure, of particular interest are Thames and Dwr Cymru. The former experienced a rise in the number of properties at risk of flooding from 30 in 1989/90 to 180 in 1990/91, and generally falling thereafter. The latter experienced in 1993/94 a sudden increase from 36 to 180, and a fall again the following year to just 28.

In contrast, there are Standards which do not indicate obvious improvement in the level of company performance over the years. In the case of ease of telephone contact (DG9) being a relatively new Standard, performances are difficult to compare (see Figure 33, which shows that only 5 years' data are available). Nonetheless, there was a fall in the Standard achieved by South East Water in 1999/00, from a level of 96.5 per cent the previous year to 68.6 per cent, and an improvement back to 74.5 per cent the following

year. Mid-Kent performed well since the establishment of the Standard in 1996/97, but fell dramatically in 2000/01 from 87.4 per cent to 50.6 per cent.

Finally, two Standards have demonstrated difficulty in tracking their pattern of general performance. The first is the pressure of mains water (DG2) and the second, unplanned interruptions to supply (DG3). In the former (Figure 34), Tendring Hundred had performed extremely poorly, which distorted the overall “picture” of industry performance of this Standard. These were as high as 45.7 and 45.1 connected properties below reference level in the years 1990/91 and 1991/92 respectively. In the latter (Figure 35), the incomparability of the data was predominantly due to the OFWAT reports changing format over the years of publication. Thus, instead of simply lifting published data from a range of options, only unplanned, unwarned interruptions to supply for greater than 12 hours *could have* been and *were* considered, for which the number of properties experiencing this problem was calculated/estimated for the entire year range, using the explained methodology. In this, Thames had a particularly high value of 217,001 properties in the first year, which distorted the “picture” of overall industry performance.

However, in order to establish a clearer picture for both these Standards, averages were monitored, and these show a slight pattern of improvement over the years. This is of particular importance in the case of interruptions, as it indicates a gradual improvement in the ability to control unexpected interruptions across the industry.

In observing the average graphs, it is very indicative that the unusually poor performances of the two Standards (by the specific two companies) have strongly influenced the average performances in the same years.

### **Penalty Payments – the Guaranteed Standards Scheme (GSS)**

Separate to the taxonomy of DG Standards, customers are entitled to guaranteed standards of service, as laid down by the Government, and the penalty payments which the customers are owed in the event of these levels not being met is known as the Guaranteed Standards Scheme (GSS). For this reason, the issue of penalty payments is considered at the end of this section of the paper, and not directly with the evolution and performance of the DG standards. The scheme is applicable to all customers, including potential

customers and those in debt. The numbering of these refer specifically to the table of GSSs (Table 8), and not that of the DG Standards.

According to a review on the compensation for customers by OFWAT (1999b): “when the scheme was first introduced in 1989, compensation payments were £5 [and] in 1993, they were increased to £10 and the scheme was extended to include business customers as well as household customers”. Payment levels were altered again for September 2001, and these current levels are outlined in Table 8.

Due to the few changes in these levels, it is difficult to compare them in juxtaposition with the changes to the actual performance levels by the companies of the DG standards.

When the first set of DG Standards were established by OFWAT, there were also intentions to establish “no-nonsense compensation schemes” to protect customers who received particularly poor standards of services, although these would not replace their statutory rights. These did not intend to cover all possible eventualities, nor would they preclude water companies from running compensation schemes that extended further than the minimum payments set out in this system.

Originally, the GSS elements did not warrant automatic payments. The 1992-93 Report on the levels of services (OFWAT, 1993a) stated that “from 1 April 1993, billing queries and written complaints not actioned within the required timescales attract an automatic payment from the company of £10 [which] should provide companies with an incentive to reduce further the number of delayed letters and in doing so improve overall service to customers” (p.12).

The 1998/99 annual report (OFWAT, 1999a) outlined that “all ten water and sewerage companies now have systems in place to automatically reimburse annual sewerage charges to all customers whose properties suffer from internal flooding from sewers [which] goes beyond the statutory requirement that requires customers to claim rebates of sewerage charges ... Ofwat will shortly place before the Secretaries of State ... proposals to extend the GSS ... [for] wider use of automatic payments, and tightening existing standards to reflect current performance levels” (p.8).

In 1999, a more enhanced GSS system was introduced, in which the following categories were added:

- telephone appointments now attract the automatic payment
- automatic payment if companies fail to provide adequate warning of a planned interruption or if interruptions run over the allocated time
- sewerage companies are required to reimburse annual sewerage charges to all customers whose properties suffer internal flooding from sewers, and the limit on payment of this standard has been removed [although put back in 2001 to a maximum of £1,000].

### **Summary & Implications**

The development of customer service performance measures in the water and sewerage industry has been somewhat erratic, with the establishment of some DG standards, the removal of some and the addition of more. These were then followed by some degree of tightening, some redefining and some modification in the way they were presented. In any case, when a uniform “currency” of performance data is made existing, be it calculated or readily available, this has indicated improvement for most companies for most standards. This is without doubt for the Standards of responding to billing contacts and responding to written contacts. These can only bring forth, firstly, the *why* question, and secondly, the *how*.

The performance measurement *system* will remain be the focus of consideration, and in the event of the *why* and *how* question not being justifiably answered, doubts would be raised over whether this *system* is an effective one. The performance of standards improving at the speed of response to customers unnecessarily infers any true improvement in the *quality* of each response. For instance, in the case of telephone response, a customer who is transferred across five call-centres to resolve a problem would have had his call responded to within 30 seconds, but unnecessarily the response he had desired nor of the quality he had anticipated.

Unlike that of the electricity GS and OS schemes, the compensation scheme available to the customers operates separately to the DG Standards. Because of this, it is difficult to explore whether there is any direct connection between the changes in the GSS

compensation scheme and performance of the water companies based on the GSS System, or whether it is just due to the readjustment of the DG standards required.

#### **4.0 TELECOMMUNICATIONS – Comparable Performance Indicators**

The intention of this section is to outline the evolution and state of performance measures in the telecommunications industry, since privatisation of British Telecommunications (BT) and the creation of the telecommunications industry regulator, the Office of Telecommunications (OFTEL). Due to the numerous mergers in this industry and the associated tracking down of changes in the companies, the feasibility and effectiveness of performance measures data for comparison purposes across companies are very difficult to obtain, as outlined in CPI (2001). For this reason, only two are briefly considered for the purposes of this paper: BT and Kingston, due to the long-established history of the companies.

The section presents material by outlining the background behind telecommunications service standards, defining what these mean. It then explores briefly how these have evolved and performed since they were first established.

##### **Background Information**

Under the *Telecommunications Act 1984*, companies are obliged to produce a Code of Practice for the establishment of standards of customer services. However, rather than the Director General establishing set standards, OFTEL has encouraged the industry to develop for itself a set of comparable performance indicators. Accordingly, in 1993, performance indicators common across the industry were established to monitor the quality of service to residential and business customers. Physical preparation for the data collection process was originally left to the individual operator companies, and commenced in late 1994. The first dataset was collected for the last quarter of 1995.

Furthermore, the European Directive on the application of open provision to voice telephony (Directive 95/62/EC) identifies information and various standards on telecommunications required across Europe. These include: supply time to install, fault



repair time, fault reports, operator services, payphones, billing, and network performance. These measures are intended to allow customers to compare performance on a like-to-like basis between European members. Although the individual companies collect such information, each European member is likely to offer different interpretations of these quality measures, rendering them inconsistent across Member states.

Since then, the responsibility of assembling the data in the UK was left to a third party incumbent, PE International and several consumer bodies, with support from OFTEL, and twice-yearly statistics on these performances are now published.

For the publication of the data, the companies providing the telecoms services are separated into three categories: directly connected switched services, where there is a direct link between the exchange and customers' premises; directly connected dedicated services, for business customers only; and indirectly connected services for the companies which do not provide a direct link to the customers' premises.

The original Comparable Performance Indicators (CPIs), when first established in 1995, fell into five main categories, for which particular measures were specified. Table 9 provides details of these performance measures.

It seems that the performance indicators used in the telecoms industry are less rigid than those of the water and electricity industries. These measures are not numbered as they are for water (DG) and electricity (GS) standards.

Furthermore, OFTEL publishes lists of complaints and enquiries, and a breakdown of the complaint categories. These include: disputed bills and other billing problems, bill payment problems, charges, installations, numbering, payphones, phonebooks, privacy, quality of customer service, quality of telecommunications service, rental, repair service, network and discount services, general information request, and miscellaneous issues.

The report, "Telecommunications Companies: Comparable Performance Indicators" (CPI, 2000), provides information on the quality of service in a number of telecommunications companies, but does not take into account their differences when considering the performances. These may include: the specific area in which the company operates; size

of company; and age of company. It seems that the Industry Forum (made up of the main fixed network telecommunications companies) has been applauded “for its work in empowering consumers to make informed buying decisions”, and that “the CPI initiative shows that the UK’s telecommunications industry is prepared to work together for the benefit of consumers” (CPI, 2000: p.3).

The accuracy of the data is ensured by a two-staged process. First, these data are verified by independent auditors on the basis of an audit procedure agreed by all the participating companies. Second, a single independent body, the British Approval Board for Telecommunications, agrees to a sufficient level of comparability in the application of that audit process and results across telecommunications companies.

The auditors provide an opinion on the accuracy of the data provided, and the publication of such data is agreed to be sound, within 3 per cent of each of the indicators submitted. Where data are omitted by a company, or found to be insufficiently sound within the 3 per cent accuracy boundary, or found not to fall within the agreed procedures, this value is omitted in the report, and is specified.

Two main forms of quality are considered – the quantitative comparative performance indicators and qualitative customer satisfaction surveys (conducted by independent external agencies). CPI quantitative measures are the “hard” measures, as described, and the qualitative measures are the “soft” measures of the customers’ perceived levels of satisfaction with the overall or particular aspects of the service. At this point, it is necessary to define what is understood by the definitions of quantitative measures, as these are considered in this paper.

### **Definition of Comparable Performance Indicators**

The development of the CPIs has matured at a lesser rate than that of its counterparts in water and electricity. For this reason, it is necessary to clearly define what is meant by the measures and how they are defined and calculated. The following are the performance measures applied in the telecommunications sector, and the calculation of which brings with it a great degree of specificity. Since their establishment in the last quarter of 1995, the measures’ definitions have not changed, and they are as follows.

**Service Provision** represents the operator's performance in fulfilling orders for the provision of new services, or for changes to existing services, by the date committed by the operator to the customer. It is a measure of how well the operator meets its commitments. This is calculated as a percentage of the number of orders (commitment made to a customer to provide a product or service or to effect a change in the service) completed (when all items are available for use by the customer) on or before the date committed to the customer during the period, over the number of orders completed during the period.

**Customer Reported Faults** (the inability of an item to perform a required function resulting in an impaired service) is the measure that indicates the level of the customer-perceived reliability of the network service, measured by the number of customer-reported faults per 100 direct customer lines, per quarter. This is calculated as a percentage of the total number of customer-reported fault reports closed in the period, over the average population of direct lines during the period.

**Service Restoration** is defined as that which represents the operator's performance in restoring service within the operator's stated objective times (different for each operator). Note that different reporting methods are permitted, depending on whether the operator uses a system of appointments for agreeing visits to customer's premises. Operators who do not use appointments (meeting agreed with the customer where access is required to the premises) may only (i) report the percentage of fault reports restored in objective time; operators using appointments may choose to report in the same manner or choose to (ii) report the percentage of non-appointed fault reports restored in objective time and (iii) that for which appointments are made. The calculation for measure (i) is taken as the percentage of the total number of fault reports restored in objective time during the report, over the total number of fault reports restored during the period. Measurement (ii) is taken as the percentage of total number of faults reported without specific appointment restored in objective time during the period, over the total number of fault reports without specific appointment restored during the period, is taken. Finally, measure (iii) is taken as the percentage of total number of fault reports with specific appointment restored during the period, over the total number of fault reports restored during the period, is taken.

**Fault Repairs** is the measure that represents the extent to which an operator is unable to meet the objective restoration. This is calculated by taking the percentage of the number of customer fault reports restored by objective time plus “x” hours in the period, over the total number of fault reports restored in that period.

**Complaint Handling** is the measure that indicates the rapidity in the complaint process of the operator, within a 20-day period. This is calculated by the percentage of the number of complaints processed within 20 days, in the given quarter period, over the total number of complaints processed during that same quarter. Note that all communications are considered as complaints whether or not justified and by whatever means. Furthermore, billing inaccuracy complaints are included in this measure, even when already considered as a separate measure per se.

**Billing Inaccuracy Complaints** endeavour to measure the extent of perceived inaccuracy of the information presented in the bills produced by the operator. This is taken as the number of bill inaccuracy complaints received per 1000 bills issued. Of course, this cannot truly measure the volume of inaccurate bills, as it deals with complaints only, and also where there is a complaint, that complaint cannot indicate a true error on the bill. This measure is calculated by taking 1000 multiplied by the number of billing inaccuracy complaints received during the period, over the number of bills issued during that period (not including repeat bills and final demand notices). Note that a billing inaccuracy complaint is about the accuracy of the information on the bill, and not just the sum owing by the customer; however, it cannot include other billing matters, such as the format and frequency of the bill.

### **Evolution of the Comparative Performance Measures**

The first set of data published in the last quarter of 1995 was purely quantitative and did not report on the customer satisfaction aspect. Instead, these were included in the first report of 1996 for the categories of service provision, fault repairs and complaint handling. The customer service satisfaction was included for the billing accuracy measure in subsequent publications. Note that data for the July publication of CPIs are unavailable (out of print), and thus are omitted in the analyses of this paper.

In 1997, an average interval between faults measure was taken and put in the customer reported faults aspect, measured in years. Also, the third quarter saw the introduction of a new measure – service disconnection, which is calculated by the number of non-payment per 1000 lines, measured as gross, or net (less reconnections made). Unfortunately, the effectiveness of this measure is poor and data are not available for all companies. For this reason, the data for this measure are excluded in this report.

Another measure was introduced in 1999, called the Repeated Reported Faults. These fall within the category where the customer fault reports recur within 30 calendar days of the resolution of an earlier same fault on the same line. The purpose of the introduction of this measure was to indicate what proportion of fault reports are repeated after a previous fault report has been cleared. This measure is calculated as a percentage of the number of repeat customer fault reports that are cleared in the period, over the total number of fault reports cleared in the period. A repeated fault, in this sense, is defined as that a qualifying customer report receives against a customer's line (preferably to a specified line) within 30 calendar days of the date of clearance of the immediately preceding qualifying report of a fault against the same customer line.

### **Comparable Performances in Action**

Comparing firstly BT and Kingston, as given, there seems to be few significant changes in the performance of both companies for billing accuracy. Generally, on this measure, BT's performance gradually became poor through to 1998, and improved gradually from the first quarter of 1999. Kingston's performance also grew poorer to the first quarter of 1998, but in a fluctuating manner, and improved significantly by the third quarter, at a level where it approximately remained.

As shown in Figure 36, billing complaints had increased from 1.2 per 1000 in 1995 to 2.4 in 1998, but had improved from there, gradually reducing to a rate of 1.3 in the second quarter of 2001. Similarly, the performance was imitated by Kingston, as billing accuracy exacerbated from 0.9 per 1000 bills to 2.2 in 1998 and improved thereon to 0.6 in 2001.

Again, the patterns in the performance of BT and Kingston on customer reported faults appear to be the same, but in reverse order (Figure 37). The reported faults of Kingston

fell from 4.5 per 100 lines to 2.7 in 1998, and slowly increased again in the last quarter of 1998, finishing at 3.7 in 2001. In this instance, the performance of BT remained roughly constant, fluctuating about the rate of 3.6 throughout.

Very interestingly, while there have been fluctuations in the performance of customer reported faults for Kingston, the percentage of their faults cleared in target time has remained very constant, at nearly 100 per cent (see Figure 38). However, the percentage of faults being cleared in target time has fallen for BT. Commencing in 1995, at 81.6 per cent, the rate at which BT clears faults in target time gradually fell as low as 60.8 per cent in the last quarter of 2000, picking up again a little thereafter to 76.7 per cent in 2001.

The repeated reported faults show a different pattern in the performance of the companies (Figure 39). Whilst Kingston was able to ensure a constant performance in fault reports over the period commencing in 1999, the performance in the repeated faults has worsened, from about 6 per cent repeated within a 30-day period, to 9 per cent by 2001. However, while BT has seen falling performance in clearing faults in target time, it seems that the quality of repairs has improved, as the repeated faults have fallen from about 11 per cent in 1995 to 9.3 per cent by 2001.

There does not seem to be any pattern in the performance of the two companies for completing orders by the date promised, as shown in the stability of the data-lines of Figure 40). For BT, there has been a fluctuation in the performance, at about an average of 96 per cent. In the case of Kingston, in spite of a fall to a performance of 95.8 per cent in the third quarter of 1997, its performance has remained constant at above 99.5 per cent from 1998 onwards.

The other measure which does not seem to show any pattern in the company performance is in complaint handling, as suggested by the erratic changes in the performances, as shown in Figure 41. For BT, there has been a peak in processing complaints within 20 days in the second quarter of 1998 to 99.4 per cent. Thereafter, there was a gradual fall to 95.8 per cent in 2001. Kingston performed well when the CPI data were first published, but achievement fell below the 99 percentage mark in 1997, fluctuating and falling to 97 per cent in 1999 before picking up again to the 99 percentage mark in 2000.

Overall, considering the patterns in all the measures for BT and for BT, it seems, in the long term, there is *some* consistency in billing, fault restoration services, completion of orders and complaint handling. However, there is a sharp fall in the completion of work in target times. The performance of Kingston is somewhat “fuzzier”. There is greatest consistency in performance in restoring faults and the quality of this restoration, and since 1998 a strong performance in completing orders, indicating good control.

## **Summary & Implications**

The Comparable Performance Indicators of the telecommunications industry is newer than any of the performance standards of the other industries, and the development of which is also at its early stages of infancy. Although clearly defined indicators, other factors still impair the measurability of the individual company performances under which, such as the many mergers of companies in this industry. Again, this is a challenge for the performance measurement system in this area, although it is not the direct fault of the system per se.

Unlike the performance trends of the electricity and water industries, which have predominantly indicated general improvement over time, the patterns of performances in the telecommunications industry do not indicate this same kind of improvement. However, the performance data do show some stability in the patterns of the trends, and this may be more favoured by customers who value the quality of the services they receive.

## **5.0 GAS SUPPLY & TRANSMISSION**

The establishment of various standards of performance in the gas industry has been an ongoing and continuous process, subject to many amendments and changes. Not only did they commence the latest (*vis-à-vis* their utility counterparts), their rate of development has been the slowest too. This section intends to outline the evolution and company achievement of these performance standards, predominantly through the exploration of Annual Reports of the economic regulator for gas supply and transmission, OFGEM (Office of Gas and Electricity Market), formerly OFGAS (Office of Gas Supply). This

provides understanding of the availability of these performance measures and an attitude towards these from a variety of interesting perspectives.

Although now regulated by the same regulator, OFGEM, the development of customer service quality regulation has been much slower for gas than for electricity. For electricity, this was outlined as a main priority, since the very first Annual Report of OFFER, “for protecting the interests of customers with respect to prices, quality and continuity of supply” (OFFER, 1990: p.10). For gas, however, although the 1991 Annual Report addresses “a lengthy list of agreed improvements in British Gas’ central commitment to deal with its tariff customers’ problems and legitimate expectations in a fair, reasonable and just manner” (OFGAS, 1992: p.44), the regulator nevertheless admits that “it is very well to enter into a commitment to provide service but it is another matter to deliver that commitment adequately and consistently throughout the whole organisation” (p.45).

The present state of development regarding service standards in the gas industry results from the licence conditions, Network Code obligations and various voluntary standards adopted by the gas transporters and gas suppliers. Although the gas regulator has powers to set guaranteed and overall standards of service, these have not been prescribed until the recent periodic price review of Transco (see later). The following applies a chronologically evolutionary approach to outline the development of the current standards of service, since 1991, and the now separated functions of British Gas and Transco.

A list of the ten “Key Standards” outlined in the 1991 Annual Report (OFGAS, 1992: p.89) can be found at Appendix A. These were intended to focus “directly on the principal points of interaction between British Gas and its customers” (p.46). Unlike for electricity standards, where penalty payments would be incurred for not achieving various levels of performance, OFGAS would only refer to British Gas if they were not achieved. The development of these Key Standards was left to subsequent years, and the targets of which became clearer.

The Annual Report of 1992 (OFGAS, 1993) outlined the standards and levels of service commenced in August 1992, learning from the operation of the package of service standards which linked complaint and compensation schemes, as published by British Gas



in March 1992. A seminar was conducted in 1992 to provide useful additional information and clarity to improve on the original standards of service package.

Furthermore, “it is OFGAS’s aim to ensure that British Gas develops and puts into operation a standard of service package which is comprehensive in scope across all functions of the company, reflects best practice throughout the whole service industry sector in Great Britain, is relevant to all tariff customers and is properly costed, managed, controlled and delivered. In that way all customers can be assured that they will receive value for money from the company” (OFGAS, 1993: p.37).

In the spring of 1992, British Gas itself had published arrangements for complaint handling, approved by OFGAS; they agreed these arrangements would be reviewed, and that the compensation scheme which is linked to a complaint handling approach would also be reviewed (OFGAS, 1993: p.38).

The OFGAS Annual Report of 1993 stated that: “the results from monitoring the delivery of service standards during 1992 were very encouraging, indicating that British Gas matched or bettered the planned performance levels in most areas of activity ... [but notes] the need for further development of quality of service monitoring ... in improving service to the customer” (OFGAS, 1994: p.21).

During 1993, OFGAS, the Gas Consumer Council and British Gas worked together and published the Standards of Service Package, and agreed an action plan to implement recommendations of the report. Thus, as a result, new standards provide for (OFGAS, 1994: p.22):

- Submission of bills based on actual meter reads at least once a year in a minimum of 90% of cases;
- Clear commitments as to the help British Gas will offer customers in payment difficulties. These are in line with the provisions of Condition 12A of the Authorisation;
- Prior warning and steps to minimise disruption to customers and the travelling public when essential planning maintenance work is undertaken on public highways. This is consistent with the requirements of the New Roads and Streetworks Act 1991;
- The efficient delivery of GasCare register services; and
- The provision of energy efficiency advice.

The revision of Condition 13A of the Authorisation gave OFGAS greater powers to determine disputes between customers and British Gas including appropriate compensation. For the details of Condition 13A (announced on December 02, 1993, for introduction from January 01, 1994), see Appendix B.

In 1994, OFGAS monitored the general levels of service provided to its customers, particularly in the areas of:

- Reporting on its levels of performance;
- Separation of responsibilities;
- Establishment of social obligations;
- Debt and disconnection issues; and
- Transco's engineering works.

British Gas operated, throughout 1994, in accordance with the obligations of Condition 13A, and "in all but three of the 39 standards ... met or exceeded its planned performance levels" (OFGAS, 1995: p.24). On the issue of separating responsibilities between trading and transportation, responsibility for operating various standards must be separated between Transco and Public Gas Supply.

The 1995 Annual Report of OFGAS recorded a 50 per cent increase in the achievement of the standards of performance, but "there were two areas where performance fell short of the levels expected – the time taken to deal with correspondence from customers and the accuracy of the company's estimating of gas accounts" (OFGAS, 1996: p.22). It was thus suggested that additional devotion was required to providing effective complaints handling services and to its communications with customers.

It was decided that reporting on the individual performances of Transco and British Gas should be separate, and the discussions proceeded to the end of 1995 regarding the number and form of the standards to be applied for the two businesses. The separation took place in 1996.

The Annual Report of 1996 (OFGAS, 1997) was the first that reported the separation of standards of performance between what became British Gas Trading (BGT) and Transco.

Two standards remained common to both organisations, however: telephone answering and the handling of correspondence. The Annual Report indicated failures of both BGT and Transco.

In the case of BGT, it would consider itself to have failed on as standard if it does not reach targets on:

- Dealing with correspondence within 5 days;
- Attempting a meter read every 6 months;
- Billing on an actual meter read every 2 years;
- Visiting a customer within 5 days of a request being received for a gas supply;
- The accuracy of its estimates of gas usage by domestic customers; and
- The number of safety checks made within 28 days of a customer joining the GasCare Register.

Additionally, BGT introduced a Tariff Gas Billing System (TGBS) – the central bill-handling means to replace 64 separate billing systems – which resulted in over-long billing periods and inaccurate bills, predominantly due to incompatibility of TGB with all its databases. In 1998, “BGT has now overcome the operational difficulties following the introduction of a new nationwide billing system, which had affected performance in previous years” (OFGAS, 1999: p.40).

Similarly, Transco failed to achieve two of its targets: the required performance for attending to uncontrolled gas escapes within an hour was 97%, but Transco only achieved 95.5%; and with the requirement to record all complaints (100%), only 99% was achieved.

The 1997 OFGAS Annual Report (OFGAS, 1998) is the first to exhibit a tabulated summary of the performances of the standards, for BGT and Transco. The same was reported in the 1998 Annual Report (OFGAS, 1999), and a summary of which is made in Table 10.

The OFGEM Annual Report of 1999 “is the first annual report of OFGEM, as the integrated regulatory organisation responsible for both gas and electricity ... [and] OFGEM’s overall aim remains to protect and advance the interests of consumers by promoting the choice and value available to gas and electricity customers” (OFGEM, 2000a: p.5). In the opening lines of the section on protecting customers in the 1999

Annual Report, “a Utilities Bill was included in the Queen’s speech to Parliament ... [and] includes a new duty on the regulator to protect consumer interests ... set new standards of performance for gas and electricity companies” (OFGEM, 2000a: p.8). For this reason, the Annual Reports no longer publish the performance of BGT and Transco under their current standards, although the complaints data are available throughout.

Interestingly, at this time, a review by the National Audit Office on the introduction of competition into the domestic gas market (NAO, 1999) reported that not only do customers now have a choice of gas suppliers, but also, in general, “the quality of the service to customers is improving” (p.5). Essentially, the report evaluates the effectiveness of opening up the market to competitive conditions by observing any improvements in the standard of quality to customers.

The focus on exhibiting performance measures data for the gas industry was excluded in the 2000/01 Annual Report of OFGEM (OFGEM, 2001a). The *Utilities Act 2000* furthermore established the need for guaranteed and overall standards of performance to be set for electricity distributors, gas transporters and all electricity and gas suppliers, where in the past these had only applied to public electricity suppliers (PESs). Accordingly, proposals on what standards of performance targets should be set for the monopoly electricity distribution and gas transportation businesses were announced during the year of 2000. Further, a new independent consumer body was created, the Gas and Electricity Council, which replaced the existing Gas Consumer Council, and now inspects a new set of standards of performance.

“Guaranteed and overall standards ensure that customers receive certain minimum levels of service when dealing with companies ... [and] such minimum standards are particularly important in relation to monopoly businesses where there is no market pressure on companies to improve service standards” (OFGEM, 2001b: p.26). The separation of the gas supply and transportation businesses made it more necessary to establish clear standards of services to customers.

British Gas Trading and Transco therefore now operate different standards. Currently, for gas suppliers, the special licence condition 13A is still applicable in addition to a set of BGT’s own standards (of which there are 27), known as Public Standards of Service (see

Tables 12 and 13), contained in a leaflet entitled “Standards of Service for Our Gas Consumers” (see later). For Transco, three main sets of frameworks govern its performance of service standards. The first is Condition 19 of the gas transporter licence that alternative heating and cooking facilities must be provided in the prevention of gas escapes (which is common to all gas transporters) and that Transco reports on the performance against these standards. The second are the obligations under the Network Code (see below) and the third are a set of its own voluntary standards as established in 1992. These are explained as follows.

In the case of Transco, if it breaches its obligations under the *Network Code* to make gas available for offtake from the system, it must pay:

- Consumers using less than 73,200 kWh (2,500 Therms) £25 for each consecutive period of 24 hours, or part of such a period, commencing with the expiry of the first 24 hours of the failure; and
- Larger users a payment calculated in accordance with a formula set out in the Network Code

Furthermore, Transco’s National Transmission System is governed by a number of regulatory and legal frameworks. The primary legal framework is the *Gas Act 1986*, as amended by the *Utilities Act 2000*, and primarily establishes a separation of licensing of gas transporters, gas shippers and gas suppliers, where Transco is currently the largest gas transporter in Great Britain. The principle objective of the Act is to protect the interests of consumers in relation to gas conveyed through pipes, wherever appropriate, by promoting effective competition between those concerned. In doing so, two further principle objectives are necessary: to secure, as economically as possible, that all reasonable demands for gas in Great Britain are met; and to secure that licence holders are able to finance the operation of activities, as authorised by their licences.

The *Utilities Act 2000* establishes new duties, in addition to those on standards of service, for the Regulator (known as “The Authority”) to impose financial penalties on companies found to have been in breach of licences issued to them under the *Gas Act 1986* or the *Electricity Act 1989*.

On the issue of gas transporter licences, under section 9 of the *Gas Act 1986*, a gas transporter must develop and maintain an efficient and economic pipeline system for the conveyance of gas and to comply with any reasonable demands to connect to a system to convey gas to any premises. The Gas Transporter licence places an additional obligation on the gas transporter by the introduction of a Network Code, which sets out the arrangements between the transporter and shippers for the use of, and connection to, that transporter's pipeline system. Four key points are required, as set out in Standard Condition 7 of the Gas Transporter Licence, and each Network Code must meet these relevant objectives: (a) the efficient and economic operation by the licensee of its pipeline system; (b) the efficient discharge of its obligations under its licence; (c) the securing of effective competition between relevant shippers and between relevant suppliers; and (d) the provision of reasonable economic incentives for relevant suppliers to secure that the domestic supply security standards are satisfied as respects the availability of gas to their domestic customers.

For Transco, the Network Code was put in place in March 1996. Only shippers and Transco may propose modifications to the Network Code, and OFGEM (bound by the duties under section 4A of the *Gas Act 1986*) can only direct modifications to the Code if, in its opinion, the proposed modification would better facilitate the achievement of the relevant objectives as set out in Standard Condition 7 of the Gas Transporter Licence. Further, modifications to the Code require approval by OFGEM.

The shippers of gas, as signatories to Transco's Network Code, must balance the gas they put into the pipeline network with the gas they take out each day. Furthermore, these must be at a uniform flow rate – this is occasionally referred to as the 1/24 Flow Rate Rule.

Transco's voluntary standards are outlined in OFGEM's Guaranteed and Overall Standards of Performance: Final Proposals (OFGEM, 2001a) report, and the details of which can be found in Table 11. It must be noted that these "Public Standards of Service" are voluntary standards, hence the discretion of the compensation, in respect of other standards. They roughly parallel the guaranteed standards in electricity.

These standards were proposed for changes, where fixed payments were suggested instead. For instance, restoring domestic customers' suppliers after an unplanned was

proposed to warrant a payment of between £30; reinstatement of consumers' premises of £50 (domestic) and £100 (non-domestic); making and keeping appointments of £20; adequate heating and cooking facilities of £24; and notifying consumers of payments owed under the standards of £20. Nonetheless, these did not reflect the final decisions set for the 2002 periodic price review of Transco, as laid out in OFGEM (2001e).

For BGT, the standards that attract fixed compensation can be found in Table 12 (OFGEM, 2001b: p.25). Similarly, the standards that do not attract fixed compensation can be found in Table 13. The numbering of the categories in these standards does not correspond directly with the GS and OS scheme of levels of service standards. Furthermore, these numbers do not have direct resemblance with the standards against which BGT and Transco once operated.

### **Summary & Implications**

The evolution of a uniform set of standards applicable to the gas sector has been an ongoing and extremely difficult one, the establishment of which effectively commenced earlier than that of the electricity and water industries. Yet, the state of advance in the development of these standards has lagged behind ever since. Commencing from a position of general standards for customer services (comprised mainly of three obligations), as opposed to performance measures as in the other industries, these are now consolidated in the final determinations set out in the periodic price reviews, such as the set of Guaranteed and Overall Standards for Transco in April 2002 (OFGEM, 2002e).

This is because “consumers are interested in quality as well as prices ... [so] the price control review has involved consideration of the appropriate guaranteed and overall standards of performance and other quality of service indicators” (OFGEM, 2001e: p.3). Although the scope of this paper does not allow for inclusion of extreme details of future schemes of replacement, nonetheless, the implications and changes in the standards signal the high degree of ineffectiveness of those in the past.

To briefly outline, therefore, a number of Guaranteed and Overall Standards were included in the price review (see Tables 14 and 15 for details) for Transco and these differed very much from, and reflected the primitive nature of the original standards that were only a

framework by which the combined business of British Gas Trading operated in 1990. OFGEM outlines the penalty and attainment of these targets in its report of Transco's price review (OFGEM, 2001e: pp.36-40); and these differed somewhat too from those operational between 1996 and 1998, and those operated by the separated businesses of BGT and Transco's voluntary standards.

Finally, due to the discontinuity of the development of standards of the gas industry, any analyses of these performances over time have not been possible. Thus, the quality of standards in the provision of gas and the effectiveness of performance measurement systems that the gas industry can bring about also cannot be evaluated.

## **6.0 DISCUSSION**

Literature on the importance of the quality of customer services as an essential performance measurement category seems somewhat overrated, much of it putting its central focus of consideration on it being a tool for competitive positioning. Customer service indicators were originally established as a mechanism for price regulation, believing that the introduction of greater conditions of market competition, the levels of customer services must naturally improve, if not already heightened by individual company incentives. Outlined in a report by the National Audit Office, "although price is likely to remain a major incentive ... quality of service is also important for customers" (NAO, 1999: p.49). However, the provision of quality must come a price to pay, and it is the Director General's aim, for whichever utility, to "set a stable framework within which companies can plan efficiently and exploit new technologies to deliver the right quality of service to customers at the right price" (OFWAT, 1993b: p.2). Essentially, as quality increases, it becomes more expensive to provide it, increasing marginal costs, although the marginal benefit of customers receiving it decreases, and an optimal level of quality is reached at their intersection (Baldwin and Cave, 1999). The provision of this optimal level of quality brings with it a competitive element too. Even the Director General of Electricity Supply announces in the first Annual Report of OFFER (1990: p.5) that:

"... if the benefits of private ownership are to be fully secured, competition is a vital ingredient. It will be important for new sources of generation and supply to emerge. When companies know



that consumers have freedom of choice, they try even harder to deliver a service that meets consumers' wishes."

Thus, the degree of essentiality for the provision of quality in customer services rests with the companies that provide it, whilst the burden that ensures its provision rests with the regulators; the remaining stakeholder is the customer who receives it. All three parties place equal pressure in ensuring that the quality of customer services exists, is provided, and provided at an increasing level, at an acceptable price paid by the customers.

Collectively, therefore, this paper aims to provide a descriptive commentary on the performance levels and achievement of the Standards in the four household utilities: electricity, water, telecommunications and gas. The consideration of these performances appeared in this order, and of decreasing detail because of the degree of their development in each sector. Although the DG Standards in Water and Sewerage Services commenced before the GS and OS Standards in electricity supply and distribution, their actual *state* of development is less advanced. Whilst the first report on customer services of OFFER proudly announces that "This is OFFER's first report on the customer service provided ... to help assess the quality of the service they currently receive and to enable them to compare it with the service provided by other Electricity Supply Companies" (OFFER, 1992: p.i), the first report of OFWAT embarrassingly admits that "the Levels of Service Indicators are not performance or efficiency measures in themselves ... [and that] confidence in the information for comparative purposes will improve rapidly over the next few years" (OFWAT, 1990: pp.1, 5). With the telecommunications sector, these were left to a third-party incumbent, and commenced even later – in 1995. This may be acceptable if considered in the light of the degree of importance of each utility, with water and electricity being of vital importance. This, however, does not explain the poor state of development of customer service standards in the gas sector. Gas is widely consumed and quality levels not being achieved can lead to serious safety implications. Even the three years' quality standards as noted in the Annual Reports of OFGAS prove inadequate.

The inadequacy of the development of performance standards in the gas industry was already noted; the separation of businesses of British Gas Trading and Transco led to different developments of standards, and essentially, those of Transco were consolidated in the recent periodic price review, operational since April 2002. The Standards imposed

for Transco follow the same format as those already applied in electricity, by the operation of Guaranteed and Overall Standards. A comparison of these applied in electricity and in Transco can be found in Tables 14 and 15. As the standards that govern electricity distribution are now enhanced (although the intention of OFGEM is to continue collecting these data) by the Information and Incentives Project (IIP), to incorporate a wider spectrum of standards, it is more interesting to compare those of IIP with those for gas, as these both are new. Much of the initiatives for and modifications to the IIP were brought about by market research conducted by MORI (OFGEM, 2001f), such as findings that continuity of supply was the most important aspect of performance, and that “customers also rate ... answering the telephone quickly and efficiently as important” (p.41). Moreover, the IIP was praised by the National Audit Office as representing “a promising development ... [which] concentrates on firstly improving the information collected and secondly developing an incentive scheme linking financial payments to quality of service” (NAO, 2002: p.33). Time can only tell how effective the IIP turns out to become.

Although it is not the intention to provide scope in this paper for the inclusion of discussion on the IIP, it is nonetheless essential to note that its establishment was due to recognition of the inadequacies and defects in considering solely the various Standards on electricity distribution. By proposing an “incentive scheme [that] links directly the quality to consumers with the amount of revenue they can collect, this will provide them with clear and predictable incentives to deliver the appropriate quality of service to consumers” (OFGEM, 2001c: p.2). In the water industry, a more thorough performance measurement scheme has also been introduced, one which is to link service levels to prices. In this, an Overall Performance Assessment (OPA) is established, that includes the existing DG Standards, adding to it water supply and environmental considerations. This scheme can be understood to run in parallel with the IIP, as OFWAT announces that the original proposals for the OPA “took account of discussions with a number of companies, the Drinking Water Inspectorate (DWI) and Environment Agency (EA) and developments in other utilities, particularly the Office of the Gas and Electricity Markets’ Information and Incentives Project” (OFWAT, 2002b: p.2).

The 1997-98 Report on the Level of Customer Services for Water and Sewerage Services (OFWAT, 1998) attempts to report on the OPA results if applied for the water and sewerage companies. The purpose of this scheme was to “enable comparisons to be made

about the quality of the overall service companies provide to customers, which will be taken into account when setting price limits [which] will help to maintain incentives for companies to improve the services they offer to customers ... [and] inform customers about the performance of their local water supplier” (OFWAT, 1998: p.4). The results from this set of data were applied by the Director General to make adjustments to company price limits in the subsequent price review. This is a good method of comparing the variation in the possible results of the new scheme with that of the existing DG Standards.

Whilst the focus of this paper is not on the newer schemes that are to consolidate those that have been functioning, and detailed herein, the establishment and understanding of these (for electricity, water and gas) do, nevertheless, raise doubts on their operational effectiveness. The achievement of performance levels of DG7 (figure 29) and DG6 (Figure 30), for instance, brings one to question how it is possible for performances to improve so dramatically over the years. With such high achievement levels, is it possible to track any true increases in performance over time? A good performance measurement system should be one that can stand the test of time, but if, as in the case of responses to billing and written contacts, a performance measure can no longer be truly evaluated (because of unrealistic improvement levels), by definition, it is not a good performance measurement system.

For the water industry, where the empirical evidence suggests such excellent improvement in performances over time, particularly with those that are easily “measurable”, it is justifiable to question whether the companies are really becoming better in their provision of customer services, or if they are becoming better at “playing” the performance measures per se. Arguably, therefore, in the case of evaluating the performance measures that are less measurable, due to many contingent factors surrounding their viability, such as the weather in terms of flooding, where such a measure indicates improvement over time, this indication is more “believable”. Over time, although the performance improvement in sewer flooding is less impressive than those of response to billing and written contacts, this is a more reliable indication, as these performance figures are more difficult to “play”. It also indicates the degree to which the companies are able to control what is inevitable.

The data themselves can be somewhat flawed, such as those, already mentioned, of the early years of OFWAT, and where data are missing from the OFGEM reports too, either due to flawed data collection processes or inadequacy in company reporting systems that render the data unreliable. The effects of missing data encompass inconsistency, incomparability and inaccuracy of the data, and these themselves defeat the very purpose of the data reporting process. The original purpose of OFWAT publishing the DG performance data was to provide customers with individual company achievements of various Standards, demonstration of operational effectiveness of investment programmes, and to enable cross-company comparisons (OFWAT, 1990). This provokes one to wonder whether the achievement of these objectives is possible. Furthermore, the variation of the formats in which the data are presented have posed a problem: the early years of the OFWAT reports and the recent reports of OFGEM, as well as the cessation of the OFGEM Customer Service reports to make way for the reporting of IIP data, which potentially cause problems for the establishment of within-industry comparisons.

Comparisons across industry performances on customer services are also rendered difficult, as they do not all consider the same elements of performance measures. For instance, penalty payments are not compulsory or automatic in all industries, and in some, they do not exist. For electricity and water, penalty payments are automatic in many cases, but the effectiveness of the performance measurement systems cannot be compared against penalty payments because penalty payments are directly related to the performance data in the former while penalties are operated on a different scheme in the latter.

A multiplicity of complex and contingent factors surrounds the operational effectiveness of how the performance measurement systems for customer services in utilities are managed. The problems attached to these systems stimulate many great challenges on the functionality aspect as a system to adequately measure the performance valued and desired by customers. The details of customer service performance levels offered in this paper endeavour to provide support for future research and discussion in this area; the scope of this paper however does not allow for sufficient determination on this aspect, although the data do permit doubts to be raised, particularly where trends in the datasets have shown particularly surprising comparative indications.

## 7.0 CONCLUSION

Thorough discussion on the implications of what can be observed from the data can lead one to believe that customer service performance measures applied in the utilities industry are extremely flawed and problematic. However, the intention of this paper is not to provide discussion of such implications to a degree which permits this belief. The primary objective is to provide from observations of the dataset any evidence of emerging patterns that may be revealed as evidence for future research. Further, the results derived from the observations do not intend to provide solid findings to evaluate the effectiveness of customer service performance measures as a regulatory tool, although their use as a complementary supplement to pure price regulation has proved valid.

For the customer service performance indicators, in general, performance levels have improved for all the Standards in most of the industries. It is not so clear for those of telecommunications, but their development is still at an early stage. Arguably, the implications of telecommunication services being out of bounds are less severe than those of gas and electricity. For this reason, even the minimal availability of data on these performance measures has still indicated improvement over the time; and furthermore, their importance has led to a newer development of customer service standards through the price control review. Such increases in performance levels support the original arguments for privatisation, even if this may be surprising to those who are sceptical.

A lot of the literature reports on the growing importance of recognising customer service levels as an important performance indicator, not only as a regulatory tool that permits the customers to know what standard of services they are receiving, but also as an indication of how the companies themselves live up to their own expectations, in achieving goals of their own. In UK economic regulation, evidence of this is less direct. Until 1998/99, when all but one of the Overall Standards of electricity were put to 100 per cent, arguably the individual targets could be used as a tool to indicate company achievement of individual goals. This was because the individual levels of Overall Standards were determined by the regulator but, to some extent, through some consultation with the public electricity suppliers. Therefore, the achievements of these targets were effectively achievements of their own company objectives, as well as meeting the requirements of the regulator. Substantively, in the case of electricity Overall Standards, the actual

performance levels have increased over time. However, because the required levels of achievements have also increased, the *number* of OS targets not achieved has increased, particularly in 2000/01, which the author believes is a better measure of corporate (as opposed to company) performance and a better use of the existing performance measurement systems.

In the industries with the longest established consistent set of customer service performance measures (electricity and water), with a few exceptions, there are clearly overall increases in penalty payments over time against tighter Standard levels, that have led to a general corresponding increase in customer service performances. This is true, even for Standards for which a high degree of control is required, such as those influenced directly by the weather (for example, in sewer flooding levels, for which there are still signs of vast improvement). Furthermore, this is also true for electricity distribution Standard performances where the range of company performance has been extremely wide, and from which the average industry performances have indicated improvement. Referring back to the opening paragraph of this paper, Parker's (1999) suggestion that privatisation leads to a lower cost of production and a higher service to consumers seems to hold.

However, this is only true to the extent which the performance measurement systems in place permit. The real question under consideration is not whether performances have increased; it is not whether performance measurements are accurate; but rather whether the performance measurement *systems* are adequate to truly reflect the Standards of services customers value. Only by answering this in the affirmative can one begin to correctly answer whether there has been an improvement in customer service levels. Indeed, as the performances have increased to the extent that further improvement is difficult to identify and that newer Standards have been put in place (such as the IIP and OPA), one cannot help but wonder whether these inherit a sufficient level of adequacy and appropriateness, or whether instead they will lead to performances of permanent unidentifiable improvement.

One objective of this paper is to provide a descriptive consideration of the data and make observations from the emerging trends. In effect, this has worked in reverse. It is in observing the emerging trends from the published data that it has been possible to outline

what has been of greatest significance. By simply suggesting that the performances have improved over time is a good suggestion, but this alone is not good enough. This is because the observation would be incomplete. Performance, performance measurement and performance measurement systems are three quite different entities. Indeed, the performance of many of the Standards has shown inevitable evidence of improvement over time, and similarly performance measurement of the data has also improved, as the published reports have admitted increased reliability and accuracy of measurement techniques over time. However, the performance measurement systems through which the customer service performance measures operate have not indicated firm signs of improvement. These are what are changing over time, and the test of these *systems* is perhaps the problematic aspect. This test, nonetheless, is the true test of service levels to customers, as it is the *system* of performance measurement that can generate measures that customers want and value, rather than improvement in a set of *figures* which cannot. Whilst the comprehension and awareness of the data presented in this paper are of utmost importance as a comfort blanket, this blanket is not large enough to cover all aspects of customer service performance measurement issues in the utility industries; there are contingency factors that affect the data, as well as flaws in the reported data themselves, and only time can tell whether changes in these performance measurement systems can bring with them an accompanying pillow.

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# APPENDICES

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## APPENDIX A: British Gas Key Service Standards, 1991

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### **1 Obtaining a Gas Supply**

- When a customer makes contact to request a gas supply –
- (a) where a survey visit is required contact will be made within two working days to arrange an appointment which will be within three working days, or later if requested by the customer
  - (b) following such a visit a quotation for providing a supply will be despatched within five working days of the visit
  - (c) if no visit is required a quotation will be despatched within five working days of receipt of the enquiry

### **2 Emergency Service**

- 1 Uncontrolled escapes will be attended to within one hour of the report being received.
- 2 Controlled escapes will be attended within two hours of the report being received. (Reported gas escapes are classified as “uncontrolled” or “controlled” based on details given by the person making the report. A reported gas escape is classified as “controlled” where the report clearly indicates that the customer’s control tap has been turned off, and the escape of gas has stopped.)

### **3 Continuity of Supply**

- 1 Where a customer’s gas supply is interrupted, except through the exercise of British Gas’ power to disconnect for reasons other than safety, the supply will be restored within one working day unless restoration is impossible due to exceptional circumstances.
- 2 Except in a district supply emergency, if it is necessary to interrupt gas supply to premises occupied by old, disabled or otherwise vulnerable persons the premises will not be left without adequate heating and/or cooking arrangements.

### **4 Meter Reading**

- 1 For all customers an attempt will be made to read their meters six months after previous read or attempted read.
- 2 The meters of customers who do not submit their own readings will be compulsorily read no later than 18 months after the last successive reading.
- 3 The meters of all customers will be compulsorily read no later than two years after the last successful reading.

### **5 Billing**

- 1 Differences between actual and estimated gas usage by tariff customers will be monitored.
- 2 Estimating procedures will ensure that the estimates used favour neither British Gas nor its customers.

### **6 Collection**

- 1 No later than three months after an unpaid bill has been despatched, clear action will be taken in accordance with Condition 12A to prevent debt build up.

### **7 Telephone Enquiry Responses**

- 1 Customer telephone calls will be answered within 30 seconds of the call being connected.

### **8 Customer Contact**

- 1 A record will be kept of all customer contracts, requests and complaints where action is required.

**9 Customer Appointments**

- 1 Appointments will be made for all visits where work has been requested. Where required appointments will be offered on a morning or afternoon basis and will be kept on that basis.
- 2 If the customer is not available at the premises to be visited a suitable note will be put through the door advising the customer that the appointment has been kept.

**10 Customer Correspondence**

- 1 For all customer correspondence a reply will be provided within five working days of receipt of the correspondence. If an interim reply has to be made the reply will indicate when a substantive reply is expected to be sent.
  - 2 For all customer correspondence which can be responded to by a visit contact will be made within two working days of receipt of correspondence. The visit will then be arranged on an agreed date within five working days of that contact, or later if requested by the customer.
- 

**APPENDIX B: Condition 13A of the Authorisation**

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- 1 The supplier shall establish, and shall diligently take all reasonable steps to achieve, standards of performance in relation to the provision by the Supplier of gas supply services to tariff customers and potential tariff customers including services relating to: -
  - (a) the giving of, and the continuation of the giving of, supplies of gas;
  - (b) the ascertainment of quantities of gas supplied;
  - (c) the recovery of gas charges; and
  - (d) the prevention of escapes of gas.
- 2 The standards of performance so established (in this Condition referred to as “the established standards”) shall, in particular –
  - (a) govern the making of visits to customer’s premises and the response to complaints and enquiries make in person, by telephone, in writing or otherwise in respect of gas supply services; and
  - (b) take into account the interests of those who are disabled or of pensionable age.
- 3 The Supplier shall keep records of the levels of performance achieved by the Supplier (which in circumstances where the Director so directs shall extend to individual cases) in relation to the established standards and the cost incurred by the Supplier in such performance.
- 4 The Supplier shall not make any change in the established standards without the consent of the Director.
- 5
  - (1) The Supplier shall establish and shall operate a scheme for compensating persons affected by failures to meet the established standards.
  - (2) The scheme so established shall provide for the Supplier making to any such person by way of compensation a specific sum and any such further compensation as may be appropriate.
  - (3) Where a dispute arises between a person claiming compensation under the scheme so established and the Supplier as to whether compensation is payable under the scheme or whether the amount of such compensation is appropriate and that person has notified the Director of the dispute, the Supplier shall refer the question in dispute to the Director for determination and shall give effect to that determination.

- (4) The scheme so established shall provide, in any case where such a dispute arises, for the Supplier to inform the person claiming compensation of the provisions of sub-paragraph (3) above.
- 6 The Supplier shall –
- (a) furnish to the Director; and
  - (b) publish, in such form and in such manner as the Director may direct – the established standards and particulars of the scheme established under paragraph 5 above (in this Condition referred to as “the compensation scheme”) including an explanation of the principles on which compensation will be made.
- 7 The Supplier shall, as soon as practicable after the end of the financial year ending on 31<sup>st</sup> December 1993 and of each subsequent financial year, furnish to the Director and publish, in such form and in such manner as the Director may direct –
- (a) a report on –
    - (i) the levels of performance achieved by the Supplier in that year in relation to the established standards; and
    - (ii) the operation of the compensation scheme during that year;
    - (iii) such research as the Supplier has carried out with a view to discovering the views of representative samples of persons on the levels of performance so achieved and the operation of the compensation scheme in that year; and
  - (b) a statement of the levels of performance proposed to be achieved by the Supplier in the ensuing financial year in relation to the established standards.
- 8 (1) Any statement to be furnished and published under paragraph 7(1)(b) above shall include any proposals for modifying the established standards.
- (2) In formulating any such proposals the Supplier shall take account of any representations with regard to standards of performance in relation to the provision by the Supplier of gas supply services made by the Director to the Supplier in the preceding financial year.
- 9 The Supplier shall furnish the Director with such information as to –
- (a) the achievement by the Supplier of levels of performance in relation to the established standards;
  - (b) the records kept under paragraph 3 above; and
  - (c) the operation of the compensation scheme,
- as she may from time to time direct.
-

## TABLES

**TABLE 1: Current Level of Guaranteed Standards and Penalty Payment (2001-02)**

GS	Standard	Performance Required	Penalty Payment
GS1	Respond to failure of a supplier's fuse	Within 3 hours on weekdays between (at least ) 7am to 7pm, and within 4 hours at weekends between (at least) 9am to 5pm	£20
GS2	Restoring electricity supplies after faults	Must be restored within 18 hours	£50 (domestic), £100 (non-domestic), £25 for each 12 hour period
GS3	Providing supply and meter	Arrange an appointment within 2 working days for domestic consumers and 4 working days for non-domestic consumers	£20-£100
GS4	Estimating charges	Within 5 days for simple jobs, and 15 days for others	£40
GS5	Notice of supply interruption	Consumers must be given 5 days' notice	£20 (domestic), £40 (non-domestic)
GS6	Investigation of voltage complaints	Visit within 7 working days or substantive reply within 5 days	£20
GS7	Responding to meter problems	Visit within 7 working days or substantive reply within 5 working days	£20
GS8	Responding to customers queries about charges and payment queries	A substantive reply and agreed refunds paid within 5 working days	£20
GS9	Making and keeping appointments	A morning or afternoon appointment, or a timed appointment if requested by the customer	£20
GS10	Notifying customers of payments owed under standards	Write to the customer and make payment within 10 working days	£20
GS11	Responding to prepayment meter faults	Within 3 hours on weekdays and 4 hours at weekends	£20

**TABLE 2: First Original Set of Overall Standards (1991-92)**

<b>OS</b>	<b>Service</b>	<b>Required Performance</b>
1a	Minimum percentage of supplies to be reconnected following faults	within 3 hours
1b	All supplies to be reconnected following faults	within 24 hours
2	All voltage faults to be corrected	within 6 months
3a	Connecting new tariff customers' premises to electricity distribution systems	domestic customers within 30 working days
3b	Connecting new tariff customers' premises to electricity distribution systems	non-domestic customers within 40 working days
4	All customers who have been cut off for non-payment to be reconnected	before the end of the working day after they have paid the bill or made arrangements to pay
5	Visiting to move meter when asked to do so by customer	within 15 working days
6	Changing meters where necessary on change of tariff	within 10 working days of domestic customers' request in all cases
7	Ensuring that the company obtains a firm meter reading for all domestic and small business customers	at least once a year
8	All customer letters to be responded to	within 10 working days



**TABLE 3: Changes in Electricity Guaranteed Standards and Penalty Payments**

Year	GS-1	GS-2	GS-3	GS-4	GS-5	GS-6	GS-7	GS-8	GS-9	GS-10	GS-11
1991/92	Within 4 hours of any notification during working hours	24 hours	Within 3 working days for domestic, 5 working days for non-domestic	Within 10 working days (simple jobs), 20 working days (others)	At least 2 days' notice	Visit or reply within 10 working days	Visit or reply within 10 working days	A substantive reply within 10 working days	All appointments to visit on a day must be kept	Write to customer within 10 working days of failure	N/A
1991/92	£10	£20 domestic, £50 non-domestic, plus £10 per further 12 hrs	£20 domestic, £50 non-domestic	£20	£10 domestic, £20 non-domestic	£10	£10	£10	£10	£10	N/A
1993/94	.	.	.	.	.	.	.	A substantive reply within 5 working days	.	.	N/A
1993/94	£20	£40 domestic, £100 non-domestic within 24 hrs, plus £20 per further 12 hours	£40-£100	£40	£20 domestic, £40 non-domestic	£20	£20	£20	£20	£20	N/A
1994/95	.	.	.	.	.	.	.	.	Offer and keep a morning or afternoon appointment, or a more precise time if requested	.	N/A
1994/95	.	.	£20 or £40 domestic, £100 non-domestic	.	.	.	.	.	.	.	N/A
1995/96	.	.	.	.	.	.	Visit within 10 working days or substantive reply within 5 working days	.	.	.	N/A
1995/96	.	.	£20 - £100	.	.	.	.	.	.	.	N/A
1996/97	.	.	.	.	.	.	.	.	.	.	N/A
1996/97	.	£40 (domestic) £100 (non-domestic) + £25 per 24hrs	.	.	.	.	.	.	.	.	N/A
1997/98	Respond within 3hrs weekdays 7am-7pm, and within 4 hrs at weekends 9am-5pm	.	.	.	.	Visit within 10 working days or substantive reply within five	.	.	.	.	N/A
1997/98	.	£50 (domestic customers) for restoring supplies within 24 hours, plus £25 per further 12 hours	.	.	.	.	.	.	.	.	N/A
1998/99	.	.	Arrange an appointment within 2 working days (domestic), 4 working days (non-domestic)	Within 5 days for simple jobs, and 15 days for others	Customers must be given 5 days' notice	Visit within 7 working days or substantive reply within 5 days	Visit within 7 working days or substantive reply within 5 working days	A substantive reply and agreed refunds paid within 5 working days	A morning or afternoon appointment, or a timed appointment if requested by the customer	Write to the customer and make payment within 10 working days	Within 3 hours on weekdays and 4 hours at weekends
1998/99	.	£50 (domestic), £100 (non-domestic), £25 for each 12 hour period	.	.	.	.	.	.	.	.	£20
2000/01	.	Must be restored within 18 hours	.	.	.	.	.	.	.	.	.
2000/01	.	.	.	.	.	.	.	.	.	.	.

**TABLE 4: Electricity Company Business Brand Names for Distribution and Supply**

Previous Company Name	Distribution Name	Supply Brand
Eastern	TXU Europe Distribution	Eastern Energy
East Midlands	East Midlands Electricity	Powergen Retail Plc
London	London Electricity	London Electricity
Manweb	Manweb	Manweb
Midlands	GPU Power UK	Npower
Northern	NEDL	Northern Electric Plc
NORWEB	NORWEB Plc	NORWEB Energi
SEEBOARD	SEEBOARD	SEEBOARD
Southern	Southern Electric	Southern Electric
SWALEC	Western Power (South Wales)	SWALEC
South Western	Western Power (South West)	SWEB
Yorkshire	Yorkshire Electricity Distribution	Yorkshire Electricity
Hydro-Electric	Scottish Hydro-Electric	Scottish Hydro-Electric
ScottishPower	ScottishPower	ScottishPower

**TABLE 5: Required Levels of Overall Standards for Manweb and SWALEC**

PES	OS	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01
Manweb	OS3a	90	95	100	95	98	98	98	100	100	100
	OS5	90	100	95	95	98	98	98	100	100	100
SWALEC	OS4	90	99	95	95	99	99	99	100	100	100
	OS5	90	95	90	90	98	98	98	100	100	100

**TABLE 6: Unachieved Levels of Overall Standards by Public Electricity Suppliers**

Company (PES)	Year	No. Failures (Exclude OS3b)	Which (by how much %)								
			OS1a	OS1b	OS2	OS3a	OS4	OS5	OS6	OS7	OS8
East Midlands	1991/92	1									0.3
	1992/93	1									0.5
	1993/94	1					4.5				
	1994/95	2							1		0.1
	1995/96	1							0.1		
	1996/97	0									
	1997/98	1							0.2		
	1998/99	4					2	0.1	0.9	0.1	
	1999/00	2	0.1							0.5	
	2000/01	3	5.2							1.5	0.1
Eastern	1991/92	1							0.4		
	1992/93	8	3.6	0.2	5.9	4.4	0.2	6.2	3.2	2.7	

	1993/94	4	3	0.2				0.1		1.5	
	1994/95	1	3.6								
	1995/96	1						0.1			
	1996/97	0									
	1997/98	0									
	1998/99	2							0.9	0.9	
	1999/00	2						0.9	2		
	2000/01	7	1.9		4.7	0.1	0.9		0.3	1.1	0.1
<b>Hydro-Electric</b>											
	1991/92	2							2.4		10
	1992/93	2			5.1						0.4
	1993/94	0									
	1994/95	0									
	1995/96	2	3.4	0.7							
	1996/97	0									
	1997/98	0									
	1998/99	4	2.4	0.5			3.6			1.8	
	1999/00	2		0.1						1.6	
	2000/01	1								4.6	
<b>London</b>											
	1991/92	1		0.1							
	1992/93	1		0.1							
	1993/94	0									
	1994/95	0									
	1995/96	0									
	1996/97	1									0.1
	1997/98	2								0.6	11.5
	1998/99	4	3.1					22.2		3.5	0.7
	1999/00	4	0.7		0.6					3.6	0.3
	2000/01	4	1.6		20.4					3.1	0.1
<b>Midlands</b>											
	1991/92	1						0.6			
	1992/93	9	5.1	0.1	5.4	1.4	1.7	1.6	5.4	0.5	2.5
	1993/94	9	6.5	0.1	6	0.1	0.1	0.5	0.5	0.1	0.4
	1994/95	5	5.8	0.9	0.2			0.1			0.1
	1995/96	4	6.8		1.3					0.1	0.2
	1996/97	2	2.3	0.1							
	1997/98	2	3.7	0.1							
	1998/99	3	2.4							0.6	0.2
	1999/00	3	5.7							1	0.2
	2000/01	4	6.4		0.5					0.7	1.05
<b>Manweb</b>											
	1991/92	0									
	1992/93	1						1.9			
	1993/94	1							1		
	1994/95	1							0.7		
	1995/96	0									
	1996/97	0									
	1997/98	2	1.3	0.6							
	1998/99	6	4.6		1.6	0.4		0.1		1.8	0.3
	1999/00	3	2.5		1.8					2	
	2000/01	3	1.9							1.4	0.05
<b>Northern</b>											
	1991/92	0									
	1992/93	2					0.4				1.2
	1993/94	0									
	1994/95	0									
	1995/96	1									0.4
	1996/97	1									1.5

	1997/98	<i>1</i>									1.6
	1998/99	<i>4</i>		0.66					0.1	0.9	1.6
	1999/00	<i>5</i>					6.2	6.2	0.3	5.6	10.6
	2000/01	<i>6</i>	2.5	0.2			6.6		0.3	2	5.95
<b>NORWEB</b>											
	1991/92	<i>1</i>								0.2	
	1992/93	<i>2</i>			2.6				0.2		
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>3</i>	1.9	0.5						1.4	
	1999/00	<i>2</i>			0.7					1.8	
	2000/01	<i>3</i>			8					1.8	0.05
<b>ScottishPower</b>											
	1991/92	<i>1</i>			9.6						
	1992/93	<i>1</i>					1.1				
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>1</i>			1.3						
	1998/99	<i>4</i>		6.6	2.8	3.4				1.9	
	1999/00	<i>3</i>			2.9					1.1	1.1
	2000/01	<i>3</i>			0.5					1.4	1.5
<b>SEEBOARD</b>											
	1991/92	<i>0</i>									
	1992/93	<i>1</i>								1.8	
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>1</i>								1.9	
	1999/00	<i>1</i>								1.5	
	2000/01	<i>1</i>								2.6	
<b>South Western</b>											
	1991/92	<i>0</i>									
	1992/93	<i>0</i>									
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>1</i>								0.4	
	1999/00	<i>2</i>		0.2						0.5	
	2000/01	<i>2</i>								0.8	0.05
<b>Southern</b>											
	1991/92	<i>1</i>								0.9	
	1992/93	<i>0</i>									
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>1</i>								0.5	
	1999/00	<i>1</i>								0.9	
	2000/01	<i>2</i>	0.9							2.2	

<b>SWALEC</b>	1991/92	<i>1</i>								1.1	
	1992/93	<i>0</i>									
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>1</i>								1.4	
	1999/00	<i>2</i>								1.8	0.8
	2000/01	<i>1</i>								1.7	
<b>Yorkshire</b>	1991/92	<i>0</i>									
	1992/93	<i>0</i>									
	1993/94	<i>0</i>									
	1994/95	<i>0</i>									
	1995/96	<i>0</i>									
	1996/97	<i>0</i>									
	1997/98	<i>0</i>									
	1998/99	<i>3</i>						0.1		0.8	0.1
	1999/00	<i>1</i>								1.2	
	2000/01	<i>3</i>				0.1				2.4	0.05

**TABLE 7: Original DG Standards for Water and Sewerage Services (1989-99)**

<b>DG1</b>	<b>Raw Water Availability</b> Identifies the population whose water resource availability is below the reference level
<b>DG2</b>	<b>Pressure of Mains Water</b> Identifies the number of customers' properties that are subject to mains water pressures below the reference level(s)
<b>DG3</b>	<b>Interruptions to Water Supplies</b> Identifies the number of customers' properties that have experience a loss of supply for longer than the reference level, without reasonable notice from the Company
<b>DG4</b>	<b>Hosepipe Restrictions</b> Identifies the population who have been subject to hosepipe restrictions
<b>DG5</b>	<b>Flooding Incidents from Sewers</b> Identifies the number of customers' properties where flooding from public sewers has occurred at a frequency that is greater than the reference level
<b>DG6</b>	<b>Response to Billing Queries</b> Identifies the banded response time for meaningful responses to customer's billing queries
<b>DG7</b>	<b>Response to Written Complaints</b> Identifies the banded response time for meaningful responses to customers' written complaints
<b>DG8</b>	<b>Response to Development Control Consultations</b> Identifies the banded response time for responses to development control (planning consultations)

**TABLE 8: Guaranteed Standards Scheme – Compensation in Water Industry (2001-)**

	Service	Required Performance	Penalty Payment
1	Responding to billing queries	Respond within 10 working days if request to change payment method cannot be met; within 20 working days to other account queries	£20
2	Responding to written complaints	Respond fully within 10 working days unless a visit, or enquiries of a 3rd party are necessary; otherwise holding response within 10 working days respond fully within 20 working days	£20 (domestic), £50 (business)
3	Appointments made in writing	Specify am/pm (before or after 1pm) on the day; keep the appointment or give 24 hours notice of cancellation	£20
4	Warning notice of a planned supply interruption exceeding 4 hours	Give 24 hours written notice to the customer	£20 (domestic), £50 (business)
5	Restoring supply after a planned interruption	Restore supply by the time specified	£20 + £10 per 24hr (domestic), £50 + £25 per 24hr (business)
6a	Restoring supply after an unplanned interruption (except strategic mains burst or leak)	Restore supply within 24 hours	£20 + £10 per 24hr (domestic), £50 + £25 per 24hr (business)
6b	Restoring supply after a burst or leak on a strategic main	Restore supply within 48 hours	£20 + £10 per 24hr (domestic), £50 + £25 per 24hr (business)
7	Sewer flooding in property	Refund annual sewage charges if a customer's building is flooded, but not if caused by severe weather	Maximum £1,000 per incident
8	Low pressure	Pay £25 where a customer experiences low pressure of one hour or more on two occasions	£25
9	Meter installation	Install a meter within 15 working days of receiving a payment	£10
10	Drinking water quality	No current standard, but currently being proposed	--

**TABLE 9: Original Comparable Performance Indicators (CPI), 1995**

Indicator Name	What it Measures	Performance
Service Provision	Meeting their commitments to customers to install telecoms services	Complete orders by date promised
Customer reported faults	Network reliability	Minimal faults per 100 lines
Fault Repairs	Repairing faults in target time	Cleared in target time
Complaint Handling	Dealing with complaints promptly	Processed within 20 days
Bill Accuracy	Providing accurate bill information	Minimal complaints per 1000 bills

**TABLE 10: Summary of BGT and Transco Standards of Services, 1996-1998**

		1996- Required	1996- Achieved	1997- Required	1997- Achieved	1998- Required	1998- Achieved
<b>British Gas Trading</b>	Telephone call response in 30 seconds	90	62	90	96	90	96
	Replies to customer correspondence within 5 days	90	76	90	99	90	100
	Billing on actual BGT meter reads at least once every 2 years	99	96	99	98	99	99
	Customer visits within 10 weeks to discuss arrangements to pay	90	99	N/A	N/A	N/A	N/A
	Gas safety checks made within 28 days of joining GasCare	95	90	95	99	95	99
<b>Transco</b>	Telephone answering	90	97	90	93	90	90
	Replies to correspondence	90	95	90	99	90	97
	Complaints recorded	100	99	100	100	100	100
	Visits in response to correspondence	93	99	93	98	93	96
	Notification of planned work	95	100	95	99	95	99
	Making/Keeping appointments	95	99	95	99	95	99
	Responding to gas emergencies (uncontrolled - 1 hour)	97	95.5	97	98	97	97
	Responding to gas emergencies (controlled - 2 hours)	97	98	97	99	97	99
	Offer alternative heating/cooking	100	100	100	100	100	100

**TABLE 11: TRANSCO's Voluntary Standards of Customer Service, 2001**

Service	Required Performance	Penalty Payment
Making and keeping appointments (95%)	Where required, appointments will be made on a morning or afternoon basis. Failure to give 24 hours' notice of inability to attend may attract a compensation payment	£10
Alternative heating and cooking facilities (100%)	Where Transco has to disconnect the gas supply for safety reason, it will provide alternative heating and cooking facilities for consumers who are disabled, chronically sick, or of a pensionable age, or where there are children in the property	£20
Telephone calls (90%)	All calls to Transco call centres to be answered within 30 seconds	Discretionary
Replies to correspondence 1 (90%)	Customer to receive a reply within 5 working days, except where immediate action is required. Interim replies will indicate when a full reply may be expected	Discretionary
Replies to correspondence 2 (90%)	Correspondence requesting connection of premises likely to use less than 2500 therms per year will receive a reply in 5 working days (unless request comes via a shipper or supplier)	Discretionary
Complaints (100%)	A record will be kept of all complaints, from whatever source	Discretionary
Visits (93%)	Where a visit is appropriate, following receipt of correspondence or a complaint, contact will be made within 2 working days. The visit will be made within 5 working days, or later with the customer's agreement	Discretionary
Notification of planned work (95%)	Work for planned maintenance that requires interruption of the gas supply, and entry to the customer's premises will be the subject of notice of at least 10 working days in respect of the service pipe and at least 5 days in respect of the meter	Discretionary
Gas emergencies (97%)	In respect of gas escapes, spillage of carbon monoxide or other hazardous situations, as quickly as possible but within at least one hour for uncontrolled escapes and two hours for controlled escapes	Discretionary

**TABLE 12: BGT's Guaranteed Standards and Penalty Payment, 2001**

Serial	Service	Required Performance	Penalty Payment
6	Making and keeping appointments (95%)	Where required, appointments will be made on a morning or afternoon basis. Failure to give 24 hours' notice of inability to attend may attract a compensation payment	£11
9	Appointments for final meter reading or clearance (99%)	Morning or afternoon appointments (at two days' notice) for final meter reading or clearance	£11
10	Special meter reading or clearance, at the customer's request (99%)	Visit within three working days of request. Morning or afternoon appointments to be agreed, as required	£11

**TABLE 13: BGT's Levels of Overall Standards, 2001**

Serial	Standard	Performance Level	% Target
1	Telephone answering	Within 30 seconds	90%
2	Replies to customers	Within 5 working days. Interim replies to indicate the expected data of substantive replies	90%
3	Customer complaints	A record to be kept of all written customer complaints	99%
4	Visits	Following receipt of correspondence or a complaint, contact will be made within 2 working days. The visit will be made within 5 working days, or later with the customer's agreement.	93%
5	Obtaining a gas supply	Request to be passed to the relevant gas transporter within 48 hours	99%
7a	Credit meter accounts (meter reading)	The company will submit gas bills based on an actual meter read (can be customer reading), at least once a year	90%
7b	Credit meter accounts (meter reading)	The company will submit gas bills based on an actual meter read (must be company reading), at least once every 2 years	99%
8	Meter reading frequency	Attempt to read meters six months after the previous reading or attempted reading	98%
9	Final meter reading or clearance	A morning or afternoon appointment must be given, if required, with at least 2 days' notice	99%
10	Special meter reading or clearance	Visit within 3 working days of receiving a request. A morning or afternoon appointment to be agreed, if required	99%
11	Estimating procedures	Procedures should favour neither BGT nor its consumers. Differences between actual and estimated gas usage will be monitored	90%, weekly samples within +/- 4%
12	Account payment	Not later than 3 months after an unpaid bill was dispatched, clear action will be taken to prevent build-up of debt	99% of unpaid bills
13	"Help Pack" for defaulting customers	Where a customer's account is unpaid and there has been no contact with the company, BGT will send a "Help Pack", encouraging contact	99% with whom no contact has been made
14	Visits concerning unpaid bill	Where a bill remains unpaid after 13 weeks, the company's representatives will visit the customer, to discuss an arrangement to pay	95% of consumers visited
15	Payment arrangements	Unless standard 16 applies, the customer will be offered an affordable payment arrangement, to cover current consumption, plus a contribution towards arrears	100% of consumers
16	Alternatives to payment arrangements	Where a payment arrangement is unsuitable, the company will offer a prepayment meter, or a Fuel Direct arrangement	100% of consumers
17a	Regular payment schemes	Monitoring of consumption against monthly payment to be undertaken every six months, and payments adjusted accordingly	NONE. BGT monitors its performance to the number of complaints received
17b	Regular payment schemes	Refunds will be made where there is a credit balance, and payments are in excess of the level required	100% of requests
18	Refunds	Where the customer is entitled to a refund, it will be sent within 5 working days of the request, or of the decision that a refund is appropriate	95% of requested refunds



19	Defective/full meters	Where a defective or full meter means that the customer is off supply, a visit will be made within four hours of the request	95% of requests
20	Older, disabled or chronically sick consumers	BGT will maintain a "Gas Care Register" as described in the relevant code of practice	NONE. BGT monitors the numbers registered and carries out "internal analysis"
21	Gas safety checks for those on the "Gas Care Register"	A check will be made within 28 days of the customer's joining the register, or later by agreement	95% of new Gas Care consumers
22	Energy Efficiency (Services)	Consumers to be advised annually of energy efficiency services available, and of a point of contact for further information	100% of consumers
23	Energy Efficiency (Advice)	Free energy efficiency advice to be available from trained specialists, at local call rates	NONE, but BGT monitor the number of enquiries
24	Energy Efficiency (and debt)	Information on reduction of energy costs to be given when visiting consumers to discuss debt problems	100% of consumers visited

**TABLE 14: Transco and Electricity Distribution Guaranteed Standards, 2001-2002**

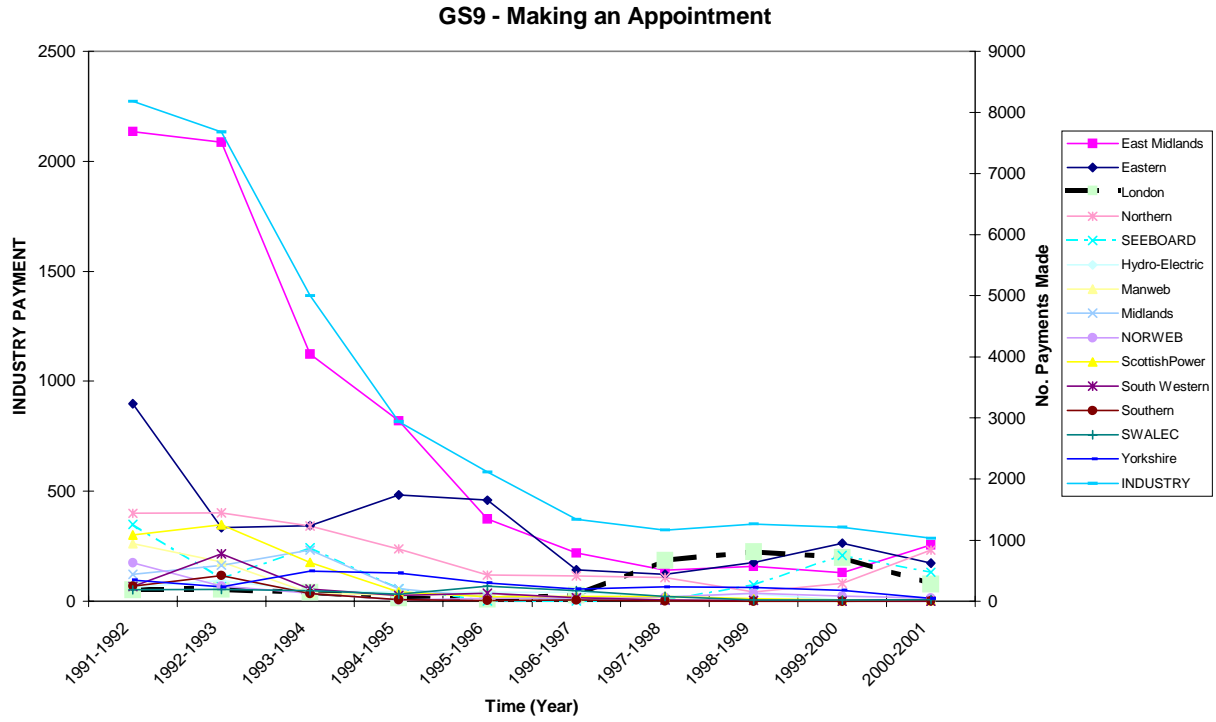
SERVICE		Performance Level		Penalty Payment (£)		Difference
Electricity	Gas	Electricity	Gas	Electricity	Gas	
GS1: Failure of Supply fuse	~	3 hrs weekday, 4hrs weekend	~	20	~	-
GS2: Restore supply after faults	GS1: Restoring supply after unplanned interruption	Restored in 18 hrs	Where interruption greater than 24 hrs, compensation made for each 24 hrs thereafter	50 domestic, 100 nondomestic, + 25 each 12 hrs	30	6 hrs & £20-70 difference
GS3: Provide supply & Meter	~	Arrange appointment 2 days (4 non-domestic)	~	20-100	~	-
GS4: Estimating Charges	~	5 working days (simple jobs), 15 others	~	40	~	-
GS5: Notice of Supply Interruption	~	5 days notice	~	20 domestic, 40 nondomestic	~	-
GS6: Investigation of Voltage Complaints	~	7 days or 5 for substantive reply	~	20	~	-
GS7: Responding to Meter Problems	~	7 days or 5 for substantive reply	~	20	~	-
GS8: Responding to queries about charges	~	5 working days	~	20	~	-
GS9: Making & Keeping Appointments	GS3: Making & Keeping Appointments	Must offer and keep appointment	Must offer and keep appointment	20	20	SAME
GS10: Notifying Customers re Standards	GS5: Notifying Customers re Standards	10 working days	Where not informed in 20 working days, payment is due	20	20	SAME Payment, but 10 days payment difference
GS11: Responding to Pre-payment Faults	~	Respond in 3hrs weekdays, 4 hrs weekend	~	20	~	-
~	GS2: Reinstatement of Consumer's Premises	~	Premises must be reinstated within 10 working days, & payment made for each 5 working days if not thereafter	~	50 domestic, 100 nondomestic	-
~	GS4: Adequate Heating and Cooking Facilities	~	Payment if supply is disconnected for disadvantaged persons	~	24	-

**TABLE 15: Transco and Electricity Distribution Overall Standards, 2001-2002**

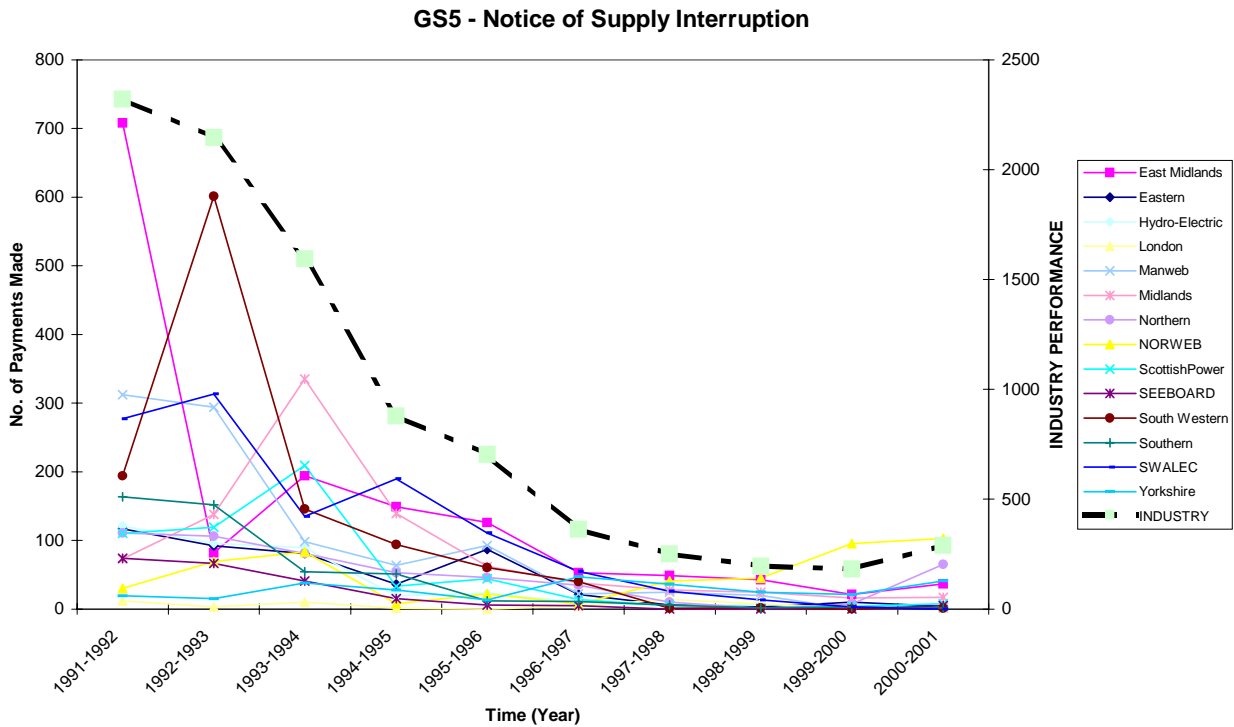
SERVICE		Performance Level		Achievement Level (%)		Difference
Electricity	Gas	Electricity	Gas	Electricity	Gas	
OS1a: Faults reconnected in 3 hrs	~	3 hrs	~	Various	~	~
OS1b: Faults reconnected in 18 hrs	~	18 hrs	~	Various	~	~
OS2: Voltage faults corrected	~	6 months	~	100	~	~
OS3a: Connect domestic customers within 30 days	~	30 working days	~	100	~	~
OS3b: Connect non-domestic customers within 40 days	~	40 working days	~	100	~	~
OS4: Those cut off to be reconnected after payment of bill	~	Within the day	~	100	~	~
OS5: Visiting to move meter if asked by customer	~	Within 15 days	~	100	~	~
OS6: Changing meters when necessary on change of tariff	~	10 working days	~	100	~	~
OS7: Ensure firm reading of meters	~	at least once a year	~	100	~	~
OS8: Respond to LETTERS	OS4: Acknowledge correspondence	10 working days	Must acknowledge within 5 working days	100	90	5 days, 10% difference
~	OS1: Respond to telephone calls	~	30 seconds	~	90	~
~	OS2: Notify planned supply interruptions	~	A letter to be provided 5 working days in advance	~	95	~
~	OS3: Informing customers when due to be reconnected	~	12 hours of knowledge	~	97	~
~	OS5: Visits after receipt of complaint	~	2 working days after receipt of correspondence, visit 5 working days after contact	~	93	~
~	OS6: Response to COMPLAINTS	~	Substantive response within 10 working days	~	90	~
~	OS7: Respond to EMERGENCY calls	~	1 hr uncontrolled escapes, 2 hrs controlled escapes	~	97	~

# FIGURES

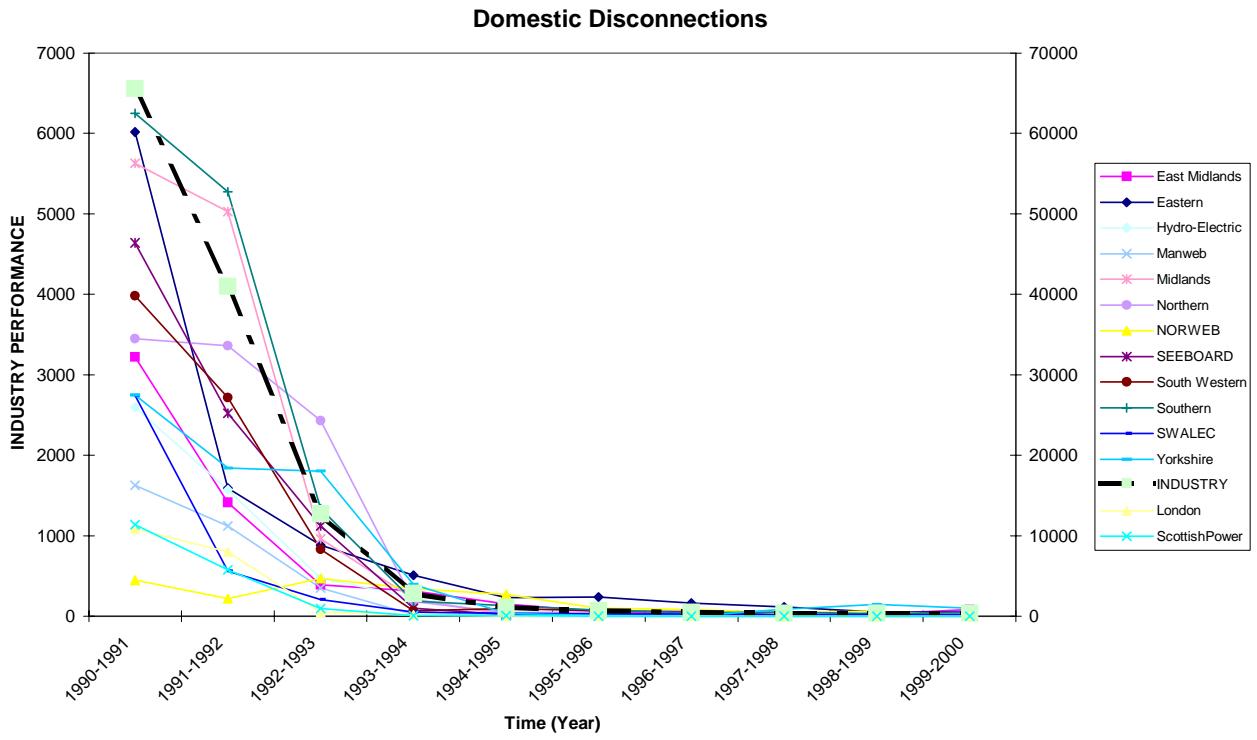
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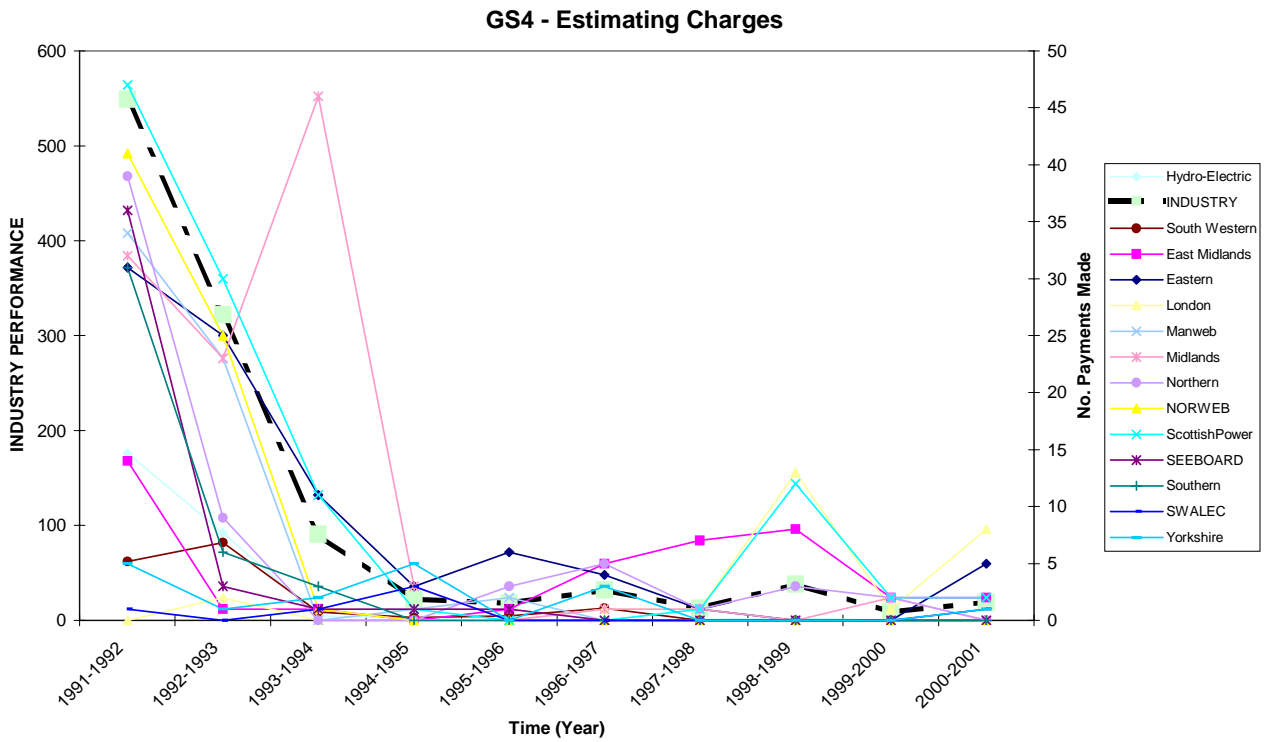
**Figure 2:**



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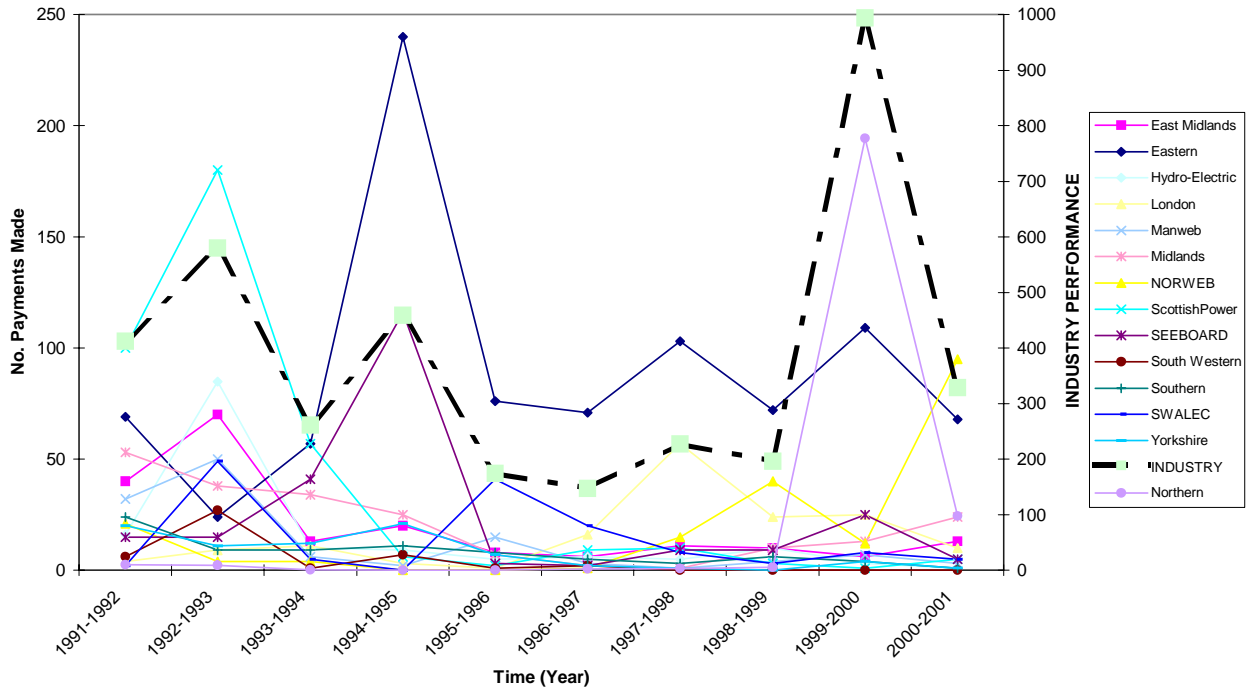


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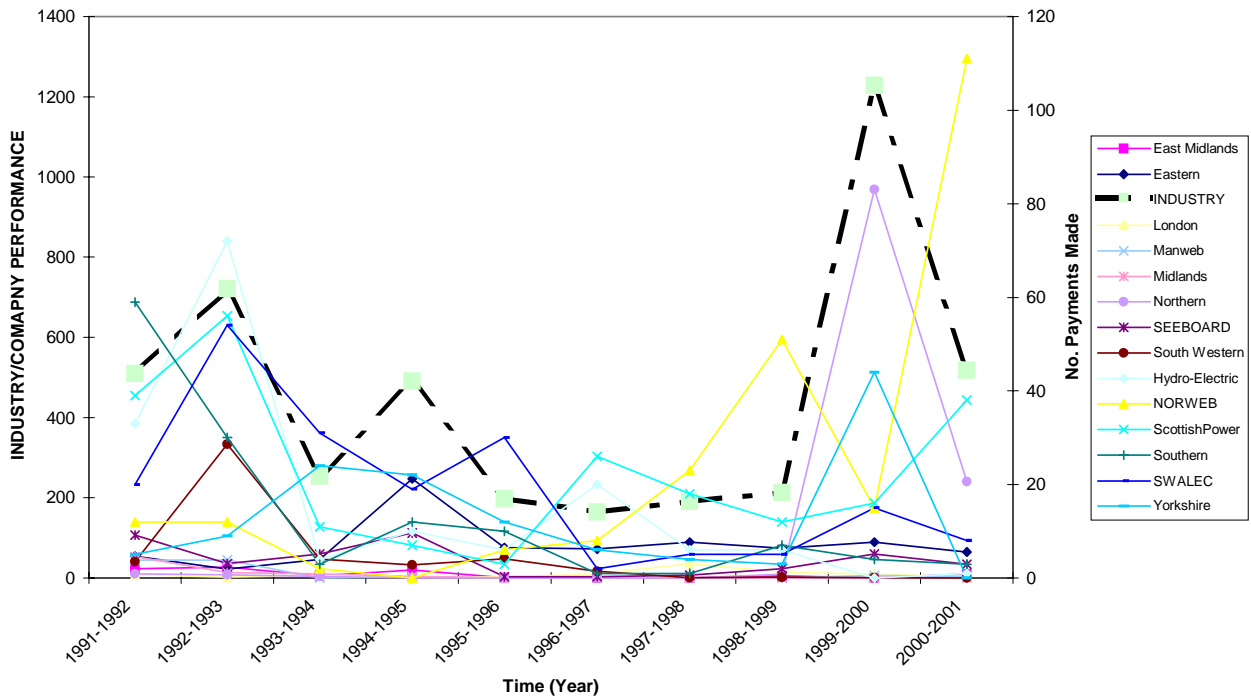
**Figure 5:**

**GS10 - Notifying Customers of Payment under the Standards**

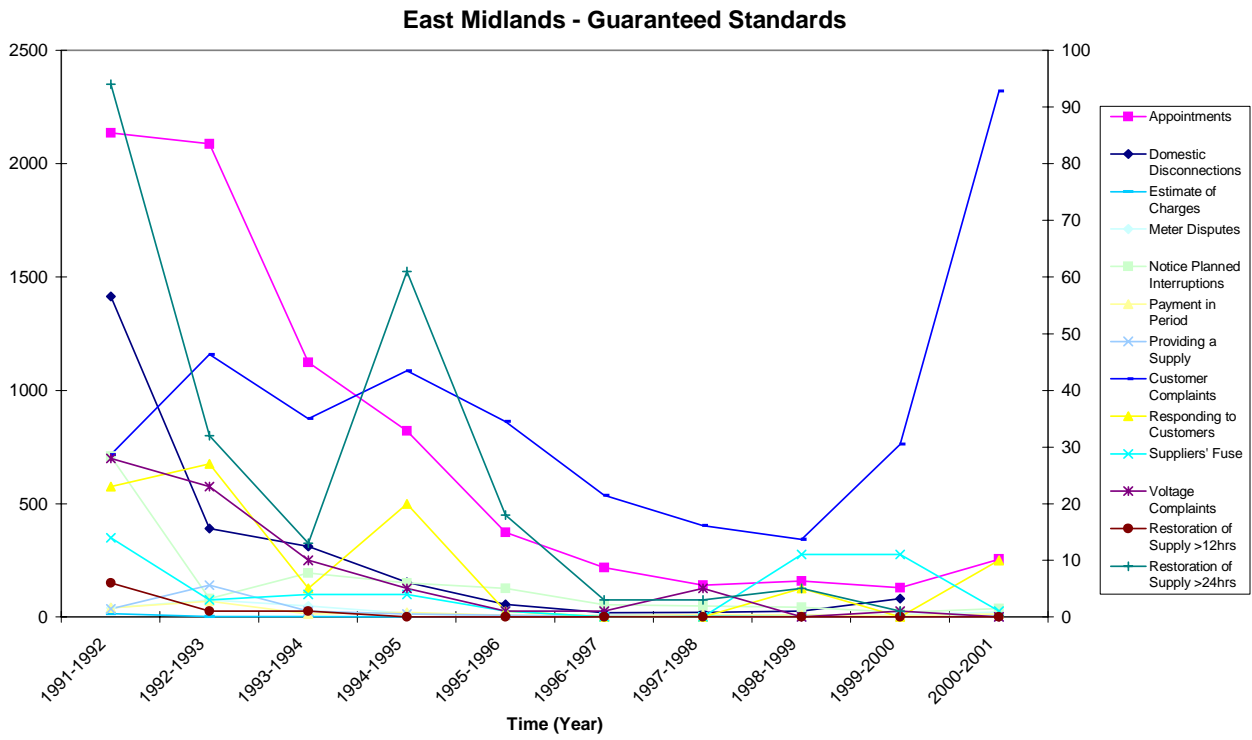


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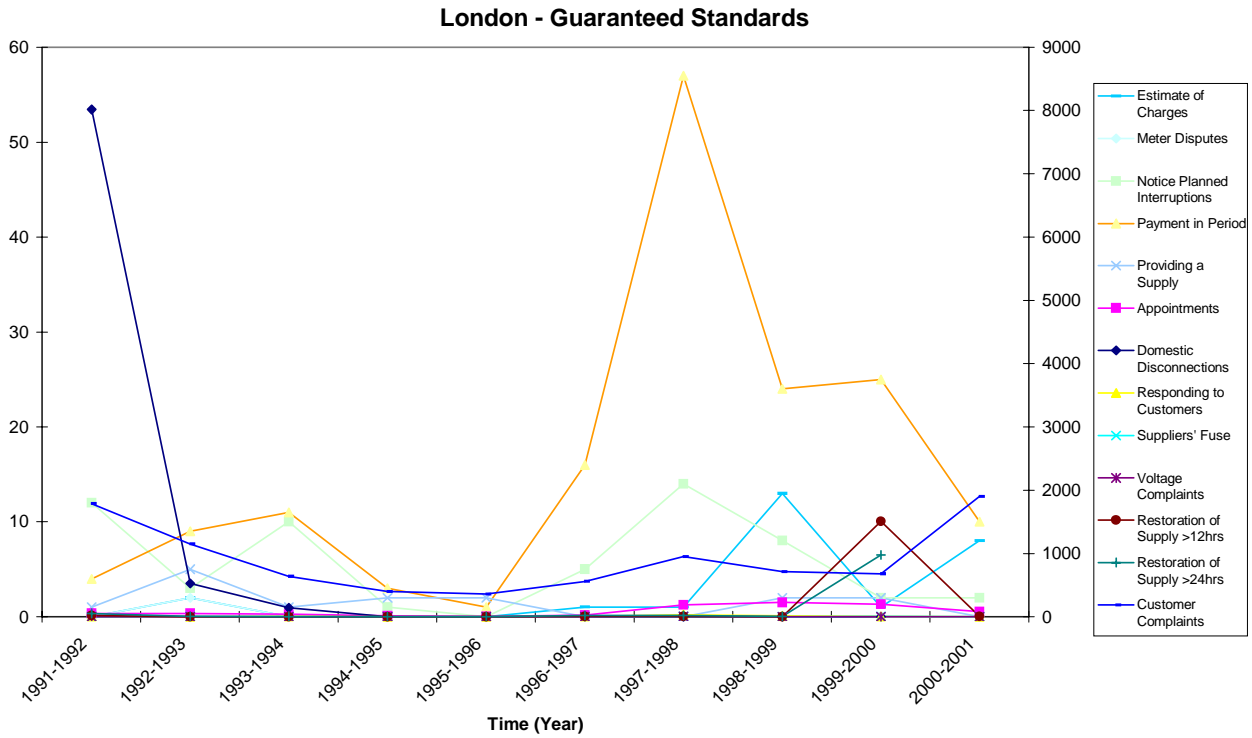
**GS8 - Responding to Queries about Charges and Payments**



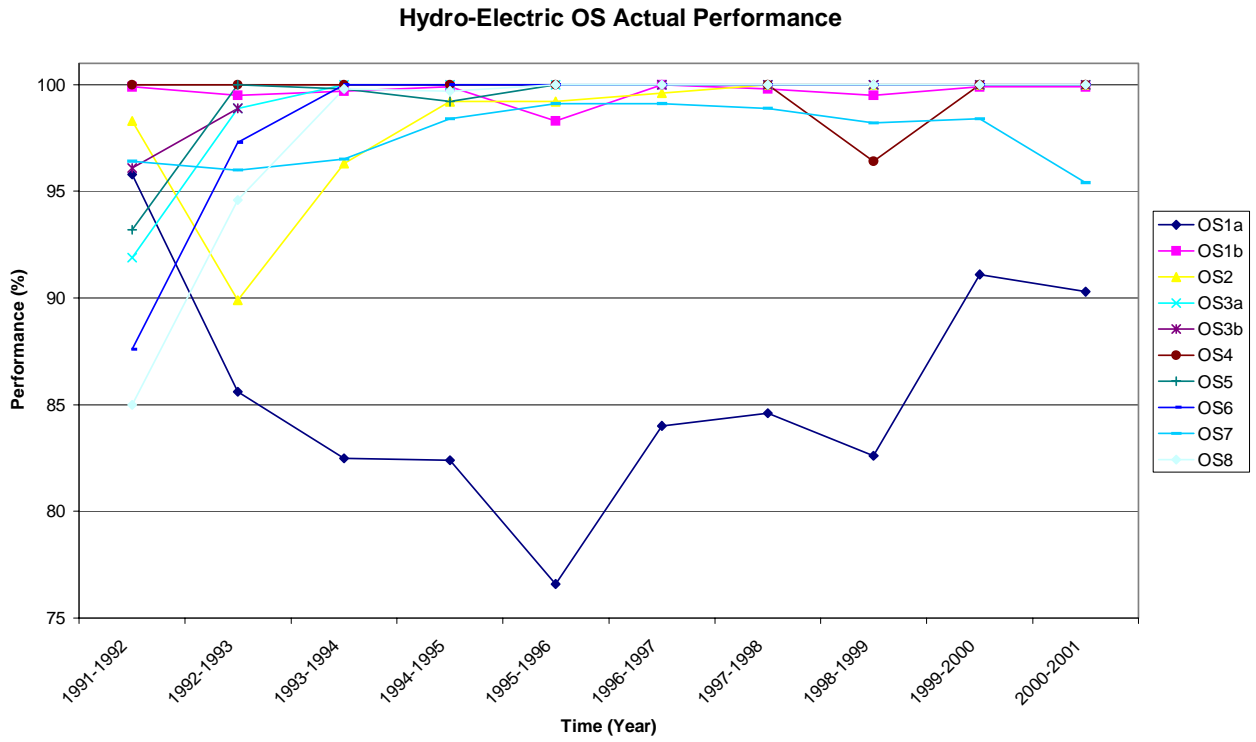
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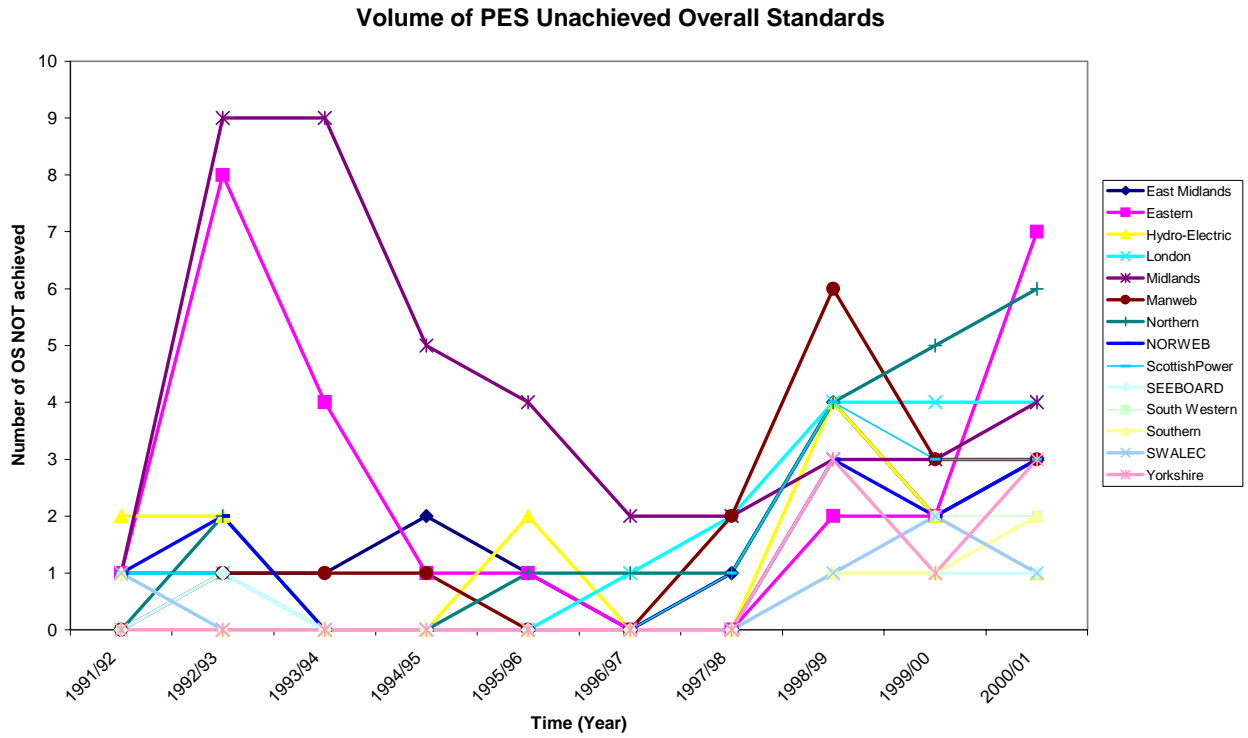
**Figure 8:**



**Figure 9:**



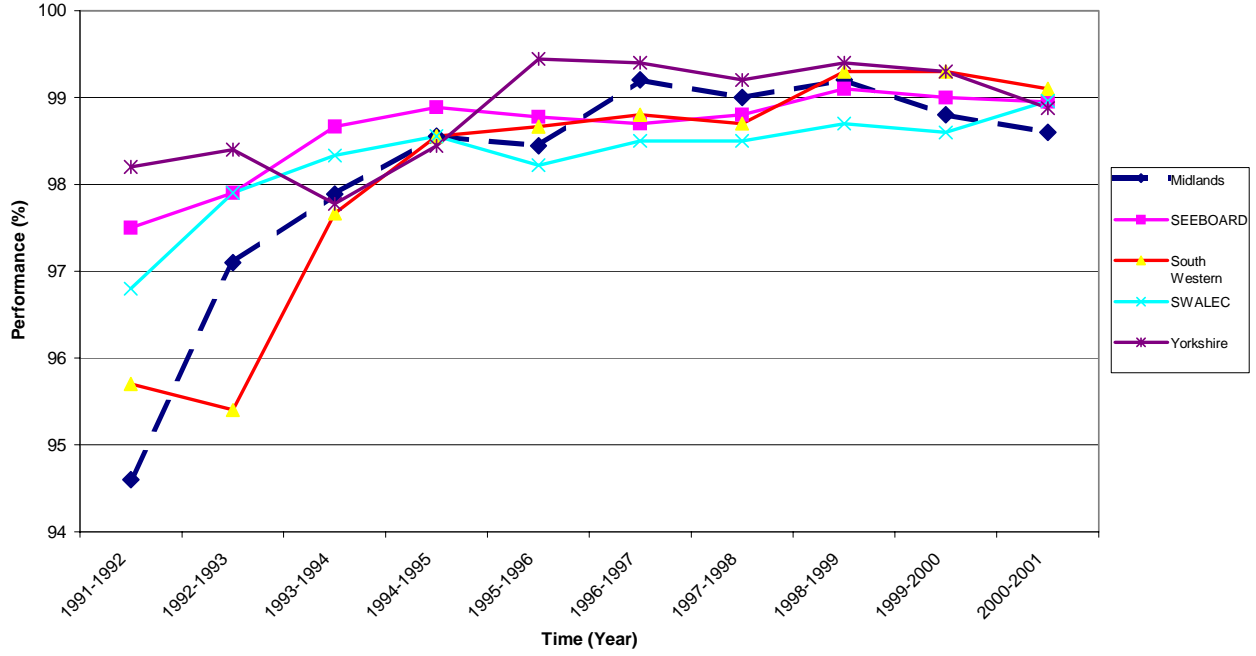
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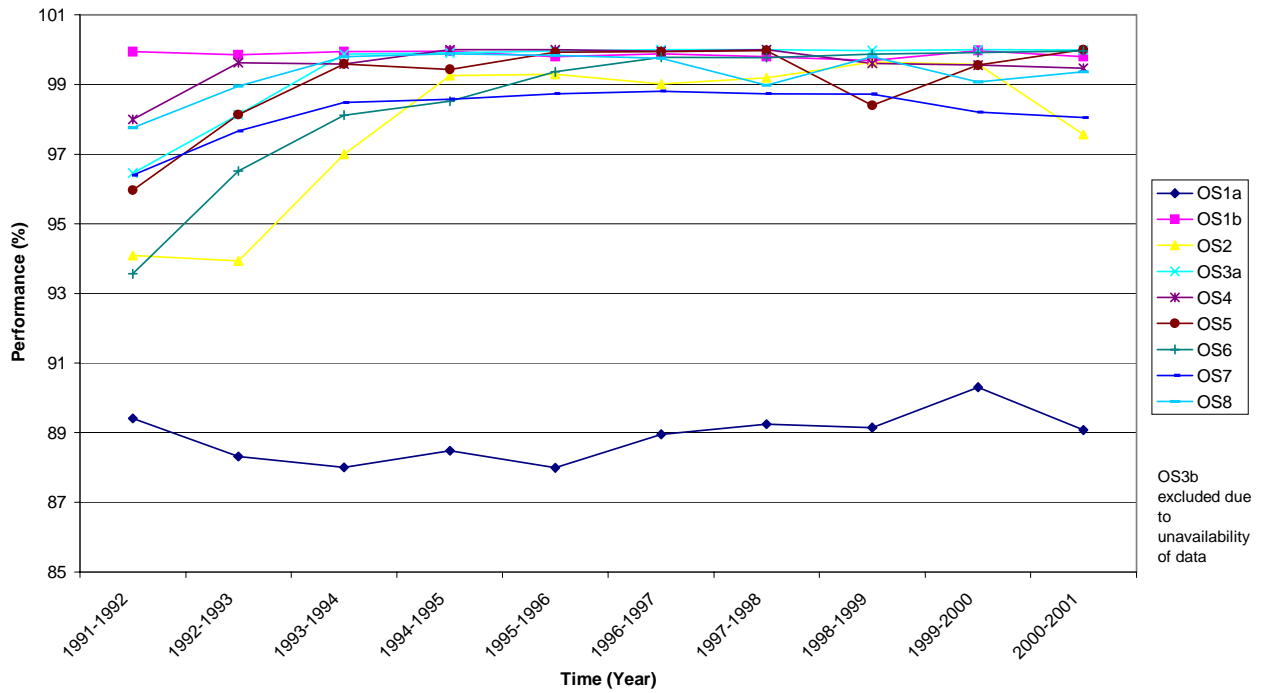
**Figure 11:**

**Average Performance - Overall Standards  
Midlands, SEEBOARD, South Western, SWALEC, Yorkshire**

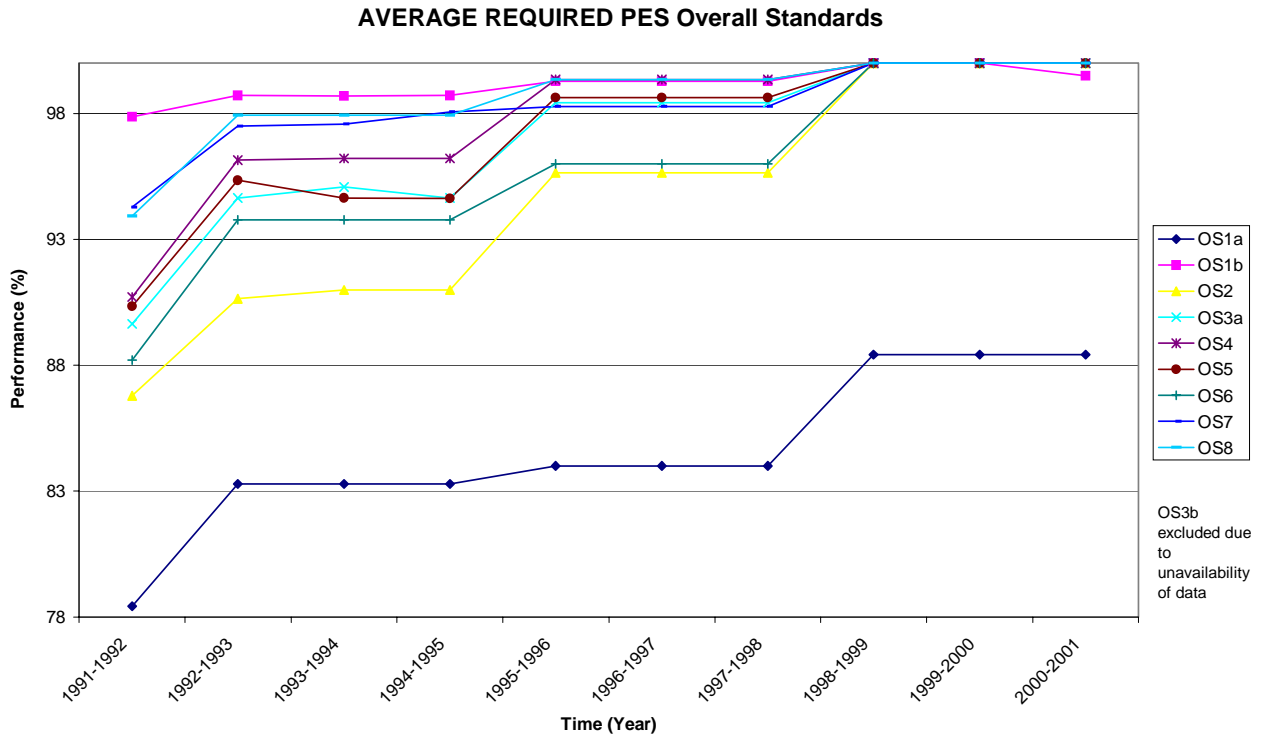


**Figure 12:**

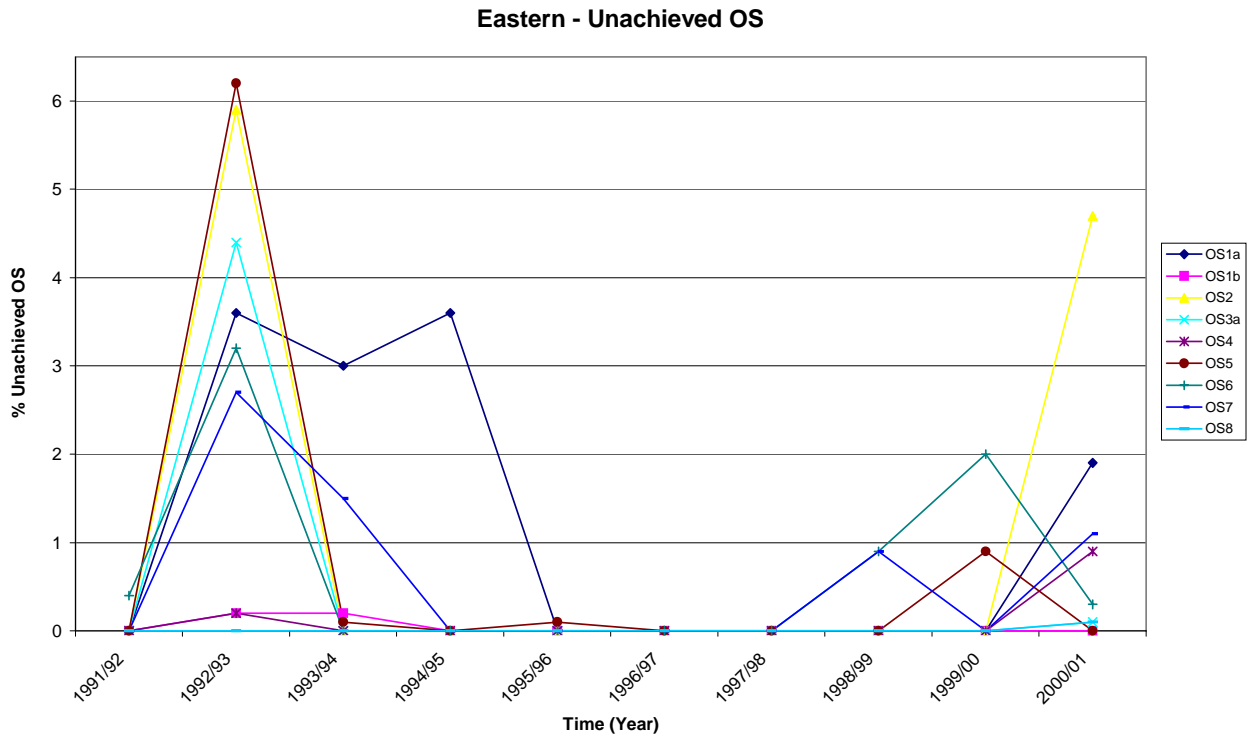
**AVERAGE PES Actual Achieved Level of Overall Standards**



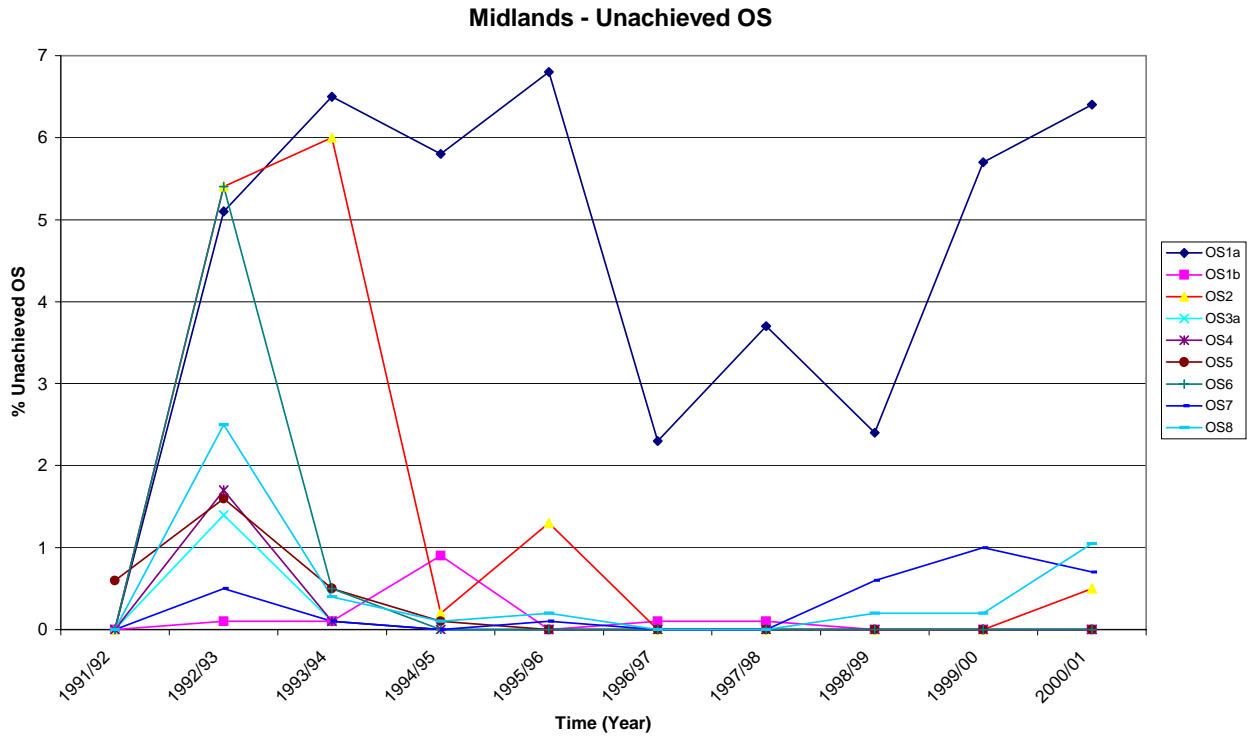
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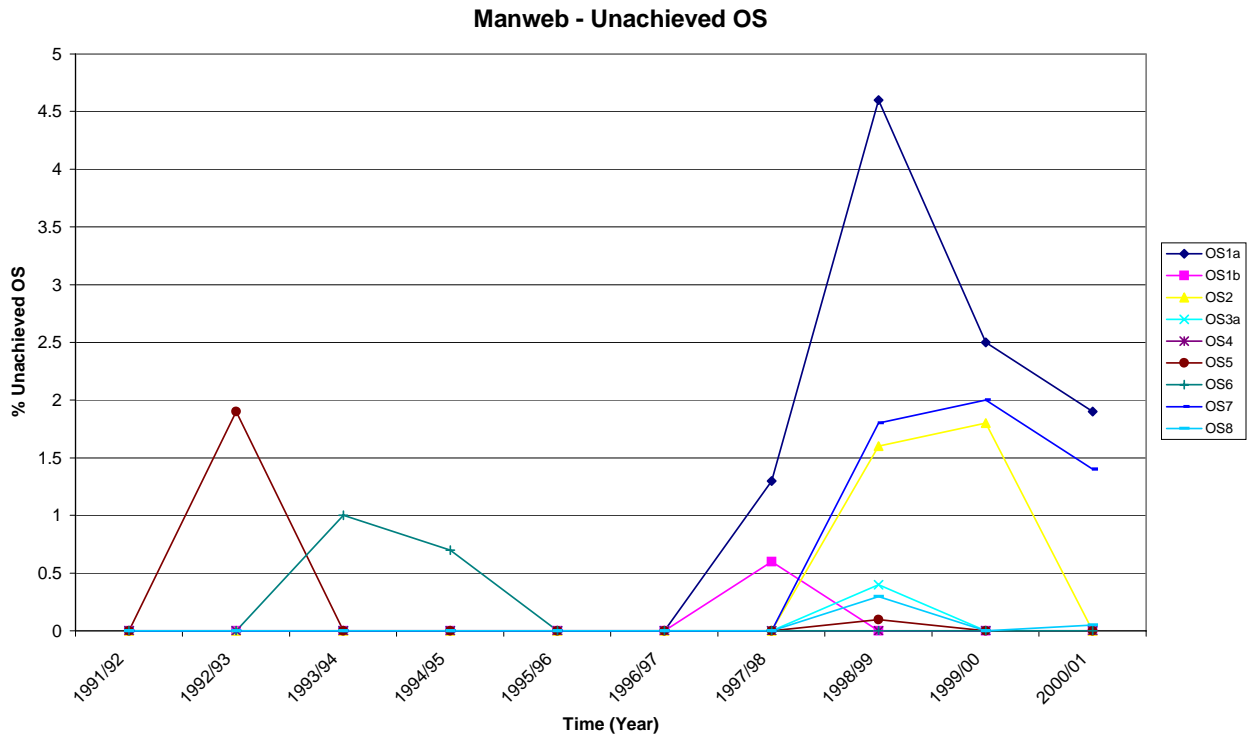
**Figure 14:**



**Figure 15:**

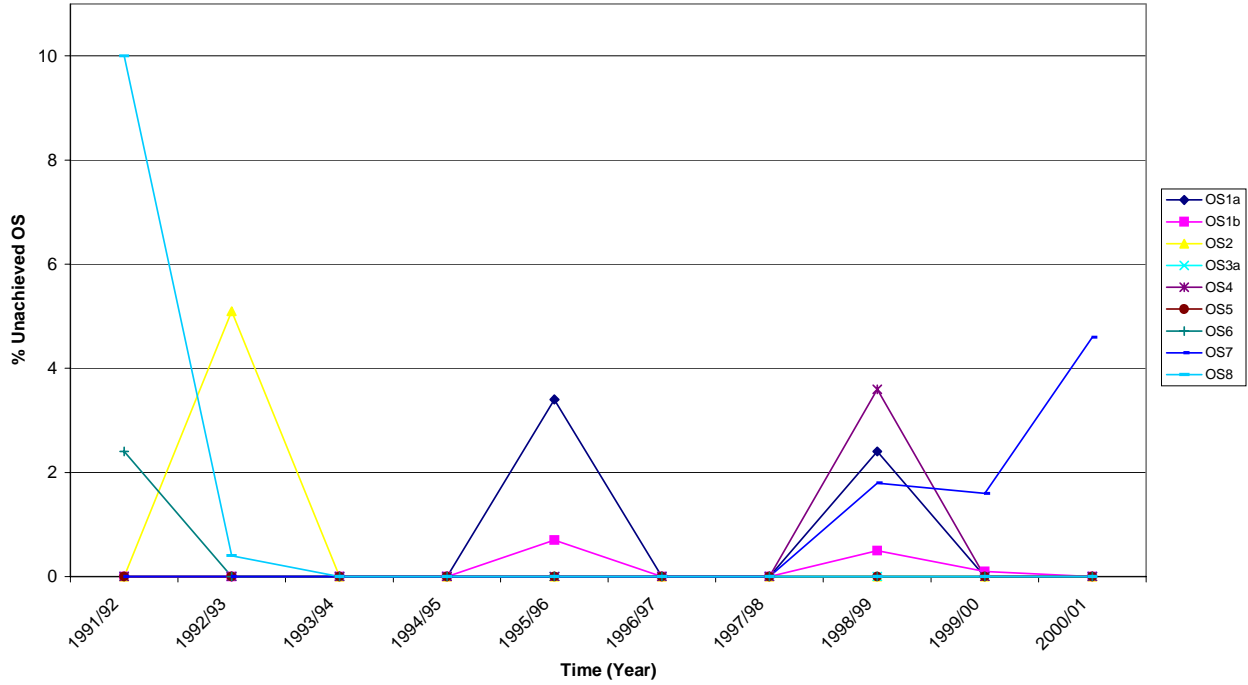


**Figure 16:**



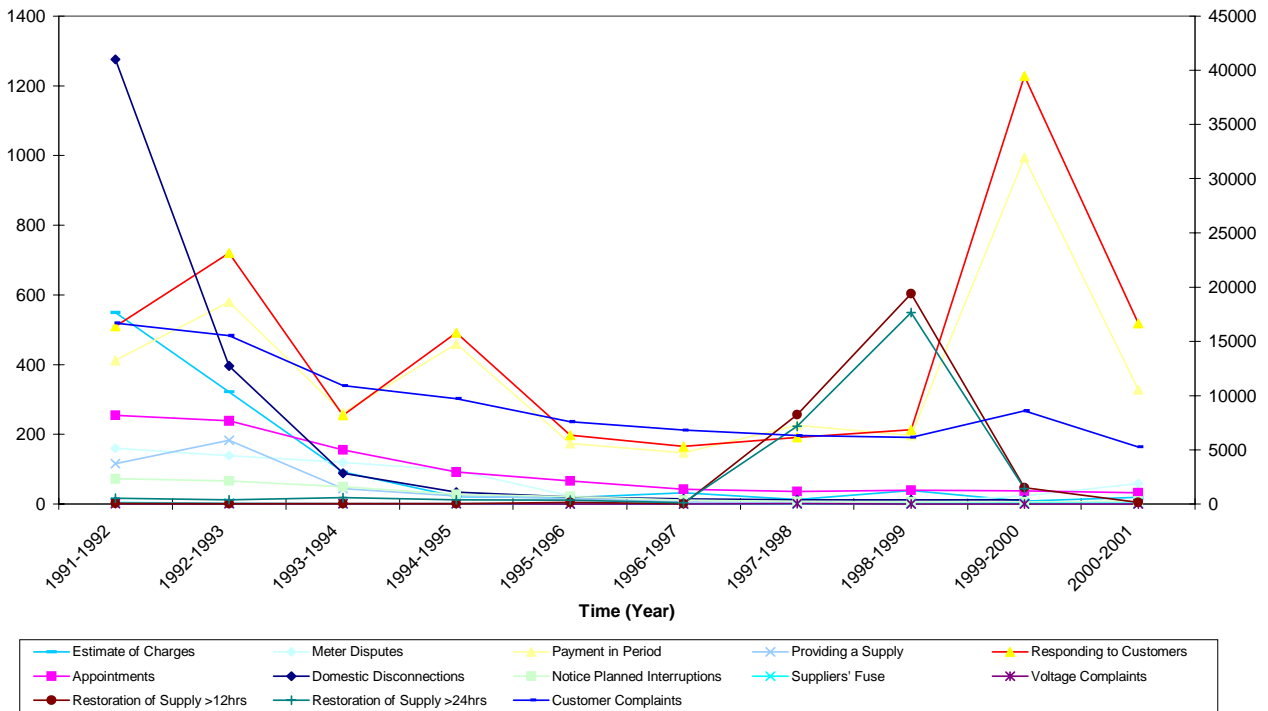
**Figure 17:**

**Hydro-Electric - Unachieved Overall Standards**

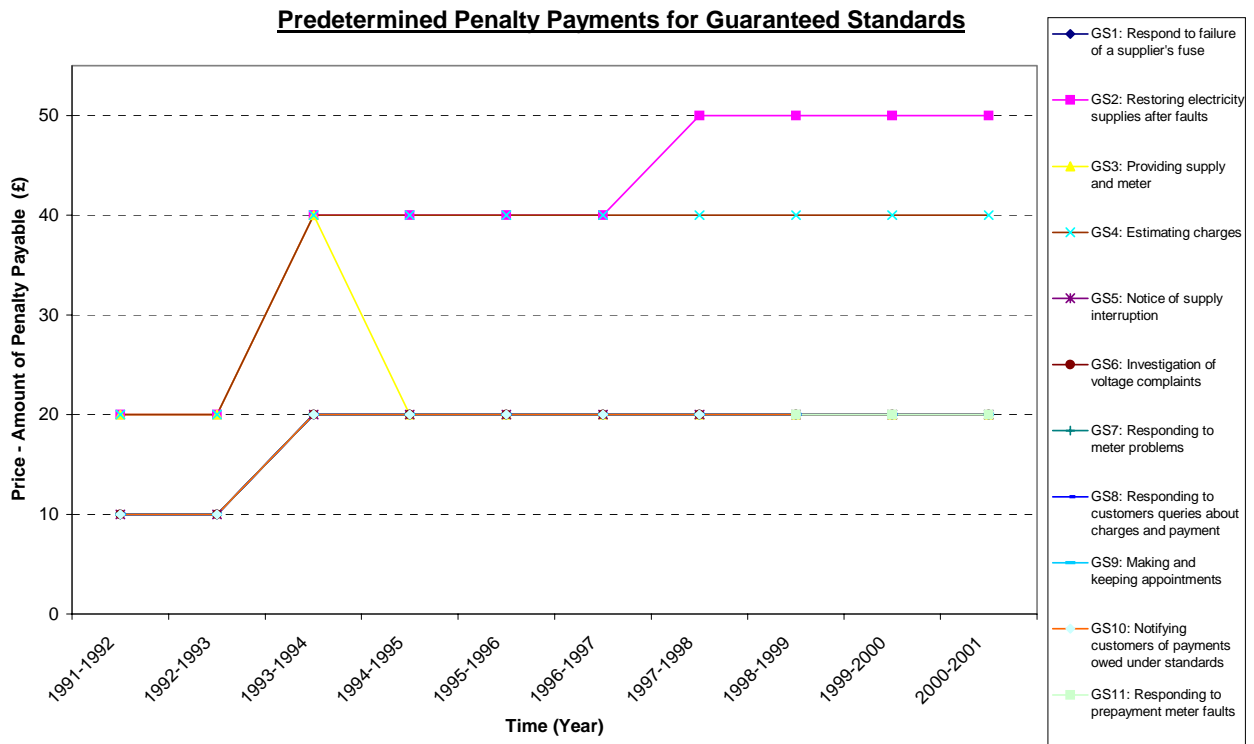


**Figure 18:**

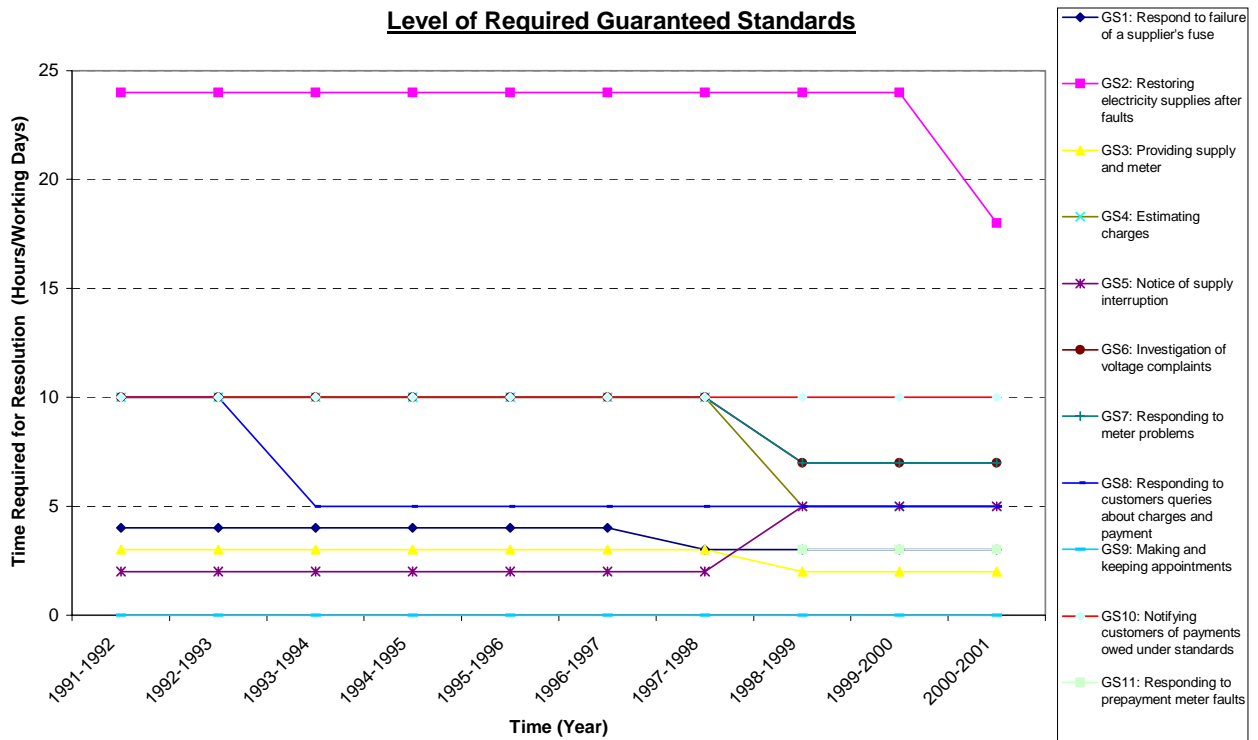
**Electricity Supply Industry - Guaranteed Standards**



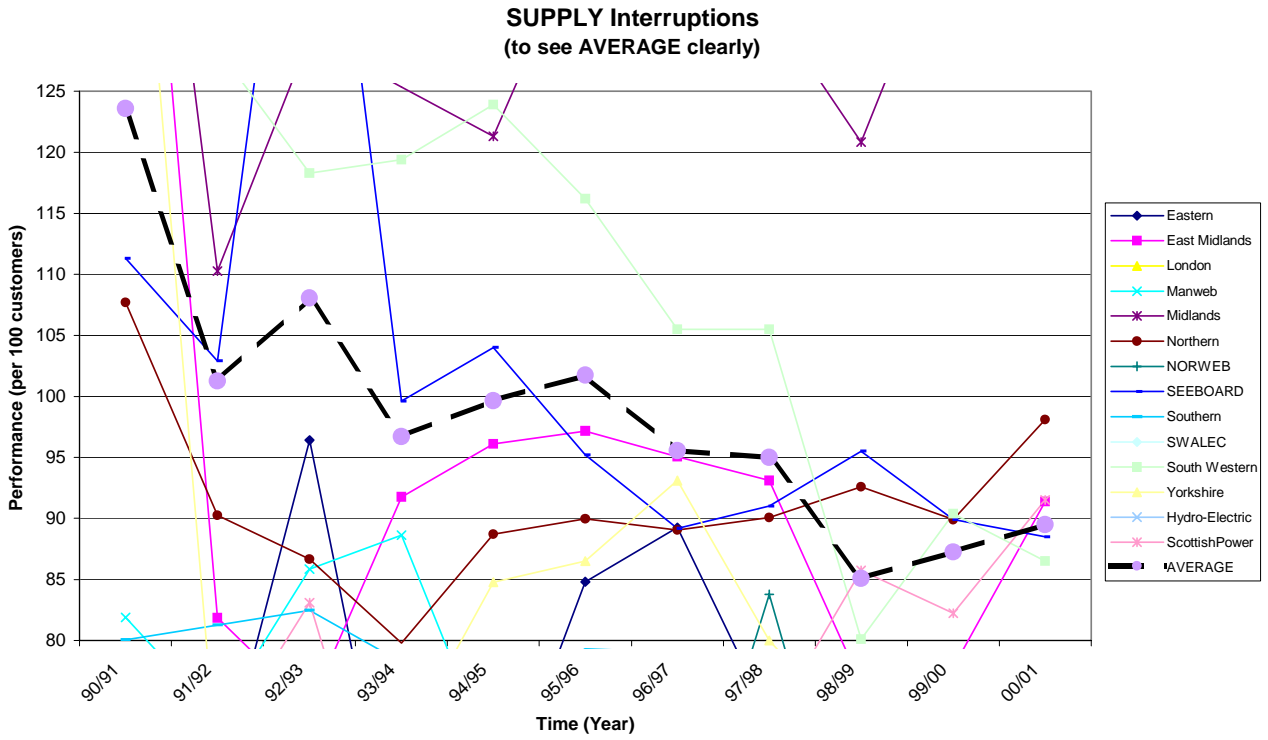
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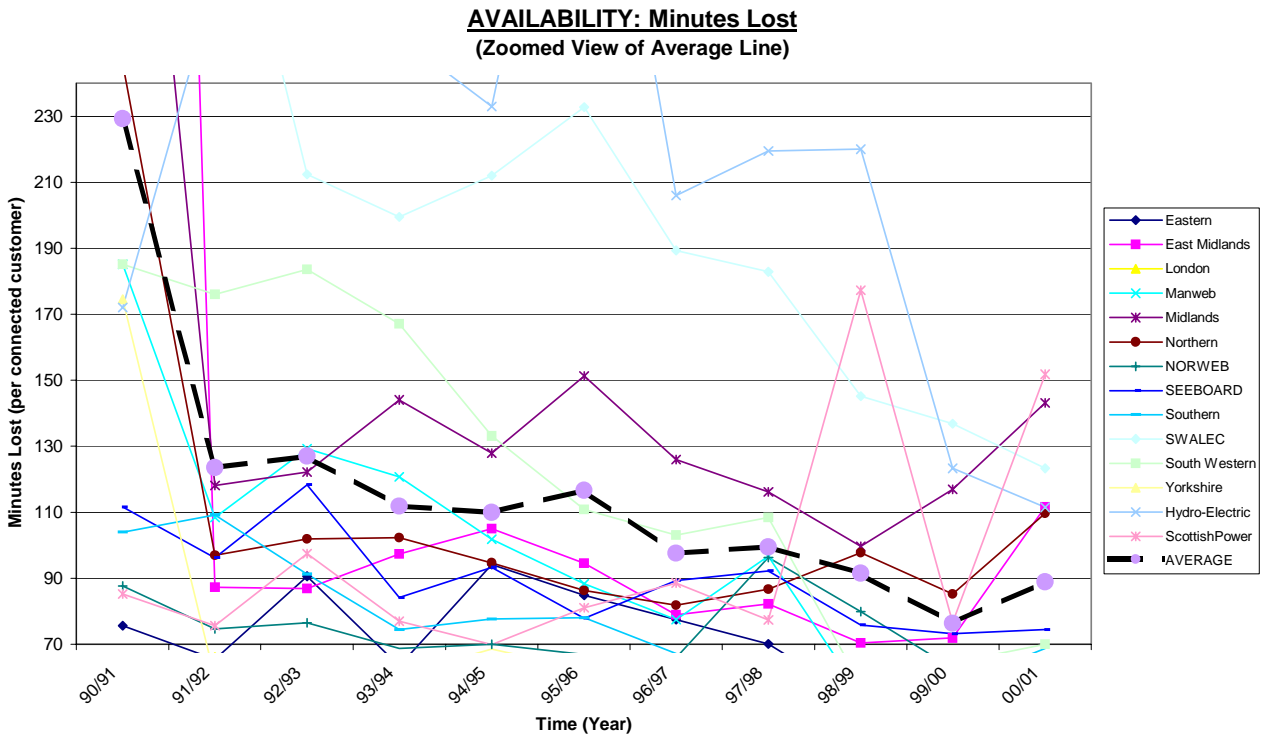
**Figure 20:**



**Figure 21:**

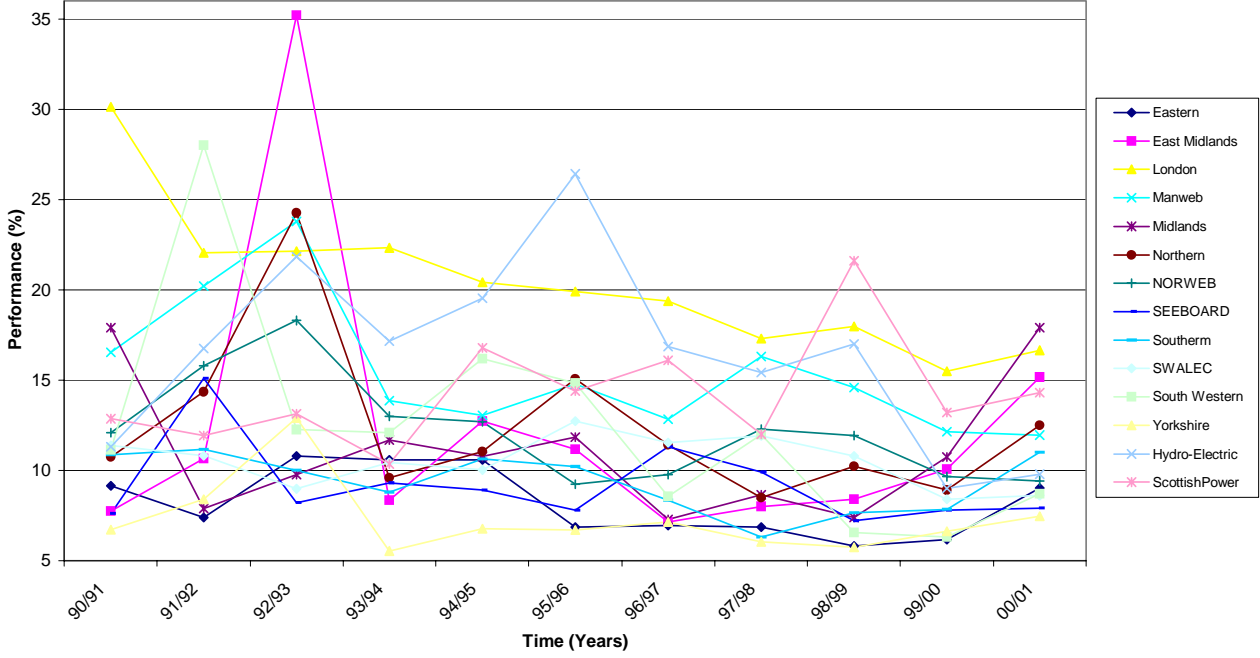


**Figure 22:**



**Figure 23:**

**QUALITY OF SERVICE: Interruptions due to Distribution Faults  
(Total of those not restored within 3 hours)**



**Figure 24:**

**QUALITY OF SERVICE: Interruptions due to Distribution Faults  
(Not Restored within 24 Hours - zoomed view)**

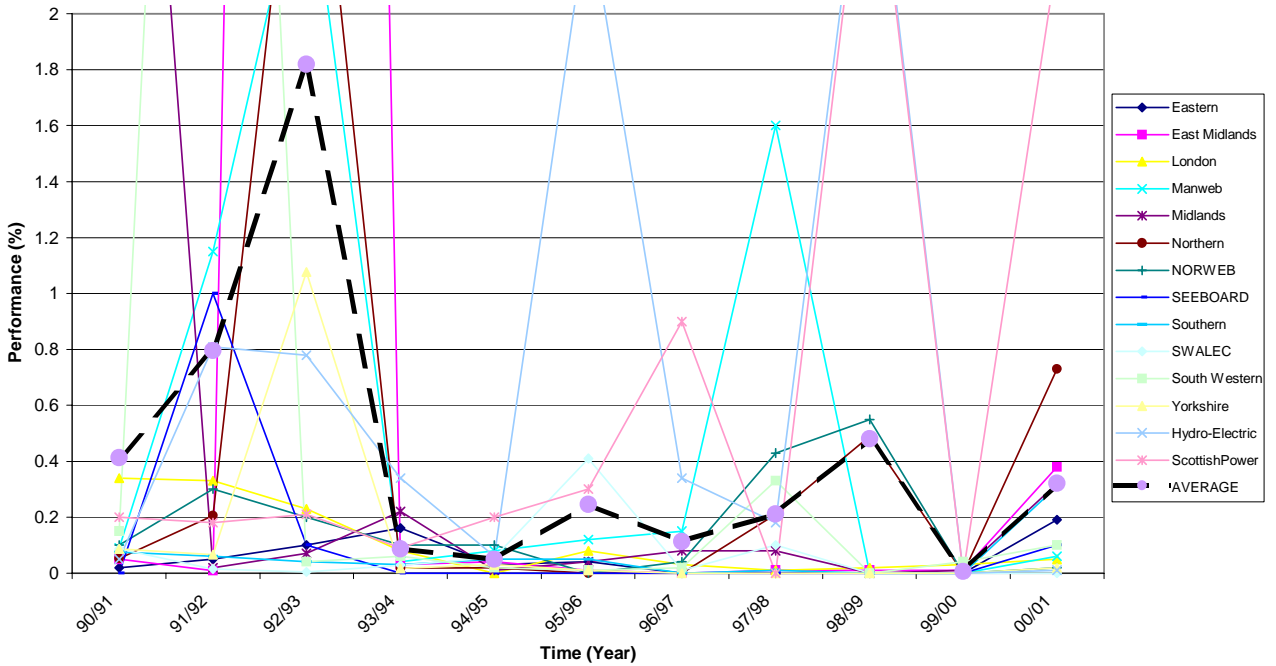


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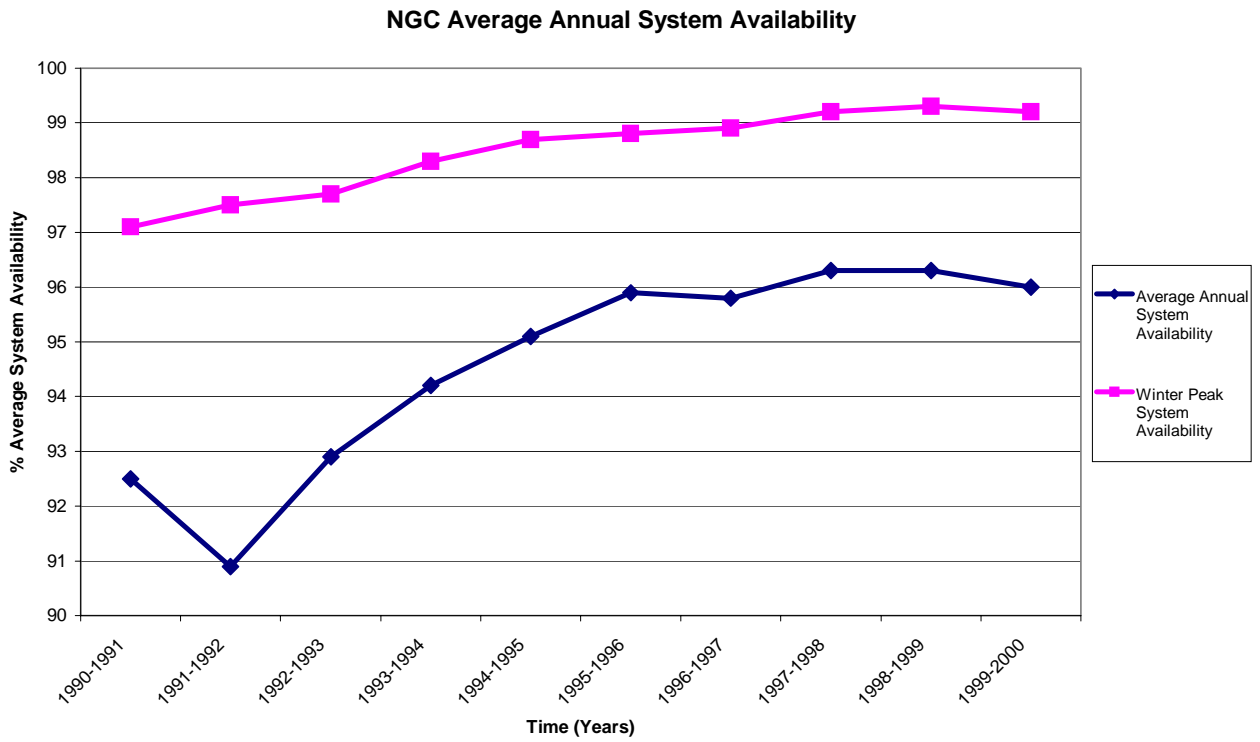
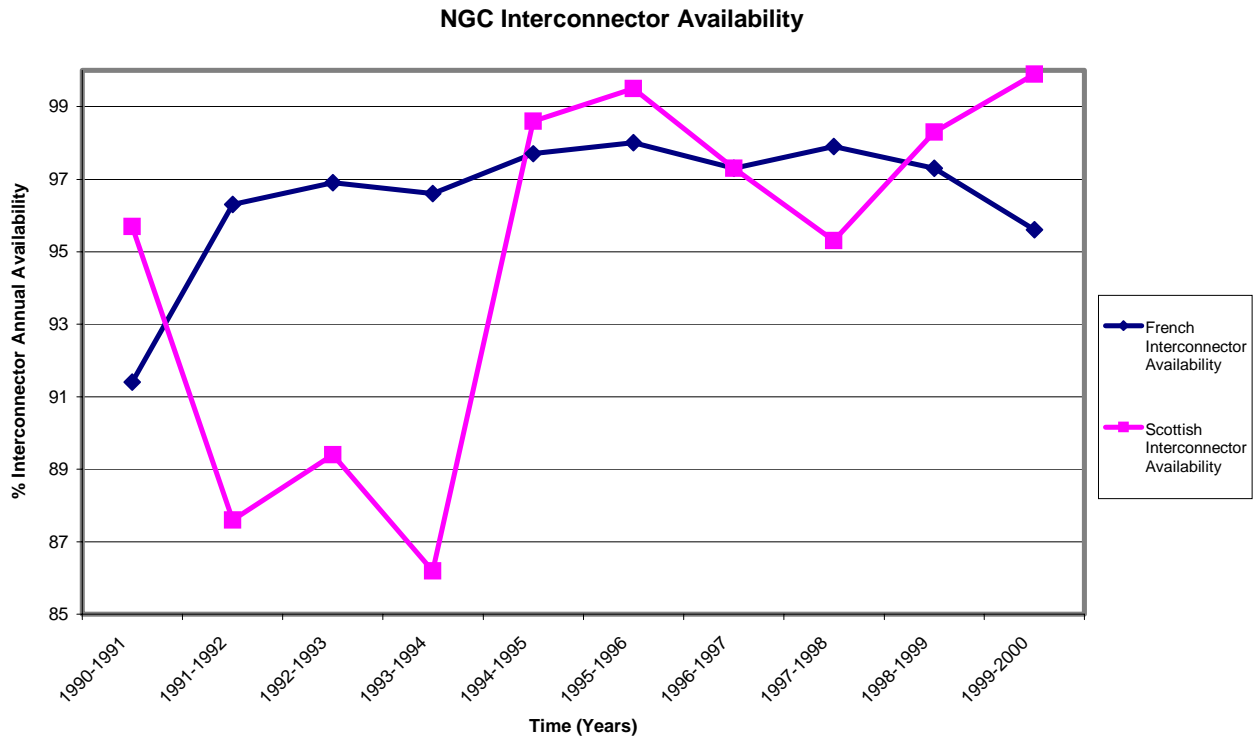
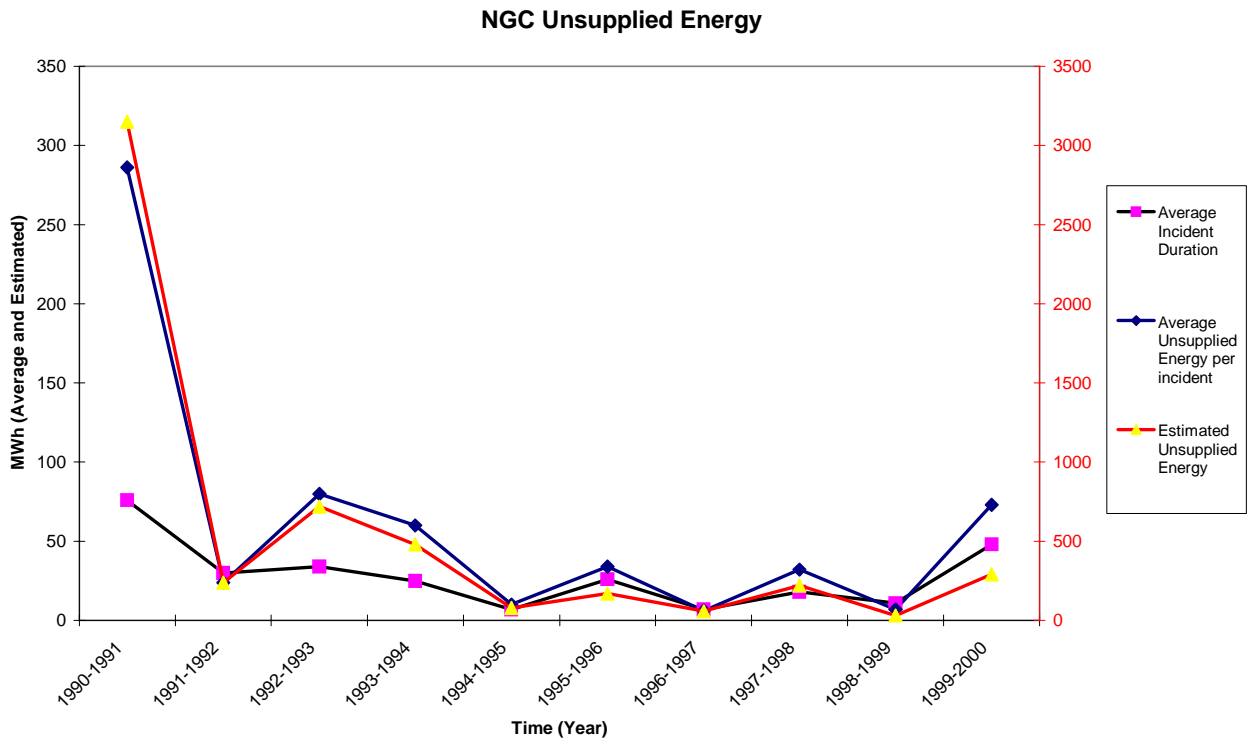


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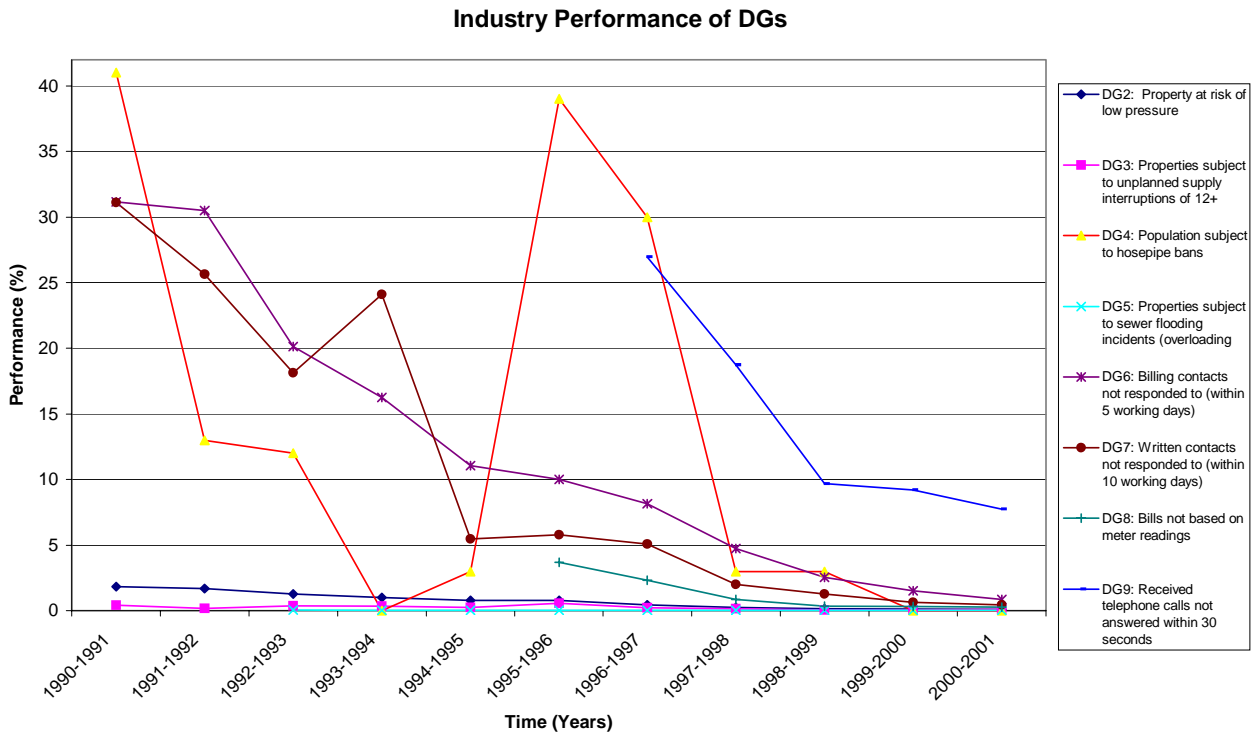




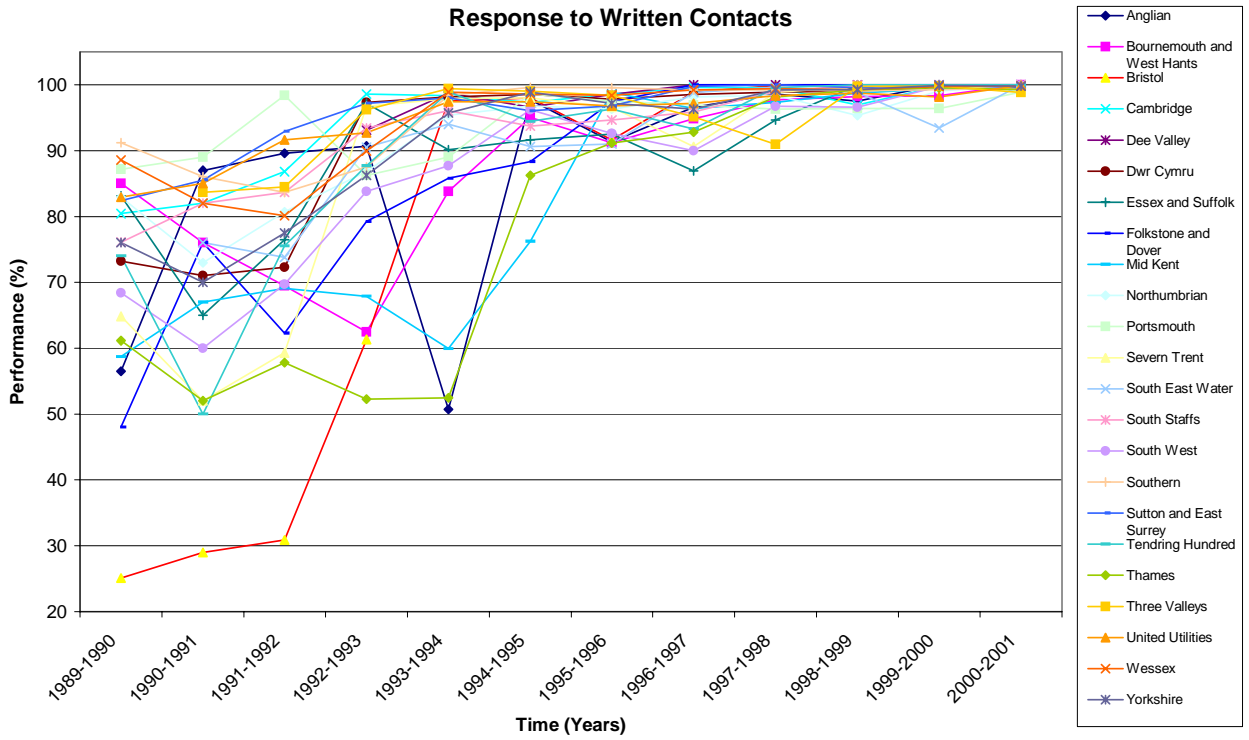
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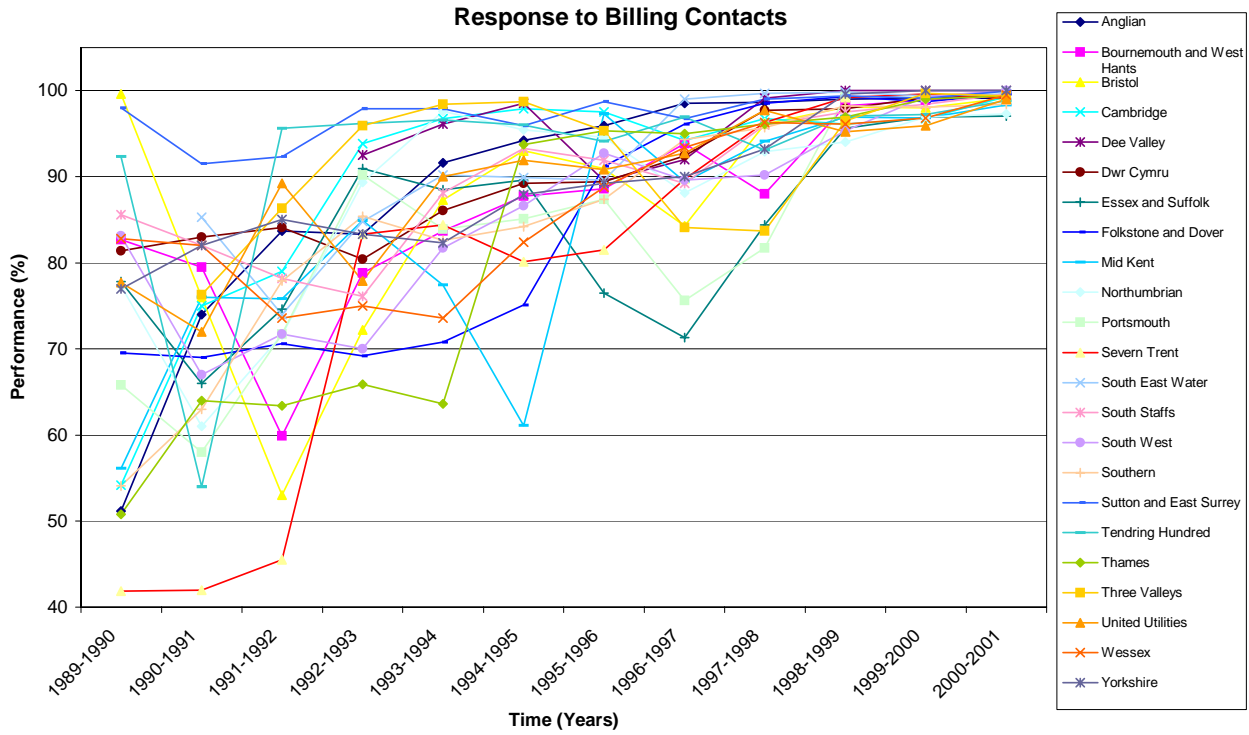
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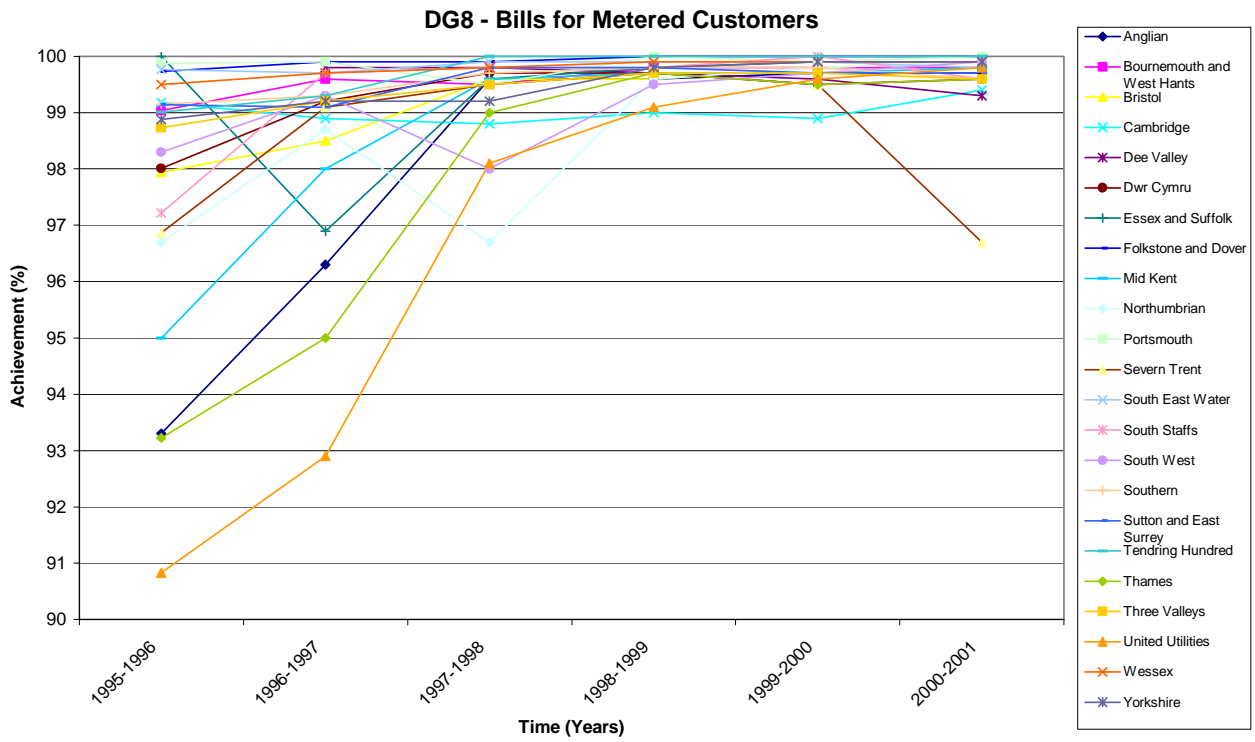
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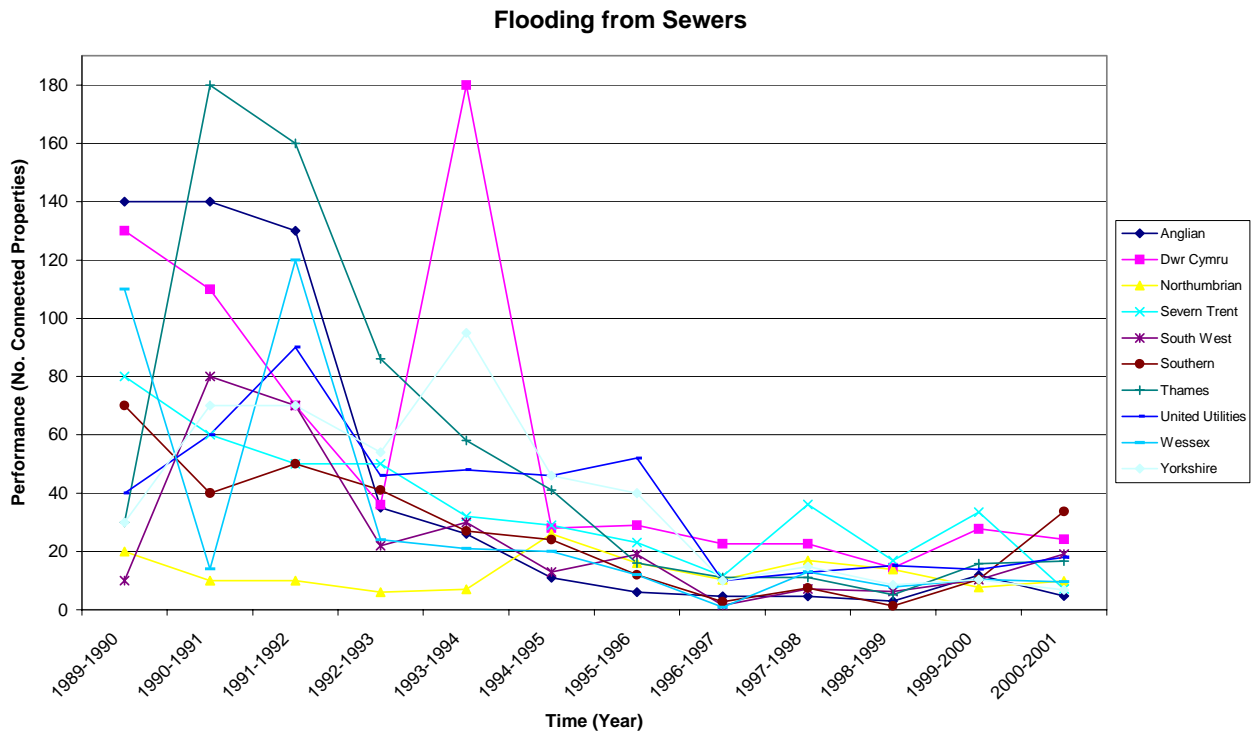
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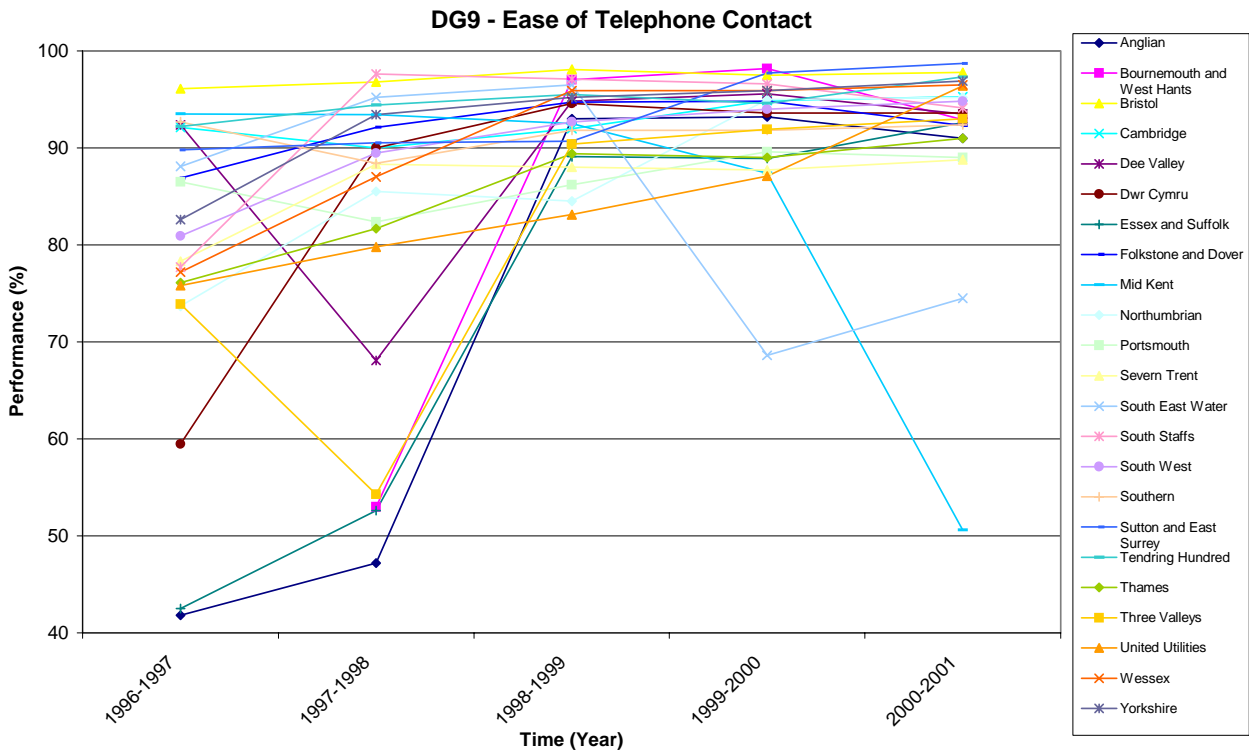
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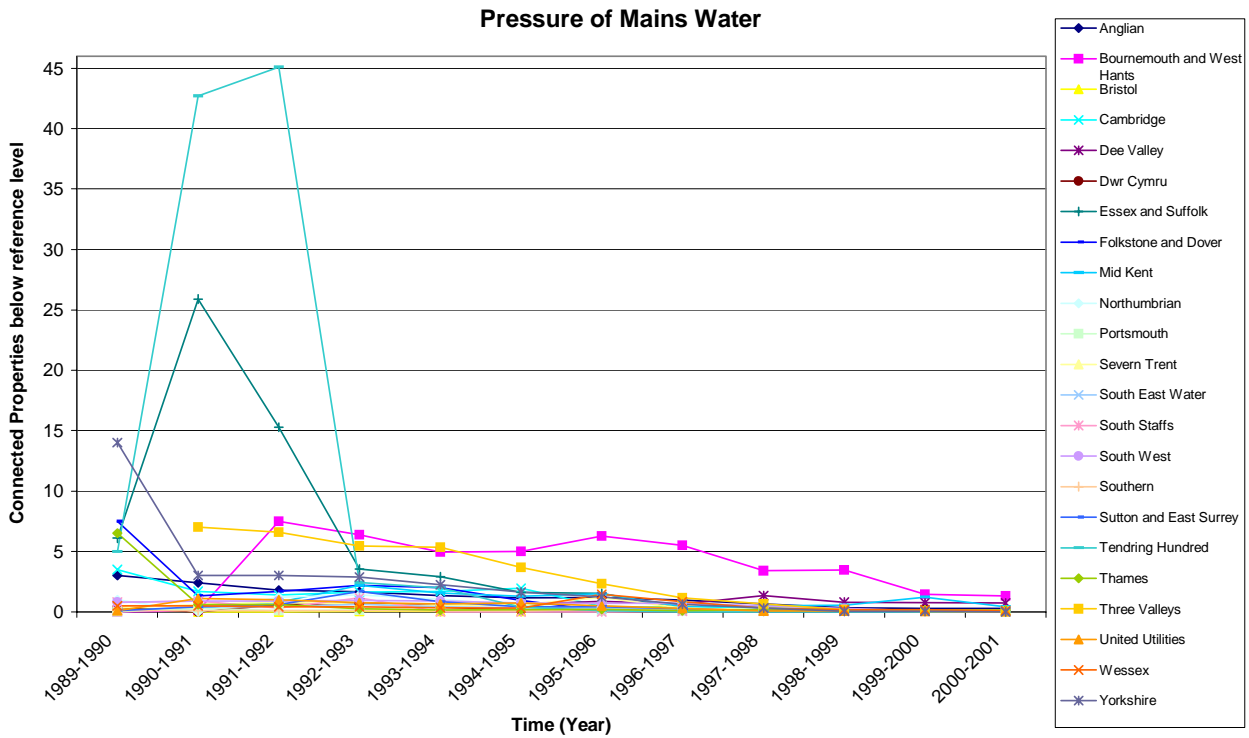
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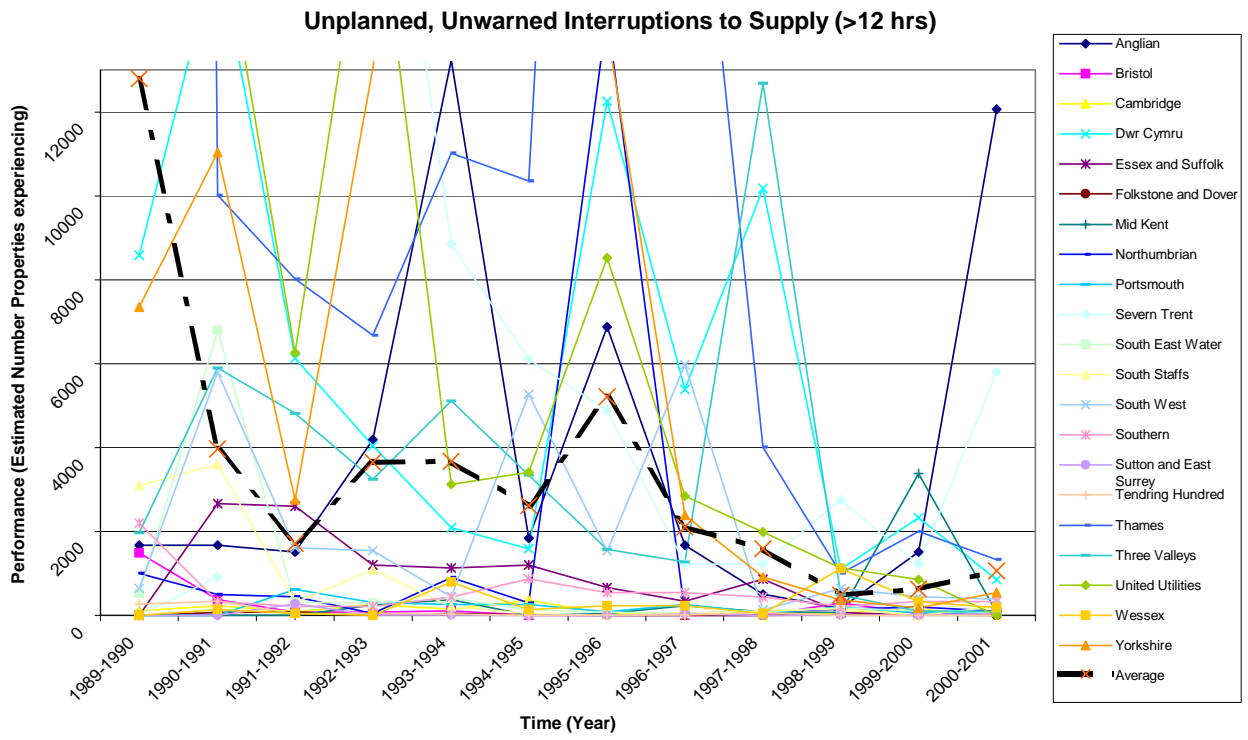
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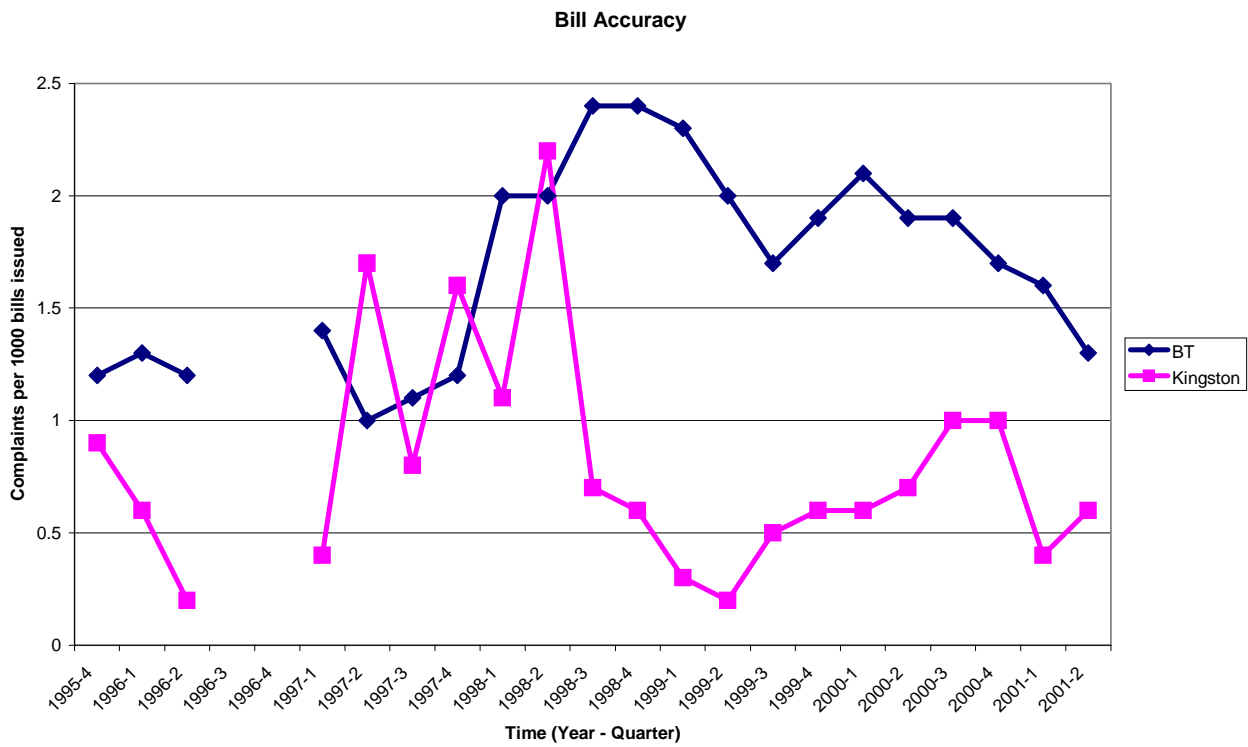
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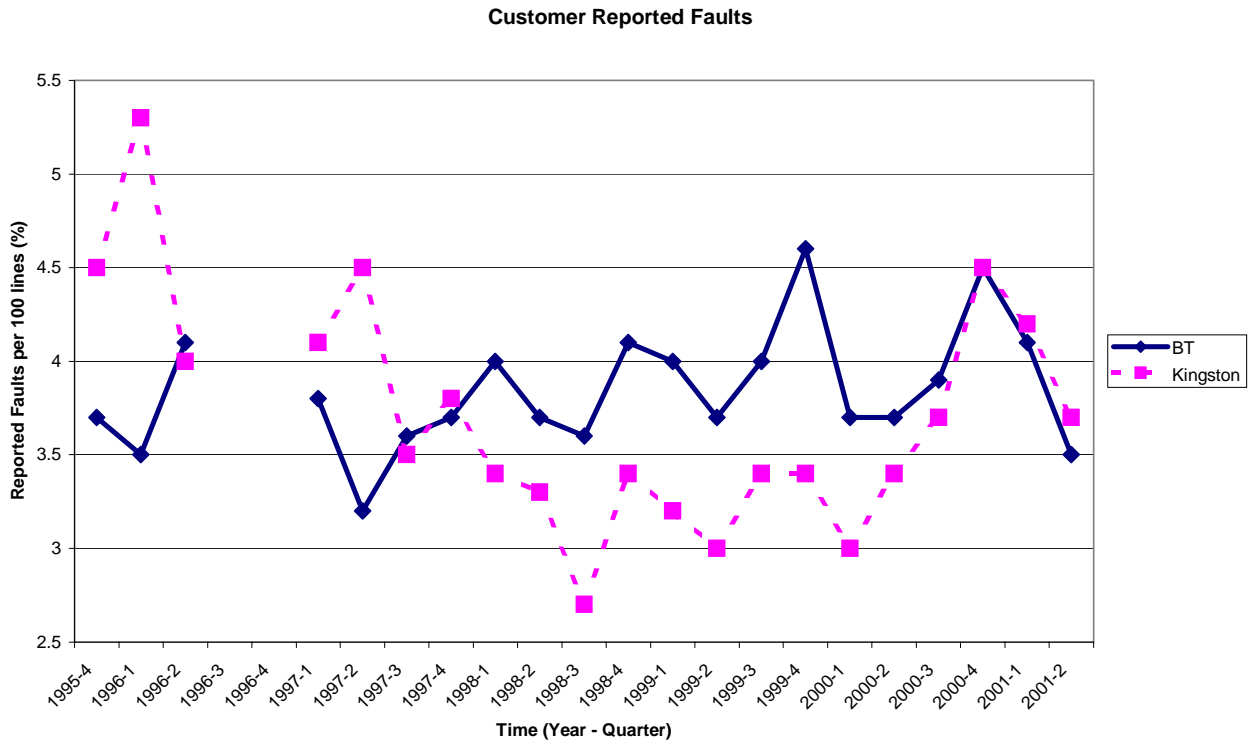
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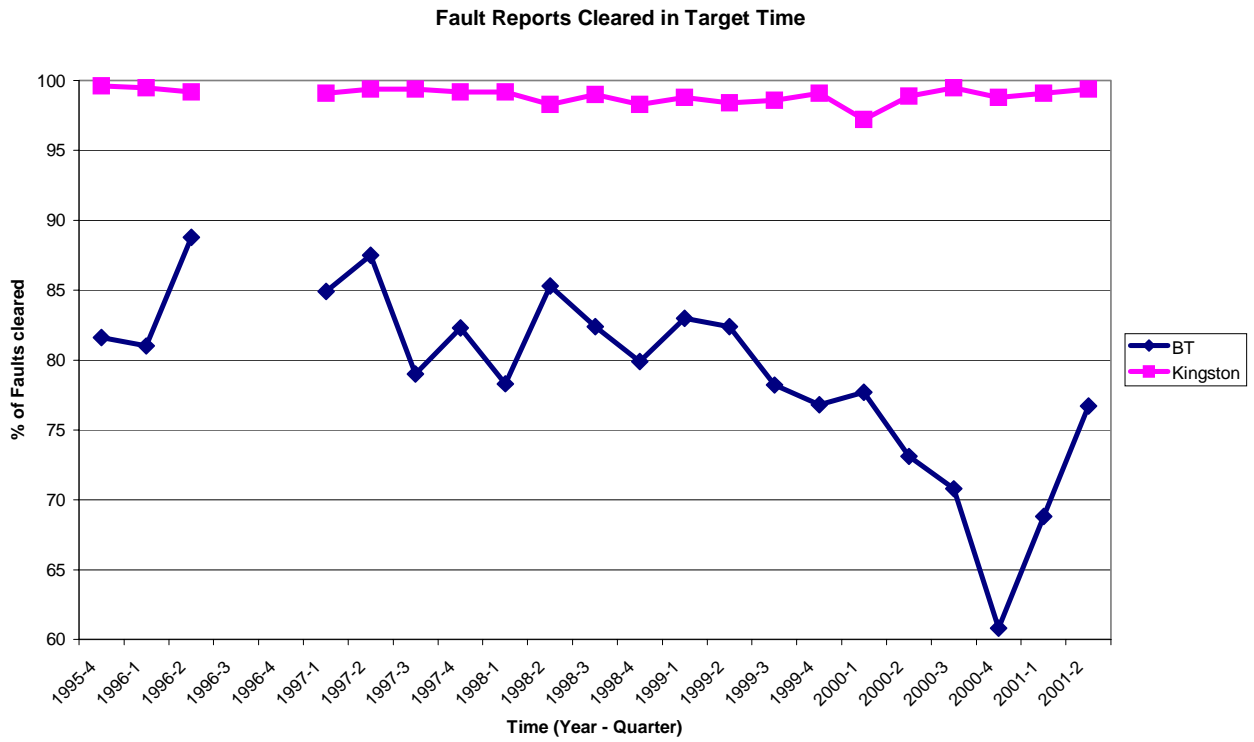
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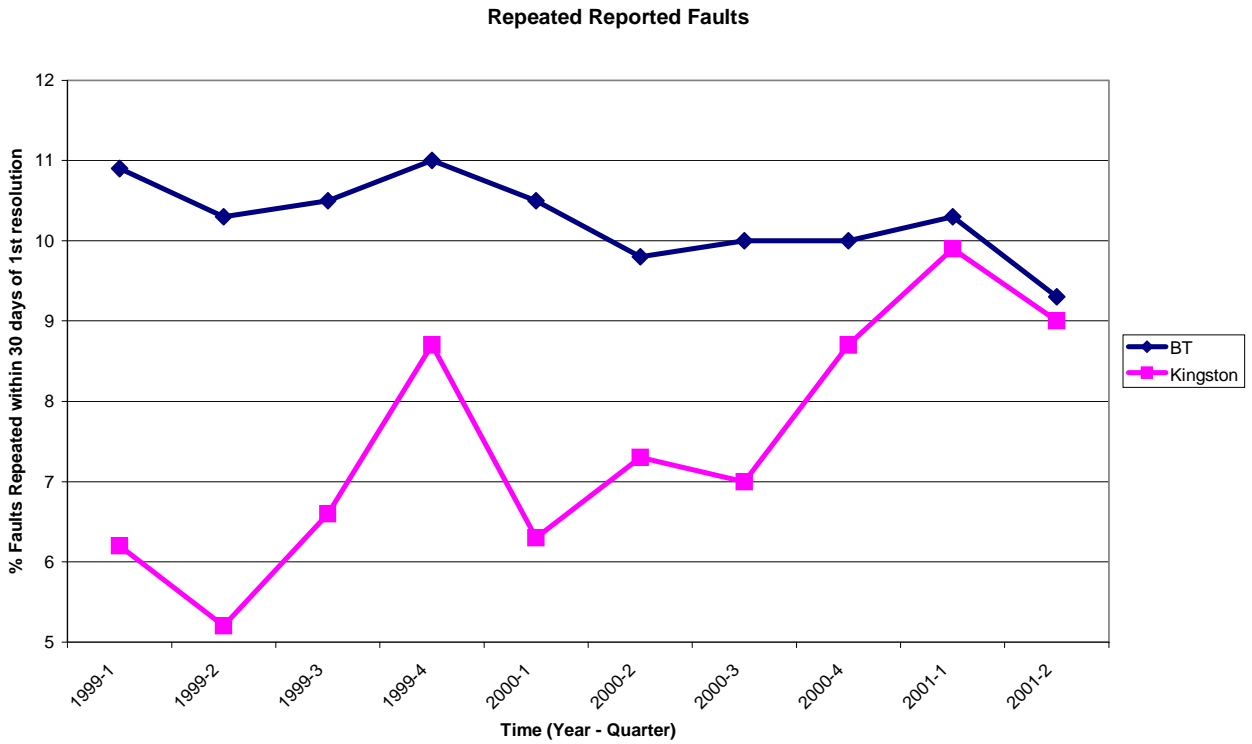
**Figure 37:**



**Figure 38:**



**Figure 39**



**Figure 40:**

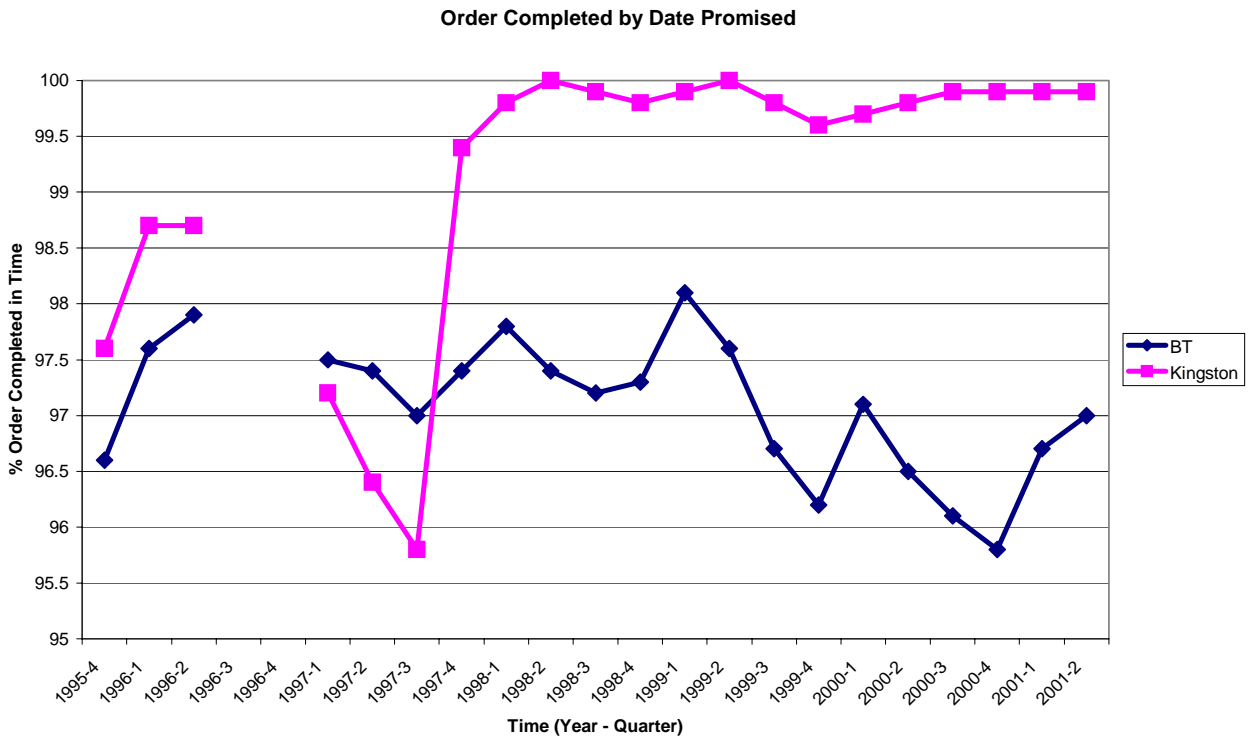


Figure 41:

