



## **The PPP Arbiter**

### **Analytical Approach to Periodic Review**

**2 March 2009**

## **Role and approach of the PPP Arbiter**

The role of PPP Arbiter was created by the Greater London Authority Act 1999 (the GLA Act) to give guidance or directions on matters relating to the London Underground PPP Agreements. Although appointed by the Secretary of State for Transport, the Arbiter is independent of Government and of the Parties to the PPP Agreements.

In giving guidance or directions, the Arbiter is under a statutory duty to act in the way he considers best calculated to achieve four objectives:

- to ensure that London Underground has the opportunity to revise its requirements under the PPP Agreements if the proper price exceeds the resources available;
- to promote efficiency and economy in the provision, construction, renewal, or improvement and maintenance of the railway infrastructure;
- to ensure that if a rate of return is incorporated in a PPP Agreement, and taking into account matters specified in the Agreement, a company which is efficient and economic in its performance of the requirements in that PPP Agreement would earn that return; and
- to enable the Infracos to plan the future performance of the PPP Agreements with reasonable certainty.

The Arbiter is also under a duty to take account of any factors which are notified to him by both Parties to an Agreement, or are specified in the relevant PPP Agreement, as ones to which he must have regard.

Following consultation, the Arbiter has adopted the following aim for his work, and that of his Office:

*The aim of the PPP Arbiter and his Office is to give sound and timely guidance and directions on relevant aspects of the PPP Agreements when this is requested, and to work constructively with the Parties to the PPP Agreements in support of their key objective of providing to the public a modern and reliable metro service in a safe, efficient and economic manner.*

*We seek to achieve this by:*

- *working within a clear, transparent and consistent framework;*
- *giving reasoned guidance and directions which are based on well developed analysis shared with the Parties and procedures which achieve predictability in process and outcome;*
- *establishing effective dialogue with the PPP Parties and other stakeholders to facilitate timely response to requests for guidance or direction, while maintaining our independence; and*
- *operating to high standards of accountability in all our actions.*

Further information on the functions, duties and approach of the Arbiter can be found on the Arbiter's website <http://www.ppparbiter.org.uk>.

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# 1 Introduction

- 1.1 The purpose of the Arbiter's Analytical Approach to Periodic Review is to identify the approach which the Arbiter proposes to adopt in responding to a matter which is referred to him for guidance or direction in respect of Periodic Review.
- 1.2 This document is based on the contractual provisions in respect of Periodic Review in Tube Lines' PPP Agreement, as it is the Arbiter's expectation that both Metronet Infracos will have other arrangements for Periodic Review. However the principles set out could apply equally to any Infraco.
- 1.3 This document should be read alongside the Arbiter's Procedural Approach to Periodic Review which is published separately<sup>1</sup> and which describes the procedures which the Arbiter expects to follow in the circumstances of a request for guidance or direction in respect of Periodic Review.
- 1.4 The first version of this document was published on 2 June 2008. In that version, it was stated that the Analytical Approach would be reviewed following completion of the Initial Ranges reference<sup>2</sup>.
- 1.5 The purpose of this document is to give London Underground and Tube Lines clear expectations regarding the approach which the Arbiter expects to adopt in responding to a request for guidance or direction related to the Periodic Review of Tube Lines' PPP Agreement. The Arbiter considers that it is important that in responding to a reference, the approach which he adopts is not unexpected by either party.
- 1.6 The Analytical Approach is focused on the approach which the Arbiter would adopt in responding to a cost related reference<sup>3</sup>.
- 1.7 This document is based on the assumption that the Arbiter is asked to give directions on overall costs. However, he recognises that references may be more limited in scope given that Paragraph 6.6 of Part 2 of Schedule 1.9 of the Agreement states that the parties may advise the Arbiter that "they do not request or require him to consider any aspect of the matter being referred on which they state they have reached agreement".

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<sup>1</sup> Procedural Approach to Periodic Review, 2 March 2009, at:  
<http://www.pparbiter.org.uk/output/page25.asp?DocTypeID=10>

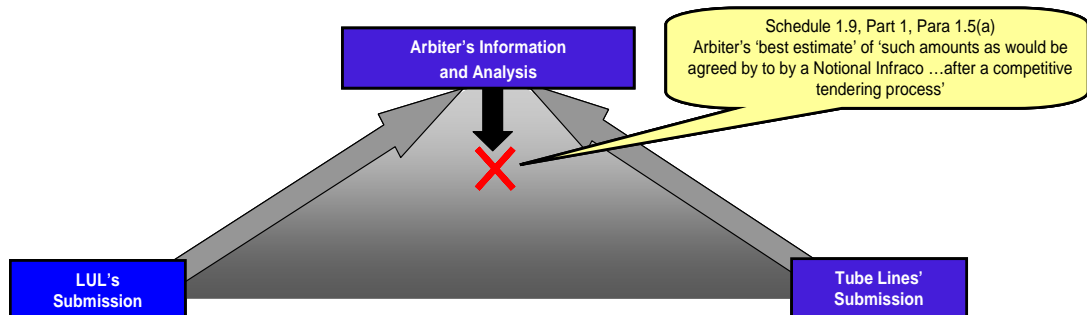
<sup>2</sup> Reference for guidance from London Underground Ltd: (i) Initial range of costs for the second Review Period; (ii) The Arbiter's assumptions as to the level of performance of a Notional Infraco during the second Review Period; (iii) The treatment of performance revenues of a Notional Infraco given the contract drafting in paragraph 7.3 of Schedule 1.9 of the PPP Contract, 9 Sept 2008, at  
[http://www.pparbiter.org.uk/files/uploads/n\\_guidance/200898151549\\_Initial\\_RangesGuidance.PDF](http://www.pparbiter.org.uk/files/uploads/n_guidance/200898151549_Initial_RangesGuidance.PDF).

<sup>3</sup> As defined in section 2 of the Procedural Approach to Periodic Review.

## 2 Conceptual approach to responding to a cost reference

- 2.1 In responding to a reference in respect of Periodic Review, the Arbiter will draw upon his own information and analysis in addition to the information contained within London Underground's and Tube Lines' submissions<sup>4</sup>.
- 2.2 Diagram 1 below shows the components of information which the Arbiter proposes to draw upon in responding to a reference and how, for a cost reference, he will use these components of information to reach a view on his 'best estimate' of the 'aggregate of all the amounts of a Notional Infraco....when entering into a contract after a competitive tendering process' as per Paragraph 1.5(a) of Part 1 of Schedule 1.9 of the PPP Agreement.

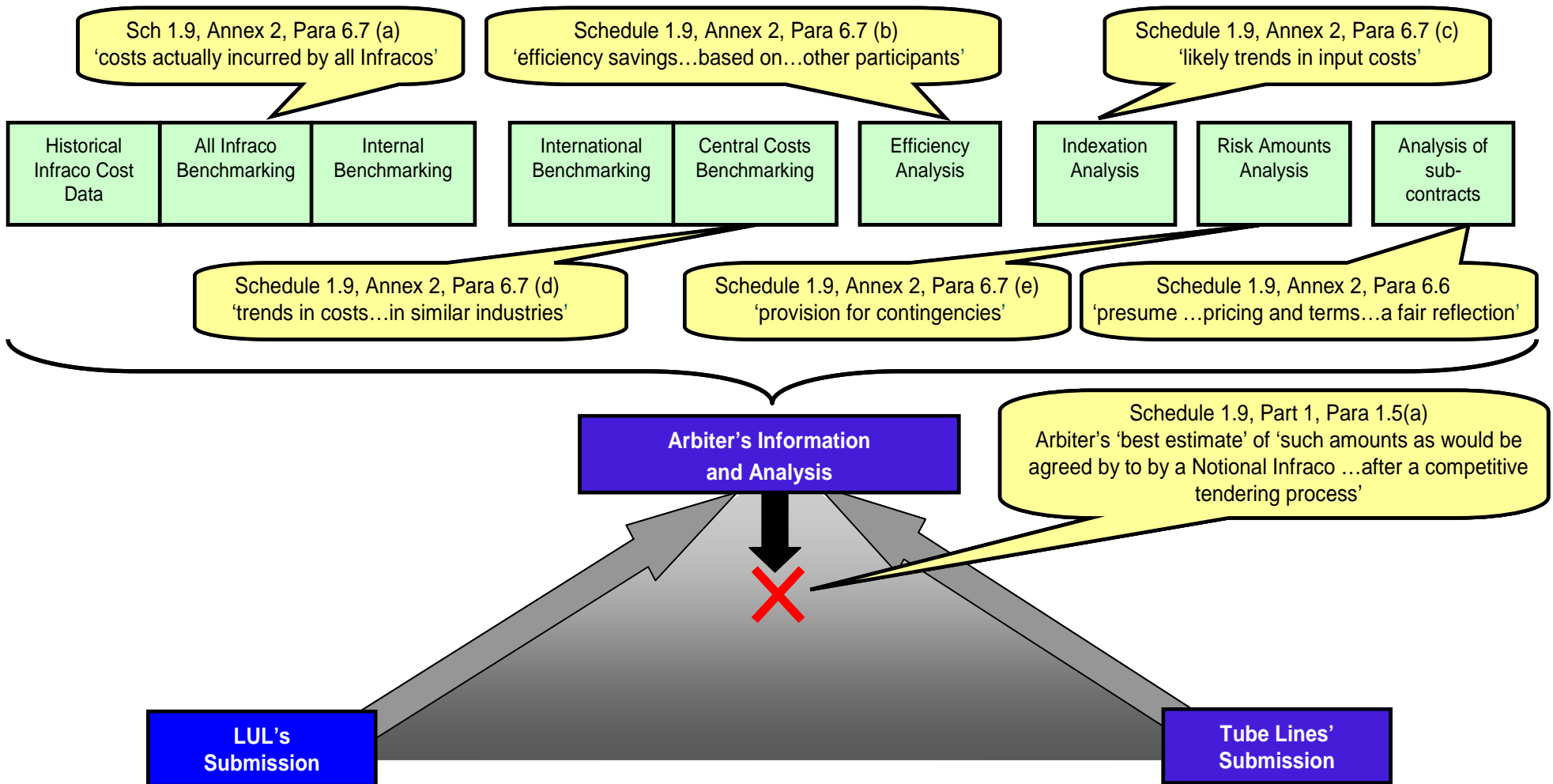
**Diagram 1: Sources and uses of information for a cost reference**



- 2.3 Diagram 2 below provides more details of the Arbiter's own information and analysis which he expects to draw upon in a cost reference. The diagram indicates how the components of this information relates to the guidance to the Arbiter in Annex 2 to Schedule 1.9 of the PPP Agreement concerning factors to which the Arbiter should have regard "in estimating the level of costs that would be incurred....by a Notional Infraco".
- 2.4 Diagram 2 does not comprise an exhaustive list of the information and analysis on which the Arbiter may draw. However, it reflects his current view of the information and analysis he is likely to use in reaching his decision on any reference for direction or guidance in the Periodic Review of Tube Lines' PPP Agreement.
- 2.5 Paragraph 6.2 of Part 2 of Schedule 1.9 states that London Underground and Infraco attach great weight to the Arbiter following transparent procedures and "taking expert advice on matters where he would be better informed by expert opinion". Therefore, it is his intention to procure such expert advice in undertaking the analysis identified in Diagram 2 below as is necessary.

<sup>4</sup> The form of these submissions is described in more detail in the Arbiter's Procedural Approach to Periodic Review.

**Diagram 2: Sources and uses of information for a cost reference**



### 3 Practical approach to responding to a cost reference

- 3.1 To establish his best estimate of Notional Infracost costs, the Arbiter proposes initially to consider total cost in its component parts. These component parts reflect a level of disaggregation which he considers is broadly consistent with that at which a bidder would present its costs in a competitive tender and are as follows:
- asset specific costs and activity volumes;
  - central cost amounts (including engineering access);
  - performance revenues;
  - differential inflation and indexation amounts;
  - contingency and risk amounts; and
  - efficiency amounts.
- 3.2 As described in the Procedural Approach to Periodic Review, this level of disaggregation of costs is consistent with the level of disaggregation specified in the Data Breakdown Structure (DBS) which is the basis for the submissions to be made to the Arbiter in the context of a Periodic Review.

#### **Asset specific costs and activity volumes**

- 3.3 In reaching a view on asset specific costs and activity volumes, the Arbiter expects to be informed by work carried out on his behalf by his technical advisers. He will share this advice with the Parties in a manner consistent with that described in the Arbiter's Procedural Framework<sup>5</sup>.
- 3.4 The approach which the Arbiter's technical advisers will adopt to analysing asset specific costs and activity volumes, including the extent to which they are required to apply expert judgement, is likely to depend on a number of factors including the nature and quality of the information in submissions from the Parties<sup>6</sup> and the extent of disagreement between them on volumes of activity and unit costs. Less analysis will be undertaken in respect of specific asset areas for which there is a high level of agreement between the parties.
- 3.5 However, in broad terms, the approach which the Arbiter's technical advisers will adopt will build upon the approach which the Arbiter developed in the context of Metronet's Extraordinary Review<sup>7</sup> and the

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<sup>5</sup> Arbiter's Procedural Framework for use in the Giving of Directions and Guidance under the greater London Authority Act 1999 and PPP Agreements, 4 June 2007, at [http://www.ppparbiter.org.uk/files/uploads/g\\_proceduralFrameWork/2007651842\\_Procedural%20Framework,%20June%202007.PDF](http://www.ppparbiter.org.uk/files/uploads/g_proceduralFrameWork/2007651842_Procedural%20Framework,%20June%202007.PDF).

<sup>6</sup> The arrangement for the sharing of the content of London Underground's submission with Tube Lines is detailed in the Procedural Approach document.

<sup>7</sup> See, for example, paragraphs 4.3 and 4.4 of 'Metronet request for guidance on the treatment of investment at an Extraordinary Review: issues paper', 20 December 2006: [http://www.ppparbiter.org.uk/files/uploads/j\\_pressNotices/20061220145022\\_Announcement%2010%2006.pdf](http://www.ppparbiter.org.uk/files/uploads/j_pressNotices/20061220145022_Announcement%2010%2006.pdf).

approach which was adopted in the more recent Initial Ranges work, taking into account the improved availability and understanding of cost drivers and benchmarks. Following this approach, the analysis would start by considering costs at a reasonably aggregate level before moving on to the more detailed consideration of some specific activities or projects in order to validate and calibrate the more aggregate data where this was required to develop a proper view of Notional Infraco costs.

- 3.6 The application of this approach to assessing costs is likely to require the Arbiter's technical advisers to draw on benchmarking information as one source of information as indicated in Diagram 2. Potential sources of benchmarking information include internal benchmarks (such as those output from the joint benchmarking exercise involving all three Infracos), external benchmarks (such those output from the Arbiter's recently concluded international benchmarking study<sup>8</sup>), other international metro benchmarking studies, which may include those undertaken by the CoMET group of international metros, Tube Lines' internal benchmarks and historical trend data, and benchmarks from other industry sectors. Other sources of benchmarking information may include details of specific sub-contracts competed by Tube Lines prior to the Review date.
- 3.7 The Arbiter notes that the usefulness of any benchmarking information varies according to factors such as the quality of the underlying data, the normalisation applied to the data, the number of data points available, the proportion of total spend covered and, for external benchmarks, the relevance of the comparator. Consequentially, the use of benchmarking data in the analysis of costs will give full recognition to the potential limitations of the data. The rationale for the application of specific benchmarking data will be documented in adviser's reports.
- 3.8 In addition to the use of benchmarking data, and their own professional expertise, the Arbiter expects his technical advisers to draw on evidence in London Underground's and Tube Lines' submissions. The Arbiter expects these submissions to explain clearly how the cost projections which they contain have been derived, including the source of all assumptions used and the rationale for their use.
- 3.9 The Arbiter will in particular wish to understand the whole life asset management strategy underpinning the projections. He would expect the submissions to explain the asset management systems which have been used and the whole life asset costing models which have been adopted in formulating the projections, including the trade-off between operating and capital expenditure.
- 3.10 The Arbiter is mindful that in considering costs, paragraph 6.6 of Annex 2 to Schedule 1.9 of the PPP Agreement guides him to presume that where there has been a competitive tender, the resulting pricing and terms are a fair reflection of the market for such a contract. Where work

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<sup>8</sup> See 'International benchmarking of the costs and performance of maintaining and renewing metro systems: final report' BSL, January 2009 at [http://www.ppparbiter.org.uk/files/uploads/d\\_benchmarking/200911318525\\_Int'l\\_benchmark\\_costs.pdf](http://www.ppparbiter.org.uk/files/uploads/d_benchmarking/200911318525_Int'l_benchmark_costs.pdf).

has been competitively tendered by the time a reference is made, the submissions should provide evidence to demonstrate that an effective competition has been conducted. The Arbiter's more detailed information requirements in respect of this are set out in bullet points 6 and 7 of paragraph 5.3 of the Procedural Framework.

- 3.11 Work that is to be the subject of a competitive tender ahead of Periodic Review, but for which at the time of a reference a competition is yet to be concluded, will be assessed in the similar way to all other asset specific costs and activity volumes although information from tenders which are in progress, but which are not completed, may be taken into account if appropriate.

**Central cost amounts (including engineering access)**

- 3.12 In reaching a view on central cost amounts, the Arbiter expects to consider separately its component parts, and where appropriate the associated volumes as defined in the DBS. These cost categories broadly comprise:
- administration and other costs (such as HR and Finance);
  - operational and capital expenditure overheads; and
  - other separately identifiable costs (such as secondment fees).
- 3.13 As with the analysis of asset specific costs and activity volumes, the approach which the Arbiter will adopt in analysing central costs will depend on a number of factors. These factors are likely to include the availability of relevant and reliable benchmarking information and the extent to which the parties provide in their submissions transparency of the assumptions which they used in establishing their cost projections, including the identification of cost drivers, and of robust cases for the adoption of these assumptions.
- 3.14 The Arbiter is likely to make use of both top-down and more detailed approaches in considering central costs. A top-down approach to assessing central cost amounts was used by the Arbiter's advisers in the reference on Initial Ranges. Such an approach relied heavily on external benchmarking information and historical cost data, in addition to the information contained within Tube Lines' submission, in order to establish a range of Notional Infracost costs.
- 3.15 The Arbiter considers that a more detailed bottom-up analysis of individual cost categories is likely to be of particular value in cost areas for which there is significant 'lumpy' capital expenditure, such as IT and accommodation, which are not so amenable to the application of top-down benchmarks. This approach may also be more appropriate for cost areas such as operating and capital overheads for which there are limited readily available comparable benchmarks.
- 3.16 One component of capital expenditure overheads, as specified in the DBS, is the cost associated with engineering access. Consideration of the required amount of access is likely to be undertaken by the Arbiter's technical advisers in conjunction with their consideration of activity volumes and associated work programmes.

- 3.17 The Arbiter expects the parties to provide coherent access plans as part of their respective submissions which include clearly transparent assumptions, related to the Access Code where appropriate. He will also use benchmarking information, for example from Metronet and other rail companies, in order to establish his view of the Notional Infraco allowance for engineering access.
- 3.18 The treatment of some separately identifiable cost items, in particular secondment fees, depends in part on interpretation of contractual provisions. The Arbiter will consult the Parties separately on these contractual matters.

### **Performance revenues**

- 3.19 In reaching a view on performance revenues (or abatements) likely to be earned by a Notional Infraco, the Arbiter expects to consider separately the individual elements of contractual performance (ie capability, availability, ambience and service points) as set out in the DBS, with a particular focus on capability and availability, given their materiality.
- 3.20 Paragraph 7 of Part 2 of Schedule 1.9 to the PPP Agreement states that for the purpose of setting ISC, the only performance revenues which are taken into account are those capability revenues which are forecast to arise from the completion of the line upgrades, thereby suggesting that the net flow of all other types of performance revenues, for the purposes of calculating ISC, should be assumed to be zero.
- 3.21 Despite the exclusion of other forms of performance revenues from the ISC calculation, the Arbiter would expect a Notional Infraco to target a performance level which would mitigate the risk of incurring abatements which may arise given the volatility of performance and the asymmetric payment rates within the performance regime.
- 3.22 In reaching a view on the target level of performance for a Notional Infraco, the Arbiter and his technical advisers will form a view on the relationship between work undertaken and the impact on the performance regime. A clear understanding of this relationship will be particularly important where Tube Lines considers that a Notional Infraco would undertake significant additional work to mitigate changes in the performance regime proposed by London Underground in its Restated Terms.
- 3.23 In forming a view on the relationship between the work undertaken and the impact on the performance regime, the Arbiter expects Tube Lines' and London Underground's submissions to set out their assumptions clearly.

## **Differential inflation and indexation amounts**

- 3.24 The DBS allows for the specification of differential inflation amounts (defined as the allowance for inflationary movement in the prices of input such as materials costs and wage rates above RPIX) at a level of disaggregation consistent with that at which costs are presented. It also allows for the presentation of RPIX projections relative to which differential inflation amounts have been calculated. The Arbiter intends to reach his own view on the Notional Infraco allowance for differential inflation amounts, which will also require him also to reach his own view on future RPIX assumptions.
- 3.25 In reaching a view on differential inflation, the Arbiter proposes to seek expert advice on the most appropriate reference points for future differential inflation projections, taking account of the mix of inputs within Tube Lines' costs.
- 3.26 In reaching a view on future RPIX assumptions, the Arbiter is minded to rely where possible on established and recognised published sources such as those within the Bank of England's quarterly Inflation Report.
- 3.27 An important aspect of the Arbiter's inflation assessment will be his consideration of those costs to which it is appropriate to apply his indexation assumptions. This point is of particular relevance to costs which relate to sub-contracts within which inflationary risk has been passed on to the sub-contractor. In such cases it will be for the parties to provide to the Arbiter evidence, as part to their submissions, of the extent to which it has been agreed to pass on indexation risk to the sub-contractor.
- 3.28 The Arbiter understands that there is the potential for the parties to agree, as part of the Periodic Review process, a different approach to indexation to that currently specified within Schedule 4.2 of the PPP Agreements. This approach, which may involve applying indexation according to an index or a basket of indices, may preclude the need for a separate allowance for differential inflation. However, even if the parties reach consensus on such an alternative mechanism, the Arbiter may still need to project the indexation amount associated with the agreed revised index or basket of indices for the purpose of calculating ISC.

## **Contingency and risk amounts**

- 3.29 The DBS distinguishes between the categories of risk which are part of Infraco's costs, in terms of costs associated with specific cost lines ('contingencies') and corporate and asset specific risks. In reaching a view on the level of contingency and risk which should be priced into the Notional Infraco's costs, the Arbiter will consider each of these types of risks separately, before considering them together in order to identify and remove any overlap.
- 3.30 The Arbiter expects that the parties' submissions will clearly describe the specific contingency forecasts included within the cost rows and the assumptions on which these are based, including details of risk processes. For example, if costs are based on historical costs of equivalent works (ie a like-for-like comparison) the total of base cost plus

risk may equal historic costs<sup>9</sup> since out-turn costs include those out-turn risks which have materialised. However, where low probability risks have been encountered, the Arbiter expects that the associated costs will have been identified and removed from the base cost analysis where this is used as the basis of forecast costs. The Arbiter expects that an allowance for such low probability risks will instead be included in the asset specific or corporate risk register.

- 3.31 In particular, the Arbiter expects the parties to provide sufficient evidence in their submissions to support their views on the extent to which it will be possible for Tube Lines to flow down risks to its subcontractors or the extent to which the sub-contracting process has resulted in the identification and crystallisation of risk. Furthermore, the submissions should make clear the point at which it is anticipated these sub-contracts will be agreed. Where the parties do not provide this evidence, the Arbiter will assume that all costs which sit within sub-contracts include risk and will not make a separate risk allowance elsewhere.
- 3.32 In reaching a view on contingency, the Arbiter will consider the specific contingency forecasts included within the cost rows, with reference to the description and rationale for the inclusion of these amounts within the parties' respective submissions and the extent to which sub-contracts which pass on risk have been agreed. In doing so, the Arbiter will have regard to the principle of making an allowance based on the "most likely" expectation as set out in the PPP Agreement<sup>10</sup>.
- 3.33 In reaching a view on the asset specific risk amount and corporate risk amount that a Notional Infraco would price into its bid in a competitive tender, the Arbiter will build up his own view of the risks which it is appropriate to include within each of the risk registers and of the magnitude and probability of these risks occurring. This will draw both on relevant external comparator information and on analysis of the risk registers included within the submissions, to the extent that these are considered to be transparent and robust.
- 3.34 The Arbiter will bring together his assessment of contingency and asset specific and corporate risks to assure himself that risks have not been double-counted.
- 3.35 In coming to a view on the appropriate allowance for contingency and of corporate and asset specific risk, the Arbiter will take into account the risk allocation between the Parties in the PPP Agreement, and in particular that implicit in the Extraordinary Review provision. The Extraordinary Review provisions protect an Infraco from efficient and economic expenditure above the Materiality Threshold. The Arbiter considers that this protection means that some low probability risks should not be priced at Periodic Review, and included in ISC, but should only be reflected in ISC when they materialise.

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<sup>9</sup> Assuming a symmetrical out-turn cost distribution and a sufficiently large number of projects, and ignoring any changes in efficiency.

<sup>10</sup> See Schedule 1.9, Part 1, Paragraph 5.1 (a) of the Tube Lines' PPP Agreement.

## Efficiency amounts

- 3.36 The DBS allows for the specification of efficiency amounts at a level of disaggregation consistent with that at which costs are presented. The Arbiter will review these amounts and reach his own view of the efficiency savings available to a Notional Infraco.
- 3.37 At Periodic Review, the starting point for the analysis of asset specific and central costs will be the assumption that the only source of efficiencies for the Notional Infraco is the result of movements in the efficiency frontier. In other words, the starting assumption will be that any 'catch up' to a level of performance which is fully efficient and economic and reflects Good Industry Practice as a consequence of the starting position of the Infraco at Transfer has been achieved in the first Review Period.
- 3.38 Given this starting point, the Arbiter would expect to use external benchmarks as an indication of a level of performance consistent with that of a Notional Infraco, that is, one which operates in an overall efficient and economic manner and in accordance with Good Industry Practice. If he finds that the costs of the actual Infraco are in excess of appropriate benchmarks, using all available information and evidence (including expert judgement), he would expect to make an adjustment to costs at the start of the second Review Period to reflect this. In the same way, if Infraco costs are lower than appropriate benchmarks, the higher benchmark will be adopted. This reflects the guidance to the Arbiter from the Parties that "the probability that in the management of a portfolio of activities, the actual cost of some individual activities will exceed the costs allowed, and the actual costs of other individual activities will be less than the costs allowed"<sup>11</sup>.
- 3.39 Consistent with the approach adopted in the Initial Ranges reference, the Arbiter will however consider whether an adjustment needs to be made to external benchmarks to reflect the impact of factors specific to the PPP Agreements, including the approach by London Underground to management of the contracts. Where such factors exist, the Arbiter would expect to allow a higher level of costs at the start of the second Review Period. But he would expect to assume that this difference would be eliminated within the second Review Period as these constraints are removed.
- 3.40 In judging the level and rate of the potential for efficiency savings resulting from a change in the frontier for performance which is overall efficient and economic and in accordance with Good Industry Practice, the Arbiter will draw on all information and evidence which is available to him including that assessment of efficiency improvement potential in other comparable sectors and information provided by the Parties.
- 3.41 The Arbiter will, in addition, consider how efficiency assumptions should be applied to different categories of costs. This point is of particular relevance to competitively tendered upgrade projects and to large renewals sub-contracts which have associated payment milestones that

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<sup>11</sup> Paragraph 1.5(a)(z) of Part 1 of Schedule 1.9 of the PPP Agreement.

are set over a fixed time horizon and which may already reflect future efficiency changes.

- 3.42 In respect of sub-contracts, the fact that a contract has been competitively tendered will not be sufficient grounds for the Arbitrator to conclude that it has captured all appropriate efficiency savings. Instead, a specific assessment will be made as to whether the contract price includes appropriate frontier shift and catch-up efficiencies. The Arbitrator will expect the parties' submissions to provide evidence in respect of this.

## 4 Cost aggregation model and confidence levels

- 4.1 In his guidance on Initial Ranges, the Arbiter developed his own cost aggregation model which brings together the component parts of total costs from the level of disaggregation at which they were considered, as set out in paragraph 3.1 above<sup>12</sup>. The Arbiter's model also has the functionality to compare a summarised version of London Underground's and Tube Lines' respective cost projections.
- 4.2 The Arbiter intends to update his model as necessary, for information which has emerged subsequent to the completion of Initial Ranges, for example to reflect the final version of the DBS for the Periodic Review.
- 4.3 Factors which may typically contribute to the level of confidence include the robustness of the submissions and the availability of robust and reliable benchmarking information. The framework for articulating such confidence levels, which may be of particular relevance to asset specific costs, is set out in Table 1 below:

**Table 1: Confidence levels - Parties submissions**

<b>A</b>	Good agreement between parties on volumes and other key cost drivers involved in estimating costs or cost estimates supported by competitive tendering information and there is agreement between the parties on the outcome of the procurement process. In these areas the Parties may wish to give the Arbiter guidance in paragraph 6.6. of Schedule 1.9 to the effect that they are agreed on these items.
<b>B</b>	Key cost drivers including volumes identified and generally agreed between parties but significant disagreement as to costs. Some correlation between parties' benchmarking evidence and costs estimates and/or costs are supported by a competitive tender and full transparency of this process has been provided.
<b>C</b>	Key cost drivers understood to some degree but parties benchmarks/other analysis indicates materially different costs/performance/volumes to that forecast by the other party. Costs estimates are supported by little/no procurement information.
<b>D</b>	Little shared understanding of costs drivers and/or volumes poorly explained. Benchmarks not relevant and/or unavailable. Costs primarily based on judgement and/or historical costs. No procurement information provided for tendered items.

<sup>12</sup> At Initial Ranges, performance revenues were calculated in a separate model, the outputs of which formed inputs to the Arbiter's cost aggregation model.

- 4.4 At Initial Ranges, the Arbiter’s final guidance was in the form of a range of total costs, which was characterised by ‘low’ and ‘high’ cases. In a Periodic Review direction, the Arbiter will need to develop his “best estimate” of costs, as a basis for a direction on ISC.
- 4.5 To enable him to take a view on this “best estimate”, the Arbiter will expect his advisers to indicate the confidence attached to their analysis of costs in their technical reports. The framework for this is provided in Table 2 below:

**Table 2: Confidence levels - Advisers technical reports**

<b>1</b>	Unambiguous benchmarking information/alternate analyses available.
<b>2</b>	Sufficient alternative benchmarking/other information available.
<b>3</b>	Limited/no alternate benchmarking/other analyses available.
<b>n/a</b>	Parties have a shared view of cost drivers, volumes and costs and or costs are supported by a transparent procurement process. Limited further verification undertaken.

- 4.6 When bringing together all of the inputs provided by advisers into his own estimate of costs the Arbiter will have regard to the confidence levels described above giving greater weight to those estimates considered to be the most reliable.
- 4.7 In addition to considering the level of confidence provided by the parties submissions, his advisers reports and the confidence levels that they have ascribed to their analyses, the Arbiter’s approach to determining the appropriate total of Notional Infraco costs is likely to follow that developed previously in his Initial Thoughts on the Metronet Extraordinary Review<sup>13</sup>. This was to reach a spot estimate using his judgement while taking on board some key factors. Such factors, which were explored also in the Arbiter’s Initial Thoughts on the Metronet Extraordinary Review, and which are likely to remain important in the context of Periodic Review are:

- the desire to prevent frequent reopening (as a result of Infraco incurring Net Adverse Effects in excess of the Materiality Threshold) in the second review period, which the Arbiter considers would be both burdensome and costly;
- the desire to create incentives for efficient delivery and sustained improvements in unit costs in the absence of competitive pressure (balanced against the objective to reduce the probability of Extraordinary Review);

<sup>13</sup> Reference for Directions from Metronet BCV Rail Ltd for Extraordinary Review – Issues Arising, 20 December 2007, at [http://www.ppparbiter.org.uk/files/uploads/o\\_direction/200792162632\\_BCV\\_ER\\_Initial\\_thoughts\\_paper.pdf](http://www.ppparbiter.org.uk/files/uploads/o_direction/200792162632_BCV_ER_Initial_thoughts_paper.pdf).

- the need to take in skew in the likelihood of estimated costs/revenue for components within the stated range, which will be determined by factoring in the professional judgment of the Arbitrator's advisers; and
- the allocation of risk implicit in the Extraordinary Review process.

## **5 Use of outputs of cost reference in setting ISC**

- 5.1 The Arbiter has developed an ISC calculation model which brings together, in accordance with Paragraph 7.4 of Part 2 of Schedule 1.9, each of the negative and positive cashflows described in Paragraphs 7.2 and 7.3 respectively.
- 5.2 The Arbiter is currently consulting Tube Lines, London Underground and their relevant advisers on the form of this model. The Arbiter will consult on, and publish, a separate document setting out his approach, and in particular his conclusions on key issues arising from this consultation, in due course.