



**Response to Competition Commission  
guidelines on water merger references under  
Section 32 of the Water Industry Act, 1991**

**Response from Indepen Consulting**

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## **1 Introduction**

This document is Indepen's response to the consultation document "Water merger references made under Section 32 of the Water Industry Act 1991 Competition Commission Guidelines", July 2004. It broadly follows the structure of the guidance. Paragraph references are to paragraphs in the guidance.

Our response has been partially funded by a group of UK water companies. We have discussed our response with these companies but the views expressed remain those of Indepen.

We will place this document on our website once the consultation has closed. We are happy for the Commission to publish it.



## 2 Application of the guidance

### 2.1 Water mergers

The guidance defines 'water merger' by reference to the provisions of the Enterprise Act 2002 which deal with the circumstances under which enterprises can be treated as being under common ownership or common control.

The guidance applies to water merger references and describes the questions that the Commission must consider in respect of such a merger. The Commission will apply different tests to any other part of the merger. (Paragraph 1.5)

1.5	Part 3 of the Act applies to a merger of two or more water enterprises. This guidance applies only to water merger references where the Commission applies a different test from that applied in normal mergers. Some mergers may include both water enterprises and other enterprises. For guidance on the Commission's approach to any other parts of the merger (i.e. the non-water enterprises elements of a merger involving both water and other enterprises, which would include the application of the substantial lessening of competition test) see CC2: Mergers References: Competition Commission Guidelines.
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The guidance does not say how, in such cases, the Commission would reconcile conflicting conclusions about adverse effect. Nor does it say how the Commission will decide what remedy might be appropriate. The guidelines should be clearer about these points.

### 2.2 Water mergers with a Community dimension

In certain circumstances, a water merger has a Community dimension. From a non-legal standpoint, the guidance is confusing on the implications of this.

#### 2.2.1 Continuing applicability of the European Commission (EC) Decision

The EC's 1995 Decision recognised the UK's legitimate interest in maintaining sufficient comparators in the water industry. The Decision was to apply to legislation in force at the time and required a new application "*should any amendment be made to the UK regulatory legislation*". Since then the EC has revised the Merger Regulation (with effect from 1<sup>st</sup> May 2004) and relevant parts of the Enterprise Act have or are about to come into effect.

It is arguable that continued recognition of the UK's legitimate interest requires a new successful application. The Guidelines should say whether this is so and what the implications are.

#### 2.2.2 Consistency of treatment of mergers with and without a community dimension

In considering mergers with a community dimension, the Commission will acknowledge the need to maintain the minimum number of independent water enterprises necessary to ensure the effective operation of the regulatory regime and to apply Sections 32 to 34 of the Water Industry Act in a non-discriminatory, appropriate and proportionate manner.

In the case of referrals without a community dimension, however, the Commission will assess whether the merger has prejudiced or may be expected to prejudice the ability of the Director General of Water Services (DGWS) to make comparisons between different water enterprises.

These appear to be different tests, but it is not clear from the guidance whether the Commission views them as different. Assessing the DGWS's ability to make effective comparisons is not the same as assessing the effective operation of the regulatory regime.



The DGWS's ability to make comparisons is only one of many facets of the regulatory regime. The guidance should clarify the position.

A related question is whether the community dimension influences the scope of any remedies. Does the involvement of non-UK interests in a proposed or actual merger limit the scope of possible remedies?



## 3 Possible impairment of the regulatory regime

### 3.1 Use of comparators by DGWS in setting price caps

The following text is taken from the Commission's consultation document and is referred to in this section.

2.8	The DGWS is responsible for the economic regulation of the water industry in England and Wales. Section 2 of the WIA imposes duties and confers powers on the Secretary of State for Environment, Food and Rural Affairs (the Secretary of State for the Environment) and the DGWS. They are required, among other matters: to exercise their powers and perform their duties in the manner they consider best calculated to further the interests of customers; to secure that the functions of water enterprises are properly carried out in every area of England and Wales, and that such enterprises are able to finance the proper carrying out of their functions; and to promote economy and efficiency and facilitate effective competition on the part of water enterprises.
2.9	The main instrument of economic regulation is the provision in each company's licence (referred to in the WIA as the instrument of appointment) for a cap on annual price movements. Under the current licence provisions the DGWS sets this for each water enterprise for a five-year period following a price review (known as the periodic review). The first periodic review covered the years 1995/96 to 1999/00, the second periodic review covered 2000/01 to 2004/05 and the current periodic review covers 2005/06 to 2009/10. A company wishing to dispute the DGWS's determination of its price cap may appeal to the Commission for a redetermination.
2.10	<p>The DGWS bases his determinations of the companies' price caps on projections of the companies' costs for the period concerned. Under the general approach used by the DGWS (and also the Commission) in previous periodic reviews and proposed for the current one (covering 2005/06 to 2009/10), price caps are set so that each regulated business is projected to earn revenue equal to the total of projected operating costs, projected depreciation and projected infrastructure renewals charge plus the cost of capital on projected regulated capital value. The DGWS's efficiency assessments enter in the following ways.</p> <ul style="list-style-type: none"><li>(a) The DGWS's operating cost projections for each company take into account both its historical level of costs and an assessment of its efficient level of operating costs based on econometric modelling of all water companies' performance;</li><li>(b) The DGWS's projections of depreciation, infrastructure renewals charge and regulated capital value are affected by the DGWS's projections of each company's required capital expenditure on maintaining and enhancing its assets.<ul style="list-style-type: none"><li>(i) The DGWS's projections of capital expenditure on maintenance take into account the historical level of expenditure by the company, the DGWS's assessment of whether this is sufficient to maintain serviceability of its network and the DGWS's assessment of the efficiency of the company's capital maintenance expenditure, which is informed both by econometric modelling and a comparison of companies' costs for various standard asset works (known as the 'cost base').</li><li>(ii) The DGWS's projections of capital expenditure on enhancement are based on his assessment of the projects that are needed and the cost of implementing them; the DGWS adjusts the companies' figures for efficiency, using the cost base, and may also challenge them for scope and consistency, for instance where one company's general approach can be demonstrated to be inferior to that of another company.</li></ul></li></ul> <p>This is a condensed summary of price cap methodology. The DGWS's present approach is set out in detail in his methodology papers for the current periodic review.</p>
2.11	Comparisons between companies play an important role in the DGWS's determination of price caps for two reasons. First, the DGWS uses comparisons of companies' approaches and their estimated capital costs to help estimate the efficient future level of capital expenditure. Second, the DGWS uses econometric modelling of companies' historical operating costs, together with estimates of future efficiency improvements, to estimate the efficient level of future operating expenditure. (The DGWS also makes some use of econometric modelling of capital maintenance expenditure). Econometric modelling is used to adjust for differences between companies (eg in geography and heritage) which affect operating costs. The number of comparators is of particular importance to econometric modelling since its statistical robustness depends on the number of observations.
2.12	At periodic reviews, comparisons between companies are an important aid to the DGWS in projecting costs rather than a source of direct competition between companies. The DGWS's approach to water regulation is not an example of pure yardstick or comparative competition since a water company's price cap is affected by its own costs as well as other water companies' costs. For example, at the 2000/01 to 2004/05 periodic review, the DGWS set price caps broadly on the basis that each company would reduce operating costs over five years by about 60 per cent of the excess of its own costs over the adjusted costs of the company at the frontier of efficiency. (Thus in the first year price caps were assumed to reduce by about 12 per cent of the excess). Furthermore, the DGWS's approach sets price caps for the most efficient company on the basis of its own costs together with an estimate of the reduction in costs due to forecast improvements in the efficiency frontier. This is in contrast to pure yardstick regulation where the most efficient company's price cap reflects other comparable companies' costs and hence it earns profits over and above the cost of capital, equal to the difference between its own costs and the costs of the comparator companies. Under the DGWS's approach, companies' incentive to reduce costs results principally from the price cap being fixed for five years (so that companies retain any cost savings compared to the DGWS's projections for five years).
2.13	The DGWS makes annual comparisons of the quality of companies' customer service and relative performance is reflected in an adjustment to price caps. Companies' price caps for 2000/01 to 2004/05 included adjustments of +0.5% (for companies with the highest quality of service) to -0.5% (for companies with the lowest quality of service).
2.14	The Commission considers that the advantages to the DGWS of comparisons go beyond the effects on setting price caps at periodic reviews. The DGWS publishes tables comparing companies' performance on various matters including quality of customer service and relative efficiency and companies are concerned about their position in these tables and stimulated to seek improvements. (Any such effect is separate from any longer term effect on efficiency through price caps). Second, comparative information is useful to the DGWS in appraising company proposals in a variety of areas, including tariffs, leakage and transfer pricing, and may enable the DGWS to negotiate improved proposals that better fulfil his functions.

The guidance states (paragraphs 2.11 and 2.12) that comparisons between companies are important to the DGWS in projecting the companies' costs and determining price caps.

Evidently, important issues about assessing impairment depend on how the DGWS uses comparisons in setting the price cap and for other purposes. Paragraphs 2.8 to 2.12 of the guidance summarise how the DGWS's efficiency judgements affect his price cap determinations and paragraphs 2.13 and 2.14 consider the other uses he makes of comparisons.



This topic is complex. It has been widely discussed in the sector but remains controversial. There are two main reasons for this

- the econometric modelling used by the DGWS to underpin the comparisons is considered by many, not only by those in the industry but also by other sector regulators and respected academics, to be not soundly based
- the DGWS's and Ofwat's explanations of how they use the results of the comparisons in setting price caps are inconsistent, incomplete, confusing and opaque.

These important matters might affect the value of the loss of a comparator.

The Commission has considered the issues in the context of previous water merger references but the evidence presented has been partial and the issues remain unresolved. It is helpful that the consultation provides an opportunity to raise additional points about which guidance is necessary to settle the controversy.

The explanation in the guidance of the methodology is "*a condensed summary of price cap methodology*" and paragraph 2.10 states that

*"the DGWS's present approach is set out in detail in his methodology papers for the current price review."*

Unfortunately, this is insufficient as a basis for guidance as to how the Commission will proceed. This is for three reasons.

- The DGWS's methodology papers did not fully describe the approach. Specifically, the papers did not say how he intended to use the results of assessments based on the econometric modelling (i.e. the catch up part of the calculation) together with the conclusions he reaches about frontier shift.
- It is not clear that the DGWS has applied in his (draft) price limit determinations the approach he described in the methodology papers. The DGWS's reports on the draft determinations do not provide sufficient detail of how the DGWS made the efficiency assessments either in general or for individual companies.
- In discussions with the companies, senior members of the DGWS's office have stated that the approach applied has changed from that set out, albeit incompletely, in the methodology.

As far as we are aware, the DGWS has not explained properly how he uses the comparator information in setting price limits. If the Commission has a full understanding, it should include this as part of the guidance. If not, the guidance should say more about how the Commission intends to proceed in those circumstances.

With respect to uses of comparisons other than for setting price limits, paragraph 2.14 contains the statement

*"Any such effect is separate from any longer term effect on efficiency through price caps."*

It is not clear whether the statement means

- there are such effects and they are separate or
- if there are such effects, then they are separate.



The guidance should be clearer. This former is an unsupported statement. It might reflect the view of the DGWS but it is not necessarily soundly based.

## 3.2 Effects of merger on the value of comparisons

The following text is taken from the Commission's consultation document and is referred to in this section.

2.15	<p>The Commission considers that an increase in common ownership across one or more companies may be expected to affect the value of the DGWS's comparisons for the following reasons:</p> <ul style="list-style-type: none"><li>a) a reduction in the extent of independent ownership may reduce the reliance the DGWS can place on efficiency comparisons in setting price caps and, given the need to ensure water companies can finance their functions, lead him to set higher price caps (for all companies) than would otherwise be the case;</li><li>b) to the extent that the DGWS can place lesser reliance on efficiency comparisons, water companies may expect future price caps to be based to a greater extent on factors related to their own costs and to a lesser extent on factors independent of their own costs and consequently may have less incentive to achieve costs savings;</li><li>c) a reduction in the extent of independent ownership may also be expected to affect the wider use by the DGWS of comparisons for benchmarking purposes.</li></ul> <p>The Commission may need to consider whether it would be practicable and cost-effective for the DGWS to use alternative methods of comparison to offset partially or wholly the effects of the merger on his comparisons through developing comparative methods which are less sensitive to the number of comparators than those currently used.</p>
2.16	<p>In assessing the impact of the merger on the value of the DGWS's comparisons, the Commission will take into account the following factors, which are discussed in paragraphs 2.17 to 2.22 below:</p> <ul style="list-style-type: none"><li>a) the extent of common ownership (2.17);</li><li>b) any other factors suggesting that the companies involved in the merger could remain to some extent under independent management after the merger (2.18);</li><li>c) the extent to which the costs of one or all of the merging companies are, before the merger, not independent of the costs of other water companies (2.19);</li><li>d) any particular similarities between the companies involved in the merger (2.20);</li><li>e) whether the company or companies being taken over are among the most efficient, for example, the loss of a frontier or price-setting company might mean that the DGWS would have to set softer price targets for the whole industry (2.21);</li><li>f) the number and quality of remaining independent comparators (2.22).</li></ul> <p>The Commission will also take into account any other relevant factors.</p>
2.17	<p>A transaction may qualify as a water merger but significant interests may continue to be held after the merger by other parties in one or more of the companies involved in the merger. This could make it more likely that the companies continue under independent management after the merger (for instance as a result of the existence of a shareholder agreement) and hence less likely that the merger prejudices the ability of the DGWS to make comparisons.</p>
2.18	<p>Similarly, the Commission will also consider any other factors suggesting that the companies would continue to some extent under independent management after the merger and whether this reduces the impact on the DGWS's comparisons.</p>
2.19	<p>But where aspects of the operation of one or more of the companies involved in the merger are, before the merger, not independent of other water companies, the effect on the DGWS's comparisons is likely to be less than otherwise. This may be the case where a company's choice of similar operating techniques, methods, technologies or management tools to other water companies might have partly diminished the value of one or all of the merging companies as a comparator. A possible example is if the operations are contracted out to another water company. Nevertheless, the Commission considers that, in general, comparisons are likely to be more problematic where there is common management than where there is contracting out to another company.</p>
2.20	<p>Where merging companies have specific similarities which are not shared by other water companies, comparisons are likely to be of special importance to the DGWS and are likely to have a greater impact on the DGWS's comparisons. For example, comparisons of similar sized companies are likely to be particularly valuable as may be those with similar geological and other conditions.</p>
2.21	<p>The DGWS's price caps are partially based on costs of the most efficient companies. Hence, a merger affecting one or more of the most efficient companies is likely to be of greater significance to the DGWS's comparisons, at least in the short term. Of course, past performance is not necessarily a guide to future performance; hence it is not only mergers of the most efficient companies that are of concern. Where companies come under common management, they might be expected to adopt the methods of the more efficient individual management but this may not always be the case. (Price reductions resulting from merger efficiencies are considered further in paragraphs 3.33-3.34).</p>
2.22	<p>As noted above (paragraph 2.15(a)), the robustness of econometric modelling declines as the number of independent observations declines. Generally, the smaller the number of remaining independent comparators, the greater is likely to be the impact of a merger on the quality of the DGWS's comparisons. For this reason a merger of companies supplying sewerage services (where during 2000 there were only 10 comparators, including Glas Cymru which contracts out the management of its sewerage operations to another company) is likely to have a greater impact than a merger that reduces the number of companies only supplying water services (where during 2000 there were 20 independent comparators including Glas Cymru).</p>
2.23	<p>In considering the impact of a merger on the DGWS's comparisons, the Commission will take into account all the factors set out above and not just the effect on the robustness of econometric modelling. Hence the impact depends on the circumstances of the merger under consideration and it is not possible to state a minimum number of comparators below which the DGWS's ability to make comparisons would be prejudiced.</p>

Paragraph 2.15 identifies three ways in which an increase in common ownership might impair the value of comparisons. Two of these relate to the DGWS's ability to set lower price limits with more comparators and the third relates to other uses of comparisons between companies.



Paragraphs 2.16 to 2.23 identify and discuss six factors that the Commission will take into account in assessing the impact of the merger on the value of the DGWS's comparisons.

### **3.2.1 Impact on price limits**

If we are right in saying that it is not clear how the DGWS actually uses comparators in setting price limits, determining the value of a loss of a comparator will be problematic. In making its assessment, the Commission will have to form a view about

- how the DGWS uses, or might in future use, comparisons to set price limits
- the extent to which the relevant approach benefits from the existence of more rather than fewer companies being under separate control
- to what extent the DGWS's approach and companies' perceptions of the approach influences companies' incentives to become more efficient.

Without consideration of these questions, the Commission will not be able to determine the value of the loss of a comparator. We believe it is important that the guidance should refer to the need for the Commission to investigate these matters, in addition to the matters listed in paragraph 2.16.

Appendix A argues that the DGWS's ability to set price limits, using his current methods, does not depend to any significant extent on the existence of comparators. Our purpose in presenting this is to illustrate the potential difficulty in making judgements in these areas and the need for the guidance to be more explicit about how the Commission will consider these matters at a merger reference.

The paragraphs in the guidance that refer to the matters to which the Commission will have regard (paragraphs 2.16 to 2.23) do not cover these matters. The guidance should be more explicit about how the Commission will establish

- exactly how the DGWS has used or intends to use comparators in setting price limits, and
- the implications of this for the possible value of the loss of a comparator.

### **3.3 Other uses of comparisons between companies**

Paragraph 2.15 (c) refers to the DGWS's use of comparisons for benchmarking purposes. This is another complex area.

In Appendix B, we suggest that the incentive power of Ofwat's regulatory regime on a specific company arises mainly from the price cap mechanism. As the guidance acknowledges, incentive power for a specific company is less if that company's price cap is not completely exogenous. This reduction will depend on the number of comparators (incentive power is less if there are fewer comparators) but we believe that this effect is weak in comparison to that provided by the operation of the price cap.

In Appendix C, we consider incentives for service quality improvements. We suggest that these should not depend on comparative performance since customers do not necessarily value higher service quality above the cost of achieving the quality increase. The relevant benchmark is the economic level of quality where willingness to pay and cost are equal at the margin.

If the Commission is to establish that the value, if any, of the loss of a comparator arises from purposes other than establishing price caps, then the Commission will need to find out



- exactly how the DGWS uses comparators for these various purposes
- consider the incentive properties of each use
- consider how and how much these incentives will be affected by a reduction in the number of comparators.

These considerations should be reflected in the Commission's guidance as to how it will approach the relevant questions in a water merger reference.



## 4 Remedial action

The following text is taken from the Commission's consultation document and is referred to in this section.

<b>Remedial action</b>	
3.5	In deciding these questions, the Commission shall "in particular have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the adverse outcome and any adverse effects resulting from it."
3.8	The remedial action that the Commission will decide should be taken will always depend on the facts and circumstances of the case. When deciding what an appropriate remedy is, the Commission will consider the effectiveness of different remedies and their associated costs and will have regard to the principle of proportionality. These are discussed in the next sections.
3.15	A second consideration is the prospect of the remedial action being implemented and complied with. Some remedies are a commitment as to future behaviour or to a standard of acceptable future behaviour. There may be less certainty with some remedies compared to others that the remedies will have the desired effect. A relevant factor will be the ease of monitoring notwithstanding the possibility of establishing a compliance programme. The effectiveness of any remedy is reduced if elaborate, and possibly costly, monitoring and compliance programmes are required. One-off remedies that change the structure of the market (so-called structural remedies) are (subject to the proportionality test as described in paragraph 3.9) likely to be preferable to remedies that impinge upon the behaviour or conduct of firms (so-called behavioural remedies) as they address the effect of the merger directly and, once implemented, will require comparatively little, if any, monitoring or enforcement of compliance.
<b>Regulatory remedies</b>	
3.26	The Commission will also consider whether to recommend that action be taken by others, in particular the DGWS. This could include changes to the merging companies' price caps and licence conditions requiring the provision of information to the DGWS.
<b>Possible relevant customer benefits</b>	
3.33	A merger can lead to cost savings due to economies of scale in the supply of water and/or sewerage services. The Commission will assess both the extent of the expected cost savings and the extent to which any such cost savings can be expected to lead to relevant customer benefits by being passed on to the merged company's customers through lower price caps.
3.34	In assessing whether the merger is likely to lead to relevant customer benefits, the Commission considers that relatively little weight can be attached to mere forecasts of future cost savings that would hypothetically be passed on to customers at future periodic reviews. It is likely that much more weight can be attached to anticipated cost savings which are supported by immediate proposed amendments to companies' price caps. Where this is the case, customer benefits accrue in the short term as well as the longer term. In normal circumstances, the Commission will also expect customer benefits to be secured for five years through adjustments to the terms of the companies' rolling incentive mechanisms. The Commission will also consider evidence on the details of how cost savings may be achieved by the merging companies. This will help to show whether or not cost savings are likely to continue beyond the initial five year period.

If a merger gives rise to a detriment to the regulatory regime (merger with a European community dimension) or if it gives rise to a detriment to the ability of the DGWS to use comparators to set price limits (merger without community dimension), the Commission should be transparent in setting out possible remedies.

Inter alia, the Commission should say what it means by paragraph 3.5 of the guidance. There is evidently an important point here, but it is meaningless without any guidance about what the Commission will take the Act and the two sets of Regulations referred to in the footnote to mean. The guidance should be helpful about such matters rather than leave them obscure.

The consultation document states (Paragraph 3.8) that the Commission intends to decide the remedy based on the "*facts and circumstances of the case*". By definition, this implies uncertainty for potential merger parties. The Commission should be as transparent as possible in setting out guidelines, not only about the remedies it might employ, but also about how it expects them to operate. If the Commission cannot explain how it intends to operate, it should explain why.

Paragraph 3.34 says that the Commission "*considers that relatively little weight can be attached to mere forecasts of future cost savings that would hypothetically be passed on to customers at future periodic reviews*". If this is so, it should also apply to the assessment of the detriment. The valuations proposed by Ofwat are themselves 'mere forecasts' of the type described.

Work by Ofgem on the issue of mergers in electricity distribution is also relevant here.

Ofgem<sup>1</sup> stated that the detriment of being able to make no comparisons was approximately £384m (2001-02 prices) or the equivalent of £32m for each further merger in the distribution

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<sup>1</sup> Mergers in the electricity distribution sector, Policy statement, May 2002



sector. This compares with Ofwat's range of £40 - £620m as set out in evidence to the Commission<sup>2</sup>.

The Public Accounts Committee (PAC) highlighted this huge difference in its response to the National Audit Committee's 2002 report: 'Pipes and Wires'. The PAC requested Ofgem and Ofwat to consider whether the differences in their approach were "... *justified and (to) publish their conclusions*". As far as we are aware, there has been no proper analysis: it is certain that nothing has been published.

The Commission considers that a merger might lead to cost savings due to economies of scale (Paragraph 3.33). The Commission should also consider benefits that arise from the transfer of best practice. Mergers provide the opportunity and the stimulus to introduce new technologies and processes. In some cases, these options may not have been viable previously due to the lack of scale. In other cases, the very change required to integrate two companies can act as a catalyst to make changes that are more fundamental to the business. The guidance should indicate that the Commission would consider evidence provided by the merging parties relating to all possible sources of efficiency not just those relating to economies of scale.

It appears (Paragraph 3.15) that the Commission prefers direct remedies (e.g. structural over behavioural) and the guidance indicates that the Commission might use the rolling incentive mechanism to return benefits to customers. The guidance should indicate whether the Commission intends to treat merger efficiencies in the same way as any other savings (i.e. 70% benefit transfer to customers<sup>3</sup>) or propose a different share. In our view, merger savings should flow through price limits (via the rolling mechanism) and, only if the speed or scale of these savings was not in line with their submissions to the Commission, would Ofwat need to make specific adjustments to the price caps.

As the guidance says in paragraph 3.26, the Commission will consider whether to recommend that action be taken by others, in particular the Director General of Water Services. We believe this is an important consideration: Ofwat could do more to develop forms of comparison that are not reliant on the number of water comparators in England and Wales. This could include cross sector comparisons. In our view, the obvious and most relevant benchmark is the productivity trend of the sector.

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<sup>2</sup> Vivendi Water UK Plc and First Aqua (JVCo) Limited, A report on the proposed merger, November 2002

<sup>3</sup> The method for calculating this is from Incentives and Commitment in RPI-X Regulation, *Brian Williamson, NERA*, 1997



## Appendix A - The value of comparisons in setting price limits

The value is dependent on how the comparisons are used.

We argue that the DGWS's estimate of the value of the loss of a comparator submitted to the Vivendi/First Aqua reference was flawed and that the number of comparators used by Ofwat adds nothing to its ability to estimate the scope for efficiency improvement for the industry. The average efficiency target in price limits is not influenced by comparisons of companies' relative performance.

Two elements make up the industry 'X-factor' – an estimated frontier efficiency shift and the average of the calculated catch-up factors the companies.

Ofwat's most recent published calculation of the value of comparators was set out in the Commission's report on the proposed merger between Vivendi and First Aqua (the owner of Southern Water). In making its estimate, Ofwat appeared to

- select a benchmark company based on a simulation
- calculate the overall price savings
- select a different benchmark
- recalculate the savings
- take the difference between the two calculations as the value of losing a comparator.

In the Vivendi/First Aqua case, the value ranged between £330 million to £1,330 million; with an average of £450 million for companies in the same size range as Southern.<sup>4</sup>

This approach ignores the change in the efficiency frontier. It assumes, implicitly, that the frontier factor remains constant as the comparative or catch-up factor varies i.e. that catch-up is 'additional' to frontier movement. This is not a credible assumption.

Ofwat derives its estimate of frontier efficiency as the difference between its estimate of the scope for total efficiency improvement and the average catch-up efficiency it calculates using its comparative efficiency results. The information and analysis used by Ofwat and its consultants to estimate the overall efficiency improvement are based on numbers that include both catch-up and frontier components. It would be difficult, or impossible, to derive a separate estimate of 'frontier' efficiency.<sup>5</sup>

In our view, the DGWS's calculation of the value of a comparator is flawed because it takes frontier or continuing improvement as given and varies the catch-up number. If a merger had no real impact on actual industry average efficiency, then the correct estimate of the value of a comparator based on different assumptions about catch-up would be precisely zero. Catch-up should not be considered in isolation.

Advice to Ofwat's from Europe Economics (EE) confirms this. EE's report on efficiency in the water industry suggests that the correct procedure for arriving at the efficiency forecast for an individual company is to

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<sup>4</sup> Competition Commission, November 2002. Vivendi Water UK PLC and First Aqua (JVCo) Limited. A report on the proposed merger. Page 209.

<sup>5</sup> From industry sources, we understand that Ofwat is currently saying that its approach is to consider what the best performing companies say they can achieve in coming to a view regarding the frontier. If so, then the frontier shift is clearly not related to the number of comparators.



- average the catch-up factors for the industry
- deduct this from EE's industry wide efficiency improvement number
- add the catch-up factor for the individual company to this estimate.<sup>6</sup>

Under this methodology, a change to the overall catch-up factor would make no difference to the industry average efficiency assumption, the use of comparators would not have any effect on aggregate price limits for the industry and the comparators would have no value of the type claimed by the DGWS.

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<sup>6</sup> Europe Economics. March 2003. Office of Water Services – Scope for efficiency improvements in the water and sewerage industries (final report). Paragraph 7.5.3.



## Appendix B - Incentives to achieve cost savings

We argue that the incentive power of Ofwat's regulatory regime on a specific company arises mainly from the price cap mechanism. As the guidance acknowledges, incentive power for a specific company is less if that company's price cap is not completely exogenous. This reduction will depend on the number of comparators (incentive power is less if there are fewer comparators) but we believe that this effect is weak in comparison to that provided by the operation of the price cap.

Some argue that the level at which the price cap is set does not affect the power of the incentive mechanism: a company will be equally incentivised further to exceed a low target as to catch up to a high one. This might be over simple in that the incentive effects of particularly high and low targets would probably repay examination. One possibility is that challenging targets have disincentive effects associated with the risk of being unable to remain financially viable.

To the extent that comparing companies does lead to greater incentives, these will diminish over time as the less efficient companies, responding to incentives to secure the obvious cost savings, close the gap on the more efficient companies.

Curiously, the incentive effects of the comparative regime (as practised) and its expected impact on productivity growth have never been estimated. The debate about the value of comparative competition would be much better focused on this issue rather than calculations based on the spurious assumption that catch-up is all additional to frontier shift in aggregate.

It is often assumed, based on the seminal article by Andrei Shleifer<sup>7</sup>, that the incentive properties of yardstick competition are strong relative to those under price caps alone.<sup>8</sup> The basic idea is simple enough – if allowed revenues can be made independent (exogenous) to an individual firm's performance, then the profit motive to cut costs will be as strong as it would be in a competitive market (where firms are 'price-takers' with perfect competition). Shleifer's conclusion was that

*“provided the firms are perfectly comparable, incentives will be strong equivalent to 100% of those under competition”.*

It is instructive to note that the incentive properties of yardstick competition do not depend on the use of an efficiency frontier as a basis for calculating revenues, any exogenous benchmark will do.<sup>9</sup> In a competitive market, prices are determined by the costs of the highest cost or marginal firm, and firms that are more efficient make supernormal profits. Yardstick competition as practised does not mimic competition.

One way to think about the incentive properties of yardstick competition is to consider how exogeneity of the yardstick depends on the number of companies in the sample. With a large number of firms, the benchmark is almost completely independent of any individual firm's costs and the incentive power approaches 100%, i.e. companies retain all outperformance relative to the benchmark. An index of incentive power is given by  $n/(n-1)$  so, if there were two firms of equal size incentives would be 50%, with three firms they would be 66%. A move

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<sup>7</sup> “A Theory of Yardstick Competition”, Rand journal of Economics, Autumn 1985

<sup>8</sup> For example, Frontier Economics in the NAO report “Pipes and wires”

<sup>9</sup> This point is also made in Frontier Economics' report for Ofgem: Developing Network Monopoly Price Controls, March 2003. Annex 1, Page 2



from 23 to 22 companies due to a merger would have almost no impact on incentive power, reducing the index by 0.1%. This is negligible relative to the incentives offered by a 5-year rolling price cap of around 30% (assuming a discount rate of 7%).

In the real world, firms are not perfectly comparable and reliance on 'pure' yardstick competition would risk bankrupting efficient firms, if the yardstick was set too aggressively. Shleifer acknowledged this, but did not work through the implications in his paper. There is a trade-off between reliance on yardstick methods and their apparent incentives on the one hand and the practical need to allow monopoly businesses to finance their operations on the other. When this trade-off is taken into account the incentive benefit from yardstick competition will be lower. It could be non-existent if account were taken of the incentive effects of the additional uncertainty introduced by yardstick methods.<sup>10</sup>

At a practical level, the DGWS does not apply pure yardstick competition, rather a hybrid form whereby the initial level of allowed revenues is based on actual costs and the target rate of productivity improvement is based on a mix of catch-up and frontier assumptions. In addition, depending on the DGWS's belief in the need to maintain companies' future financial ratios, allowed revenues may be further divorced from the yardstick and more tightly linked to actual costs over time. Allowed revenues are not therefore exogenous with respect to the company's own costs and the incentive that is due to the price cap is likely to dominate. In these circumstances, we would expect the marginal impact of a reduction in the number of comparators to be even smaller.

Over time, we might expect a reduction in the spread of assessed performance as differences in starting positions (the quality of capital stock for example) are evened out. This would reduce the importance of the relative catch-up element in price caps, thereby bringing allowed revenues more closely into line with actual company specific costs. Comparing the situation at the 2004 price review with that in 1999, there is some evidence that Ofwat thinks this has happened with companies now spread over three rather than five efficiency bands. At the same time, the quality of information about the industry trend in productivity has improved in statistical terms making this a more helpful source.

The question of precisely how real world yardstick methods improve incentives for cost reduction in the hybrid price cap form applied by Ofwat deserves further scrutiny. We have raised several issues all of which point towards the conclusion that, at the present time, the impact of a reduction in the number of independent water companies would have a negligible impact on incentives for cost reduction.

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<sup>10</sup> Williamson and Toft. May 2001. "The appropriate role of yardstick methods in regulation."  
<http://www.safir.teri.res.in/wkshp/7-8aug2001/Yardstick.pdf>



## Appendix C - Weakened service quality incentives

We argue that incentives for service quality improvements should not be based on comparative performance since customers do not necessarily value higher service quality above the cost of achieving the quality increase. The relevant benchmark is the economic level of quality where willingness to pay and cost are equal at the margin.

The trend in regulation has been towards targets based on an assessment of appropriate absolute levels of quality, for example, the economic level of leakage rather than a simple league table approach. Under Ofwat's Overall Performance Assessment (OPA), revenue adjustments are ostensibly based on comparisons across companies. However, in practice many of the factors that make up the overall index have upper bounds beyond which improvements in performance do not deliver a higher score. Over time, therefore, the comparative element will, and arguably should, become less relevant.

As a transitional measure, until absolute standards of performance have been assessed using cost information and customer satisfaction or willingness to pay studies, performance league tables arguably had a part to play in motivating efficiency improvements. In our view, they are becoming less relevant and the impact of the loss of a comparator at the margin would have a very small impact on incentives.

### Non-financial incentives and the peer pressure argument

One of the DGWS's premises is that, the greater the number of comparators, the stronger will be the non-financial incentives on management teams to improve performance. This is a 'peer pressure' argument which suggests that it is worse for a company's managers to come bottom of a list of twenty-five companies than to come bottom of a list of three and better to come top of a long list than top of a short list. Long lists are intrinsically good because they intensify peer pressure.

Even if this is true and incentives increase with more companies, whether this delivers a benefit is at best ambiguous. This will depend on the economic standard of service compared to companies' actual standards. If the actual standard is below the economic level then the incentive to improve will be beneficial. If existing service levels exceed the economic level, stronger incentives will encourage companies to misallocate resources leading to a loss of economic welfare. In a competitive market, this does not occur because customers have a choice about service levels, and can choose whether to pay for better service levels or not.

We would argue that using relative performance to assess service quality is not appropriate, especially where actual service standards already appear to be high. In England and Wales 99.94 per cent of customers have 'adequate' pressure (with 'inadequate' being determined by a standard well above what most customers can detect), and 99.85% of letters are answered within ten days.<sup>11</sup>

Incentives should be based on absolute standards set at the economic level, or, more realistically, approaching this level over time as information is progressively revealed about what this economic level is.<sup>12</sup> This point is implicitly recognised by Ofwat in its use of the Overall Performance Assessment at Periodic Review 2004 (PR04).

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<sup>11</sup> Source: Ofwat 'Levels of Service for the water industry in England and Wales' 2002-03 Report.

<sup>12</sup> See "Incentives for Service Quality: Getting the Framework Right" Williamson, B. The Electricity Journal June 2001.



## Ofwat's Overall Performance Assessment

Ofwat uses the OPA to compare the companies' performance on eight service measures. From these measures, it calculates and publishes a single numeric score for each company. Of the eight measures, in six cases, companies' Ofwat assesses performance against an arbitrarily determined performance standard. Improvements beyond this level will not lead to an improved score. The remaining two are relative measures: Ofwat assesses individual companies against the average performance of all. Having calculated the scores, Ofwat rewards and penalises the top and bottom companies on their relative performance.

We do not know whether the six absolute standards are based on evidence of what economic levels of service provision might be. We are not aware of any reference to customers' expressed views in setting the standards. Ofwat, however, has reduced the range of its incentive adjustments from between +1% and -0.5% at Periodic Review 1999 to between +0.4% and -0.1% at PR04. The range for the water and sewerage companies was between +0.1% and -0.1%, which does not constitute a major financial impact. Ofwat made the change in order to *"to take account of the high level of absolute performance whilst retaining the comparative assessment"*<sup>13</sup>. This supports the notion that the value of comparisons between companies in incentivising improved service levels has diminished as standards have risen.

It is also noteworthy that in the Final Ministerial Guidance in relation to PR04, the government was less than enthusiastic about non-mandatory improvements due to its concerns about low-income households. It recommended that non-mandatory improvement should be supported by strong cost-benefit analysis.

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<sup>13</sup> Ofwat; Future Water and Sewerage Charges 2005-2010, Draft Determinations, Page 138.