

Strategic Review of Charges 2010–14: Methodology
**Volume 3: Approach to assessing operating
cost efficiency**

CONSULTATION

Overview

This document explains our proposed approach to assessing the level of operating costs to allow for at the 2010-14 price review, and seeks stakeholders' views.

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How to respond to this consultation

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Please submit your response no later than **Friday 19 October 2007**.

We will publish all responses to this consultation unless respondents request otherwise.

Printed copies of this consultation are available from the address above.

Electronic versions are available on our website at www.watercommission.co.uk.

Background

Context

Every four years, we set limits on the prices that Scottish Water can charge customers for water and sewerage services. The next price review covers the period 1 April 2010 to 31 March 2014.

We issued a consultation document in December 2006, which set out our overall approach to the forthcoming review. We explained that we intended to carry out a further major consultation during 2007, which would cover the methodology we should use in coming to our decisions about price limits.

The December 2006 document explained that the methodology consultation would need to consider a number of components, and that these would be grouped into four volumes, as follows.

Methodology volume	Date volume is published
Volume 1: Financing & governance of Scottish Water	10 May 2007
Volume 2: Customer revenue, levels of service & the new competition framework	31 May 2007
Volume 3: Operating costs	28 June 2007
Volume 4: Capital expenditure	26 July 2007

This document is the third of the four methodology consultation documents.

Associated documents

- 'Our approach to the 2010-14 price review: A consultation', Water Industry Commission for Scotland, December 2006.
- 'The Strategic Review of Charges 2006-10: The final determination', Water Industry Commission for Scotland, November 2005.

More detailed information about our proposed methodology in relation to assessing operating cost efficiency is available on our website: www.watercommission.co.uk

Introduction

In this volume, we outline our current thinking on how we should assess the level of operating costs to allow for when setting Scottish Water's wholesale prices. We would like to hear stakeholders' views on the following questions:

INTRODUCTION

1. Do respondents agree that our approach to benchmarking Scottish Water's performance remains robust despite the separation of non-household retail activities in Scotland?
2. Do respondents agree that we should take account of differences in the level of service and scope of activities in Scotland and in England and Wales?
3. Do respondents agree with our favoured approach to setting an appropriate efficiency challenge for Scottish Water?
4. Do respondents agree that our approach to assessing claims for special factors is reasonable?

We propose to require Scottish Water to build on recent improvements in the level of service it provides to customers during the 2010-14 regulatory control period. However, the change in structure of the Scottish water industry will require us to make some changes in our approach to setting the allowed for level of operating costs.

Under the Water Services etc. (Scotland) Act 2005, new entrants can be licensed to provide retail water and sewerage services to non-household customers in Scotland. As required by the Act, Scottish Water has now established a separate retail entity to provide services to non-household customers. Accordingly, this will be the first determination of charges where we will set both wholesale and retail price limits. We will set wholesale price limits for services to non-household customers and retail price limits for services to household customers.

We will not set retail price limits for non-household customers at this review. However, our analysis will allow us to assess the appropriate level of 'default' retail charges that all licensed providers will be required to make available (except those with specialist or self-supply licences).

Approach at the Strategic Review of Charges 2006-10

At the 2006-10 review, we allowed for an 8% increase in total real operating costs in the regulatory control period. We also required Scottish Water to improve its level of customer service by 40%, as measured by the overall performance assessment (OPA). The OPA is an index of the measures of service that are most important to customers.

We had originally intended to set an operating cost efficiency target that took account of the actual efficiency gap that existed between Scottish Water and the leading companies south of the border. However, Scottish Water did not provide the information about costs that we needed to do this, so we could not take account of the poorer level of service provided in Scotland in our assessment of Scottish Water's efficiency. We therefore set a target for the improvement in the level of service to customers that Scottish Water should achieve over 2010-14.

Table 1 summarises how we assessed the appropriate allowance for total operating costs in the 2006-10 review.

Table 1: How we calculated the allowed for level of operating costs

Total allowed for operating expenditure
=
Baseline operating expenditure
+/-
Assessed changes in baseline operating expenditure
-
Efficiencies in baseline operating expenditure
+
New operating expenditure
-
Efficiencies in new operating expenditure
+
Public Private Partnership (PPP) operating expenditure
+
The impact of inflation on all of these components

Establishing a baseline

The baseline level of operating expenditure is the expenditure incurred in the base year. There is one base year for each regulatory control period. At the last review we used 2004-05 as the baseline year. We took reported core costs and adjusted for atypical costs or savings and exceptional costs. We also ensured that cost allocations were consistent with those reported by the companies in England and Wales.

We made a number of adjustments to the baseline operating costs. These adjustments reflected potential changes in costs during the regulatory control period, and included allowances for higher pension and energy costs and higher non-household rates.

New operating expenditure

We recognised that, during the regulatory control period, Scottish Water would incur new operating expenditure to deliver the required improvements in public health and environmental compliance.

Establishing the efficiency gap

We used three methods to assess the extent of the reduction that Scottish Water should achieve in its baseline operating costs. We made comparisons based on:

- the econometric models developed by Ofwat;
- a modified version of the Ofwat models (reworked to include information from Scottish Water); and
- an alternative model developed by this office.

We made a number of adjustments to the efficiency gaps that were generated by our models. These adjustments took account of special factors and differences in the scope of activities provided by Scottish Water and by the benchmark companies.

Assessing the scope for reduction in baseline operating costs

We required Scottish Water to narrow 50% of the assessed gap (after allowing for special factors and differences in the scope of activities) in operating cost efficiency during the four-year regulatory control period. We also required Scottish Water to match the overall scope for the industry to improve its efficiency that Ofwat had identified.

Issues for the Strategic Review of Charges 2010-14

There are three principal areas where we propose to take a different approach at the next price review. These are:

- adjusting our approach to take account of the introduction of competition;
- ensuring that our approach takes account of the true efficiency gap between Scottish Water and the companies south of the border (ie the level of costs incurred and level of service provided to customers); and
- the way in which we define the scope for improvement and the targeted level of performance.

The first of these is required by the introduction of the licensing framework that was established by the Water Services etc. (Scotland) Act 2005. The second two areas reflect our experience of setting targets at the Strategic Review of Charges 2006-10.

The introduction of competition

Ensuring like-for-like comparisons

We need to modify the way we assess Scottish Water's operating cost efficiency because of the structural changes that have taken place in the industry since the last review. In the previous two full price reviews (2002-06 and 2006-10), we made comparisons between Scottish Water and the companies in England and Wales. At that time, all of these companies performed broadly the same functions: water and waste water treatment; network management and operation; and customer service.

Since the framework for competition has been introduced, Scottish Water is no longer responsible for the retail services provided to non-household customers. We will therefore have to take account of this difference when we assess operating cost efficiency.

Alternative approaches

We are considering two alternative approaches to assessing Scottish Water's efficiency:

- We could compare Scottish Water's current costs with the costs of the companies south of the border, adjusted to take account of the retail activities for non-household customers that have been transferred to Scottish Water Business Stream.
- Alternatively, we could add back the operating costs incurred by Scottish Water Business Stream to Scottish Water's total operating costs, then compare this total with that for the companies south of the border.

Neither of these approaches is likely to be straightforward. In particular, the first approach may be difficult because Ofwat does not currently collect the same detailed information about the retail costs of supply. This approach is therefore unlikely to be successful.

We are more confident that the second approach could be used successfully. Scottish Water Business Stream's operating costs in 2007-08 will reflect total Scotland-wide retail operating costs. No new entrants will have entered the market during 2007-08, so it should be easier to make the adjustments necessary to allow robust comparisons of performance with the companies south of the border. We would, of course, need to ensure that we do not include any costs that are specific to the more competitive market in our analysis.

Once we have made our assessment of the scope for operating cost efficiency, we would be able to verify our conclusions using various methods, including:

- considering the total allowed for level of operating costs against the long-term historical trend in Scotland and in England and Wales;
- examining the profile of improvement in operating costs against the profiles that have been observed in other utility markets that have been opened up to competition;
- using alternative analytical techniques – such as panel data or data envelopment analysis.

Our current view is that the last method – introducing new analytical techniques – could be problematic, given the new organisational structure of the Scottish water industry. It may prove difficult to determine whether differences in the assessment of the scope for efficiency using this approach are due to the change in technique or to the change in the organisational structure of the industry. Uncertainty of this nature would not be in the interests of customers. We are therefore minded not to pursue this approach at this time, although we will consider it further over the next few months and would welcome stakeholders' views on this issue.

We are minded to attribute the full scope for improving efficiency identified in our benchmarking approach to Scottish Water. There are two reasons for this.

- We consider that the separation of retail activities is likely to improve Scottish Water's overall efficiency (for example, by identifying some activities that it no longer needs to do).
- We also consider that Scottish Water will be put under pressure to reduce its costs by new entrants to the retail services competitive market.

Moreover, we would not want to set efficiency targets for a competitive market. It is not for a regulator to second guess the prices and services offered in an efficient market.

Taking account of levels of service

Scottish Water should meet its efficiency targets by improving the way the business is operated, not by reducing the level of service it provides to customers.

We have considered our approach in the last price review carefully, and continue to think that it is not ideal for us to set separate targets for improvements in operating cost efficiency and in the level of customer service. Although there is some benefit from setting a clear target for improvement in customer service, there are likely to be complications in the medium to long term.

It is important that customers are not required to pay twice for the same output, and Ministers have confirmed that they will meet the costs of any shortfall in performance. If Scottish Water does not meet its target for improving operating cost efficiency, but makes greater improvements than required in its level of customer service, it could be difficult for us to assess whether or not Scottish Water has met the terms of the regulatory contract. It would also be important for us to make a robust assessment of the financial cost of any shortfall in efficiency, or customers could end up paying more than necessary.

Proposed approach to levels of service

We propose to benchmark Scottish Water's performance against the overall performance of the companies in England and Wales. A robust efficiency comparison requires us to make objective assessments of both the level of service provided and the level of cost incurred. We therefore propose to ask Scottish Water to set out the annual operating costs (and, if necessary, capital expenditure) that it would need to achieve the level of service provided to customers by the leading companies south of the border.

We are also considering whether it would be appropriate to allow Scottish Water to opt to deliver additional improvements in the level of service provided to customers. This could be in the form of additional annual operating costs incurred for a defined improvement in its OPA score. Similarly, we could agree to set a less challenging target for improving customer service if the total allowed for level of operating costs were lower.

We propose to examine different ways to allow Scottish Water to determine the maximum improvement in the level of service it considers it can deliver during the 2010-14 regulatory control period.

We recognise that Ofwat may wish to revise its OPA methodology at some point in the future. Some of the leading companies south of the border are seeking changes in the OPA because they feel that it does not differentiate sufficiently between the best and middle ranking companies. However, we are minded not to change the OPA framework that we introduced in the last price review. There are two main reasons for this.

- We are encouraged by the support that there appears to be for the OPA approach from staff at all levels in Scottish Water. It could be demotivating if we changed our approach significantly after only one regulatory control period.
- We believe that we can establish an appropriately challenging target for Scottish Water by requiring it to match by 2013-14 the OPA score that was achieved by the leading companies in England and Wales in 2007-08. Because Scottish Water's OPA score is still some way behind the best companies south of the border, there is no immediate need to change our approach.

Allowing for the appropriate level of operating costs

There are two broad approaches that we could adopt to assessing an appropriate allowance for Scottish Water's total operating costs.

We could require Scottish Water to match the performance of the leading company (or the top three companies or the top quartile company) in England and Wales in 2007-08 by the end of the 2010-14 regulatory control period. 2007-08 would be the last year for which complete information about the performance of the companies south of the border will be available when we set price limits. This approach has one distinct advantage in that we would be challenging Scottish Water to match a level of performance (in terms of both cost and level of service) that has already been delivered by at least one company south of the border. There can therefore be no question that the targeted level of costs and service is achievable.

As part of this approach, we would set intermediate targets for operating costs and milestones for improvement in customer service that we consider to be reasonable. These targets and milestones would be a useful indication as to whether Scottish Water is on target to deliver the regulatory contract. Overall performance against the regulatory contract could only be finally assessed at the end of the price review period.

The second possible approach would be for us to continue to set future performance targets based on an estimate of where the leading companies will be by the end of the regulatory control period.

Using this approach, we would need to distinguish between the efficiency gap that exists today and the gap that could exist in the future. The efficiency of the leading companies in England and Wales continues to improve. This is as a result of regulatory and shareholder scrutiny, and the underlying improvement in productivity in the national economy.

If we were to adopt this approach, we would need to take account of the way in which the performance of the companies south of the border is likely to change over the next regulatory control period. Otherwise customers in Scotland may end up paying more than is strictly necessary.

Establishing the scope for operating cost efficiency

We are currently minded to use the same three modelling techniques that we used in the last price review to establish the current operating cost efficiency gap and the required improvement. As already explained, we may be able to use new techniques, but our current view is that they are likely to be problematic. Our comparisons would therefore be based once again on:

- the econometric models developed by Ofwat;
- a modified version of the Ofwat models (reworked to include information from Scottish Water); and
- an alternative model developed by this office.

We would again make a number of adjustments to the efficiency gaps assessed by the different models. These adjustments would take account of special factors and differences in the scope of activities provided by Scottish Water and by the benchmark companies.

We would pay particular attention to one-off items of expenditure, which can affect the reported operating expenditure. We would use Scottish Water's June Return to analyse underlying operating costs by both function and activity.

Our aim is to be as accurate and as fair as possible in our analysis of Scottish Water's operating expenditure. We would propose to review any factors that could justify an increase in operating costs. These might include:

- better standards of customer service;
- growth in the customer base;
- growth in customer demand; and
- more sophisticated and effective processes for treating drinking water or sewage effluent.

We would seek to 'normalise' costs across Scottish Water and its comparators, so that the variations that remain are likely to be associated with differences in efficiency. Comparisons of normalised operating expenditure allow us to make a fair assessment of Scottish Water's relative efficiency.

Establishing the base year

Performance in the base year is the starting point against which future performance is measured. We propose to use 2007-08 as the base year for this price review. This reflects the information that is likely to be available about the level of costs incurred within the non-household retail activities and about the level of service delivered by the leading companies south of the border.

Adjustments to baseline costs and new operating costs

Scottish Water may produce evidence in its business plans of changes, up or down, in future baseline costs. These could arise, for example, from changes in energy prices or local authority rates.

In addition, Scottish Water will incur 'new' operating costs in delivering:

- improved environmental standards,
- improved drinking water standards,
- higher levels of service to customers, and
- more effective management of the supply/demand balance for water resources.

Each of these factors could lead to increases in operating expenditure. However, we are interested in *net* new operating expenditure. The net new operating costs are the additional incremental costs incurred when an enhanced level of service is delivered.

New operating expenditure will, over time, represent a significant part of total operating expenditure. Annual new (extra) operating expenditure represents approximately 1% of total operating expenditure in the water and sewerage companies in England and Wales. This includes new operating expenditure to provide improved levels of service to customers.

We plan to scrutinise carefully the claims for additional baseline and new operating expenditure put forward by Scottish Water. Customers should not be expected to pay for unnecessary or inefficient levels of new operating expenditure. In assessing the merit of any claim, we propose to have particular regard to the level of performance delivered by the leading companies south of the border in 2007-08.

Top-down approach to benchmarking

Benchmarking describes objective comparisons of performance across (or within) organisations. It involves comparing the performance of an organisation with that of the leaders in a particular field of activity.

We propose to use the same benchmarking techniques to assess Scottish Water's relative efficiency as we used at the last review. These techniques involve making high-level comparisons of Scottish Water's performance with that of the companies in England and Wales.

We propose to examine Scottish Water's efficiency relative to that of the leading water and sewerage companies in England and Wales in 2007-08. This comparison will take account of differences in the scope of activities undertaken and the level of service provided to customers. We propose that Scottish Water should be challenged to deliver an equivalent level of service for an equivalent level of cost (as measured by our benchmarking techniques and after allowing for special factors) by the end of the 2010-14 regulatory control period.

We would assume that the level of costs incurred and the level of service delivered improve steadily throughout the regulatory control period. We propose to consider the performance improvement of the companies south of the border in order to establish an appropriate profile.

Ofwat's approach to benchmarking

Ofwat uses a top-down approach to benchmark the English and Welsh companies and to set efficiency targets. It employs econometric modelling and regression analysis to establish a relationship between the costs incurred by the companies and a number of cost drivers. These cost drivers take account of both engineering and economics.

The models will have been used for more than a decade by the time of the next price review. Some commentators and companies have begun to question the reliability of the models now that differences in the performance of the best companies have reduced significantly. We are currently of the view that there is still enough of a gap between the performance (in terms of costs and levels of service) of Scottish Water and of the leading companies south of the border that the models – at least in Scotland – are still very useful.

The econometric models

There are nine models for operating expenditure:

- water resources and treatment,
- water distribution,
- water power,
- water business activities,
- sewer network,
- large sewage treatment works,
- small sewage treatment works,
- sludge treatment and disposal,
- sewerage business activities.

The purpose of each model is to establish a relationship between the costs reported by the companies and external cost drivers. These cost drivers have a significant impact on costs but are outside the control of the management of the company. By isolating the principal external cost drivers in the models, we can determine relative efficiency with a high degree of accuracy.

The cost drivers that are included within the econometric models are known as explanatory factors. The models themselves take different forms. These are summarised in Table 2.

Table 2: Summary of econometric models and explanatory factors

Model	Model type	Explanatory factors
Water resources and treatment	Linear model for unit cost	Population, number of sources, distribution input, proportion of supplies from rivers ¹ .
Water distribution	Log unit cost	Population, proportion of total mains length with diameter > 300mm.
Water power	Log linear	Distribution input, average pumping head.
Water business activities	Log linear	Number of billed properties.
Sewer network	Log linear	Sewer length, area, resident population, holiday population.
Large sewage treatment works	Log linear	Total load, use of activated sludge treatment, tight effluent consent for both suspended solids and BOD ₅ .
Small sewage treatment works	Unit cost	Works size, works type, load.
Sludge treatment and disposal	Unit cost	Weights of dry solids, disposal route.
Sewerage business activities	Unit cost	Number of billed properties.

As in the 2006-10 review, we propose to consider what impact modifying the Ofwat models to take account of Scottish Water's costs and assets has on our models.

Our alternative method to assessing the scope for operating cost efficiency

We also propose to use our alternative model, developed in 2001, to confirm our assessment of Scottish Water's efficiency using the standard and adjusted Ofwat econometric models. Our approach is in line with recommendations by the Competition Commission².

In developing our alternative model we took particular care to use a different approach to that used by Ofwat's econometric models. In our view, for an alternative method to have value, it has to provide an independent check. Our alternative model is therefore based on the premise that asset use, volumes and/or customers are the main drivers of most running costs. The model calculates the impact of each of these drivers separately on each of a number of activities. By contrast, there is no separation of the impact of each cost driver in the Ofwat models. The Ofwat models examine the interrelationships between drivers, and focus on the drivers that explain the differences in the observed costs of the companies most effectively.

¹ Ofwat recently replaced this with the proportion of supplies from boreholes.

² 'Mid Kent Water Plc: A report on the references under sections 12 and 14 of the Water Industry Act 1991', <http://www.competition-commission.org.uk>, 2000.

Adjusting for special factors in Scotland

We propose to adjust the results of our efficiency analysis to take account of any special factors that have a unique impact on the level of costs that Scottish Water incurs. We would only propose to take account of special factors that are outside the control of management. Such factors may increase or decrease cost.

For an adjustment to be valid, Scottish Water will have to provide evidence in the following areas:

- What are the special circumstances that produce a material difference from industry norms? Scottish Water will need to set out whether the factors are the result of particular legal, environmental or quality obligations upon it, the character of all or part of its customer base, or the result of historical development of the water and sewerage systems in its area of supply.
- What is the overall net impact of the special factors on Scottish Water's costs?
- What has Scottish Water done to manage the additional costs arising from the special factors and to limit their impact?
- Are there other special factors that reduce costs relative to industry norms? If so, have these been quantified and offset against the upward cost pressures?

Adjusting for differences in the scope of activities in Scotland

We propose to follow broadly the same approach that we used at the 2006-10 review in adjusting the results of our modelling to take account of differences in the scope of activities undertaken by Scottish Water and the leading companies in England and Wales.

The scope of company activities south of the border is broadly comparable. In general, Ofwat does not therefore have to adjust the result of its models to reflect any differences in the scope of activities. However, in Scotland there are considerable differences in the scope of activities. These differences are material to customers as they influence the price they should pay. These differences can both add to and reduce the costs that Scottish Water incurs.

Conclusion

The Water Services etc. (Scotland) Act 2005 changed the structure of the water industry in Scotland. Scottish Water will now supply only wholesale services to non-household customers. Accordingly, in assessing Scottish Water's operating cost efficiency we will need to adjust our approach to take account of this separation of retail activities for non-household customers.

In terms of our overall approach, although some adjustments will be required it should be possible to use the same benchmarking techniques to establish the scope for improved efficiency that we used at the 2006-10 review. Indeed, our initial view is that it may not be desirable to introduce new analytical techniques at the same time that we adjust our approach to take account of the separation of activities. This could complicate our assessment of the scope for efficiency, as it may be difficult to confirm whether differences are due to the change in modelling techniques or to the change in Scottish Water's organisational structure.

We place considerable value on improvements in the level of service provided to customers. We propose to take steps to ensure that Scottish Water is required to seek both improvements in the level of service it provides and opportunities to reduce its baseline operating costs. We propose to require Scottish Water to match the overall performance (levels of cost and service) of the leading companies south of the border in 2007-08 by the end of the 2010-14 regulatory control period.

Next steps

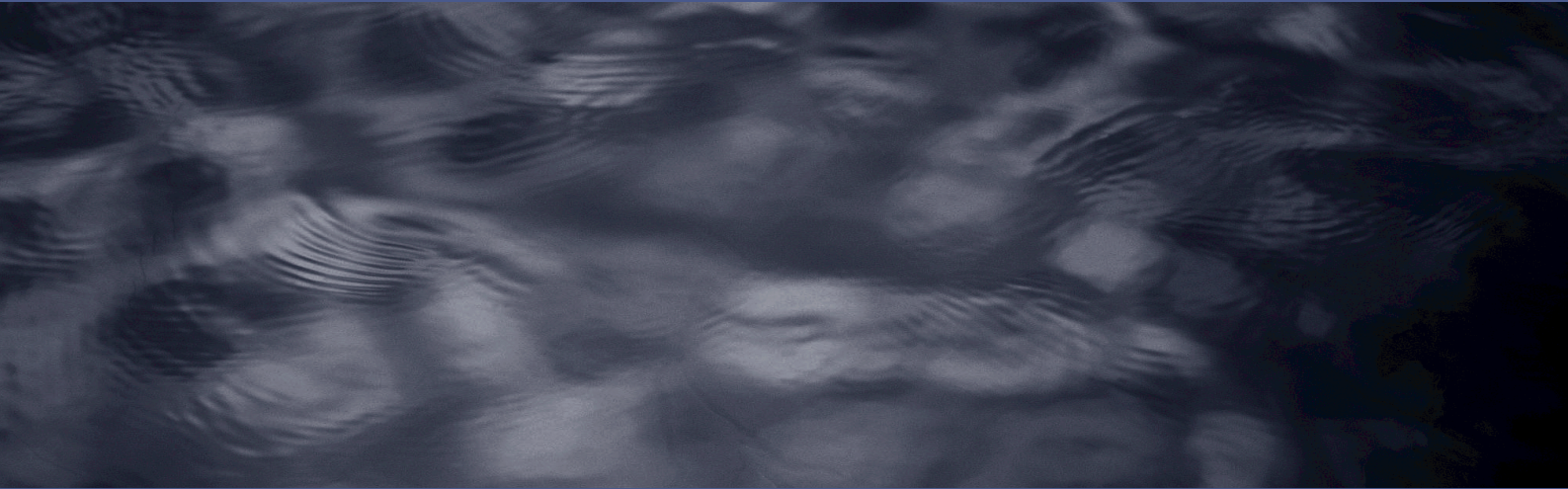
The final date for responses to this consultation is **Friday 19 October 2007**. We encourage all interested parties to get in touch with us to express their views about our proposed approach.

We will publish a response to the consultation findings on **Thursday 20 December 2007**. Please use this opportunity to take part in the debate.

Questions for consultation

1. Do respondents agree that our approach to benchmarking Scottish Water's performance remains robust despite the separation of non-household retail activities in Scotland?
2. Do respondents agree that we should take account of differences in the level of service and scope of activities in Scotland and in England and Wales?
3. Do respondents agree with our favoured approach to setting an appropriate efficiency challenge for Scottish Water?
4. Do respondents agree that our approach to assessing claims for special factors is reasonable?

28.06.07



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