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TRANSPORT *for* LONDON

**LONDON UNDERGROUND
PUBLIC PRIVATE PARTNERSHIP**

EMERGING FINDINGS

17 July 2001

Copy Number

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17 July 2001

Our Ref: LE0107003 SC5

Dear Sirs

London Underground Public Private Partnership

We enclose our report on the emerging findings from the work that we have carried out to date on bid evaluation and on value for money issues surrounding the London Underground Public Private Partnership. This is in accordance with a request by Mr J. Walder and is governed by our contract with you dated 20 June 2001.

Our report is private and confidential to the addressees and should not be disclosed to any other party, quoted from or used by any party other than the addressees without our prior written consent. No other party is entitled to rely on our report for any purpose whatsoever. We draw your attention to the section entitled "Scope and bases of review" which is set out in Section 1.1 of this report in which we set out the scope of our work, sources of information and the limitations on the work undertaken.

The facts set out in our report reflect our understanding of the information and explanations which we have received from London Underground Limited ("LUL") and their financial advisers, PricewaterhouseCoopers. As we have explained to you, it has not been part of our review to carry out any audit or verification work in respect of that information.

So far as our report is concerned, we would like to draw your attention to the following matters:

- Our work has been limited by the time available, scope, information available and limited access to information sources. In the circumstances you should not rely on our work and our report as being comprehensive as we may not have become aware of all facts or information that you may regard as relevant. Furthermore we have not corroborated the information received and, to that extent, the information may not be entirely reliable. We accept no responsibility for matters not covered by our report or omitted due to the limited nature of our review. Our work is not intended to be a

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substitute for a detailed bid evaluation leading to a conclusion on whether proposals are likely to provide value for money.

- We have not received certain information that we have requested and have not had the facility to meet with LUL and their financial advisers on all occasions requested and consequently, the report is limited by this.
- Neither LUL nor its financial advisers have reviewed this report and therefore we have been unable to seek confirmation from them that its contents are factually accurate or complete in all material respects.

Yours faithfully

Deloitte & Touche

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1. INTRODUCTION

This report has been prepared at the request of Mr Jay Walder, Managing Director, Finance & Performance, of Transport for London ("TfL") and sets out our emerging findings from the work that we have carried out to date on the following aspects of the financial evaluation of bids for the London Underground Public Private Partnership ("LU PPP" or "PPP"). The report covers the following main areas:

- The value for money ("VFM") analysis that has been carried out; and
- The selection of preferred bidders for the [REDACTED] and [REDACTED] lines in early May 2001.

The report is based entirely on the information that has been provided to us by London Underground Limited ("LUL") and their financial advisers, PricewaterhouseCoopers ("PwC") and the meetings that we have had with LUL and PwC. A number of information requests are outstanding as are requests for additional meetings and as a result the findings in this report may be amended at a later stage.

1.1 Scope and Bases of Review

Our work has been limited by the time available, scope, information available and limited access to information sources. In the circumstances you should not rely on our work and our report as being comprehensive as we may not have become aware of all facts or information that you may regard as relevant. Furthermore we have not corroborated the information received and, to that extent, the information may not be entirely reliable. We accept no responsibility for matters not covered by our report or omitted due to the limited nature of our review. Our work is not intended to be a substitute for a detailed bid evaluation leading to a conclusion on whether proposals are likely to provide VFM.

Our report has been prepared from that work solely for the confidential use of yourselves and solely for the purpose of assisting you in considering VFM and bid evaluation issues on the LU PPP.

This report may not be made available or copied in whole or in part to any person other than yourselves, quoted from or used by any party other than the addressees without the express written permission of Deloitte & Touche. Deloitte & Touche accept no responsibility for any reliance that may be placed on this report should it be used by any party or for any purpose that has not been expressly agreed by Deloitte & Touche.

Neither LUL nor its financial advisers have reviewed this report and therefore we have been unable to seek confirmation from them that its contents are factually accurate or complete in all material respects.

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2. EXECUTIVE SUMMARY

The key findings from our limited scope review are as follows:

- Neither the 30 year nor the 7½ year comparison provides a satisfactory basis for establishing VFM.

We have seen no evidence that there is a valid basis for establishing that the PPP will achieve VFM using commonly accepted techniques for projects of this nature. The selection of a 30 year contract period for this purpose is flawed because bidders were not required to submit firm prices for the whole period. Firm prices were required only for the first 7½ years, the prices being renegotiable at that time and again at 7½ year intervals.

LUL have chosen not to use the first 7½ year period for the VFM comparison because of the difficulties of validly comparing the net present value ("NPV") of the bids and the Public Sector Comparator ("PSC") at this point. The draft PSC which has been provided to us for the 7½ year period shows the bids to be more expensive than the PSC with the exception of [REDACTED] on the [REDACTED] line, which may be acceptable when compared with high end of the PSC range but not when compared with the low end of the PSC range. If a number of the judgmental issues noted in this report are also taken into account it may be that [REDACTED] bid is also more expensive than the PSC and that the bids of [REDACTED], [REDACTED] and [REDACTED] fall even further outside the PSC range.

- **Highly material adjustments to the PSC are judgmental, volatile or statistically simplistic.**

In compiling the PSC, a number of adjustments have been made to the Base Costs provided by LUL staff. These adjustments amount, in aggregate, to some £2.5 billion.

- One of the largest adjustments amounting to £1,170 million relates to "performance". This represents an expected failure of LUL, under the PSC assumptions, to meet the performance requirements of the projects. It is not a cash item but is expressed as the economic cost to passengers of such failures. Our views on this are set out in Section 3.5 of this report but in essence our concerns are that, for such a large adjustment, many of the assumptions underlying its calculation are material and judgmental.
- In the process of finalising the PSC, the performance adjustments have been extremely volatile. In the course of one review a swing of nearly £900 million was processed.

- There is considerable scope for double counting some adjustments to the Base Costs in the PSC. These costs have first been estimated by technical experts, increased to reflect a poor historical performance in estimating project costs, decreased to reflect likely improvements over the next 30 years and finally subjected to sensitivity analysis to establish a range of uncertainty around this central point. In such a process it is difficult to ensure that the Base Costs are not already influenced by the uncertainties quantified in the later adjustments.
- Some of the statistical analysis is arbitrary and could be mis-interpreted by the reader.

We are concerned about some of the statistical analysis employed in the financial evaluation of the bids.

- In a number of areas – unit cost adjustments, inflation divergence and the performance adjustment – estimates have been provided of a “Most Likely” value and a “Top” and “Bottom” value. It has then been assumed that the probability that an outcome will fall at any point within this range is directly proportional to the difference from the Most Likely value. In general, we consider the analysis to be simplistic and arbitrary.
- In some cases, where reports have been presented showing only ranges for the NPV of the PSC i.e. without disclosing the central value, we consider that a misleading impression could be drawn by an uninformed reader who might well assume (incorrectly) that the most likely outcome is in the centre of that range whereas invariably it falls towards the lower end of the range.
- Selection of preferred bidders too early in the process could lead to a materially adverse impact on VFM.

In our view there would have been a strong case for delaying the appointment of preferred bidders until negotiations had been completed with regard to the conditionality in the bids, outstanding technical issues and the impact of changes in scope. In our experience this is normal for the procurement process utilised in PPP transactions. The appointment of preferred bidders at an earlier stage will require such negotiations to be undertaken without the benefit of competitive tension and may well lead to material erosion of VFM.

- The financial advantages of selecting [REDACTED] as the [REDACTED] preferred bidder depend upon judgmental adjustments.

Taking financial criteria in isolation, for the [REDACTED] lines the unadjusted bids would favour the selection of [REDACTED] as preferred bidder. We consider that the adjustments which lead to a reversal of this position and support the appointment of [REDACTED] are based on assumptions which are highly subjective.

- Public sector bond financing has been largely dismissed.

The advantages of Bond financing as a basis for a PSC have been largely dismissed despite an assumed efficiency gain of around £900 million and an interest rate advantage of £800 million. The main quantified support for this is the suggested impact on the borrowing costs for other public sector projects ("reputational externality") amounting to around £700 million together with smaller adjustments amounting to some £300 million. In our view, the concept of reputational externality is largely theoretical and the potential quantum should be very small. It is difficult to understand the assumed 90% reduction in the interest rate differential benefit that arises from the concept of reputational externality. We have not been persuaded by the evidence provided to us for the quantum of the adjustment for reputational externality.

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3. VALUE FOR MONEY ANALYSIS

3.1 30 year costs and 7½ year costs

A major element of VFM analysis in any PPP project is the comparison of a PSC with bids submitted by private sector consortia. In line with normal practice, LUL have prepared a PSC which covers the 30 year period of the proposed PPP contract and converted the estimated cash flows into a NPV. The real discount rate used for this calculation is prescribed by HM Treasury as 6 per cent.

LUL asked the bidders to submit prices ("ISCs") for the full 30 year period of the contract. However, only the first 7½ years of the ISCs could be regarded as firm prices. The remaining 22½ years' ISCs must be regarded as indicative because of the "periodic review" process that operates every 7½ years through the contract period. These periodic reviews allow LUL's payments to the Infracos to be reset to take account of changed circumstances and cost increases which an "economic and efficient" Infraco would experience. Consequently, the ISCs for this latter period can only be regarded as indicative and not firm.

This "periodic review" feature of the proposed contract has significant ramifications for the VFM evaluation. The 30 year PSC is not able to be compared in a robust manner with the 30 year private sector ISCs. In practice a comparison has been done but the last 22½ years of the private sector ISCs are indicative only, and will almost certainly be amended when the three periodic reviews take place during the contract period.

LUL have recognised the difficulties in undertaking an effective VFM exercise on the 30 year basis and therefore asked their financial advisers to assist in preparing a PSC that only covered the first 7½ years of the contract period. This has been attempted but the exercise of preparing such a PSC which can be validly compared with the bids at a 7½ year point presented new difficulties and was regarded by LUL as "artificial". The difficulties included the timing of investments, bidders' strategies on benefits timing, bidders' mobilisation costs, different views on capex/opex trade-offs, partnership savings, etc. The supporting papers for the comparison of the 7½ year PSC to the bids state that there was a concern that such a "comparison may disadvantage the PPP compared to the PSC" while the LUL technical team are stated to believe that there were "unquantified areas where the bids offer benefits over the PSC not included in the analysis". Despite these concerns, the calculations by LUL appeared to show that a VFM analysis calculated at the 7½ year point supported the VFM analysis performed on the 30 year numbers in that "the leading bidders for both competitions fall within the PSC range".

Our review of this position, however, shows that the above statement was made on the basis of a comparison of the bids with the Bond PSC. If a comparison is made with the Traditional PSC, which should be more conservative (i.e. higher cost) than the Bond PSC, at the 7½ year point, the analysis shows:

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- For the [REDACTED] lines, that both [REDACTED] and [REDACTED] fall above the PSC range.
- For the [REDACTED] lines, that [REDACTED] NPV range falls fully within the range of the PSC. [REDACTED] falls above the PSC range.

In summary, we consider the position on the VFM exercise is as follows:

- For the 30 year scenario, there is a detailed 30 year PSC but the 30 year bids are not firm as prices can change at each periodic review. There is a concern, that has been expressed by LUL and their financial advisers, that bidders may have bid lower prices for the period after the first 7½ years. Therefore, we consider the VFM analysis undertaken on the 30 year ISCs submitted by the bidders is not meaningful.
- For the 7½ year scenario, the bids from both [REDACTED] and [REDACTED] and from [REDACTED] would appear not to offer VFM. The bid from [REDACTED] falls fully within the PSC range (the lowest point of the PSC range is lower than the lower point of [REDACTED] range while the highest point of the PSC range is above the highest point of [REDACTED] range) and as such there is a scenario where the PSC offers better VFM than the bid from [REDACTED].

3.2 Updating of the PSC

We understand that there have been a number of versions of the PSC prepared. This would be normal during the course of a PPP project especially where there have been changes in scope of the project at different stages of the procurement process. A formal version of the PSC was prepared at the ITT stage in March 2000. This was updated in August 2000 following the review work undertaken by KPMG and a further update was carried out in November 2000 for the BAFO stage of the procurement.

Since the BAFO bids were submitted in November 2000, the bidders have been requested to consider two further sets of amendments to the terms of the project, namely the descoping exercise that was carried out over Christmas 2000 and the contract amendments that were proposed to the bidders in April 2001. The PSC has not been updated to reflect these amendments to the project. As a result the VFM exercise comparing the PSC with the private sector bids has been carried out on November 2000 PSC numbers and BAFO bids rather than the latest position. We have been informed that LUL intend to update the PSC at a later date.

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3.3 Base Costs and Adjustments

3.3.1 Base Costs

The PSC has been undertaken on the basis of LUL's best estimate of the costs it would be likely to incur over the 30 year contract period consistent with meeting the performance specifications as defined in the Infraco Specific Contractual Documents. Significant work was undertaken by LUL to prepare these best estimates and Ove Arup, Consulting Engineers, also supported LUL in this process. After the first issue of the PSC report in March 2000, amendments were made to the base costs to correct errors and reflect changes in the PPP specification. From March 2000 to the latest version provided, the Base Costs increased by 6% from £[REDACTED] million to £[REDACTED] million. Of the seven changes the largest was £522 million [REDACTED] for revised labour factors. NAO have commented that LUL's approach to estimating the capital spending programme "has been a reasonable one".

3.3.2 Adjustments: Triangular Functions

Adjustments were made to the Base Costs for risk, efficiencies and performance. For all adjustment categories, calculations are based on a set of three input percentages for each asset class or line. The three inputs represent the "Bottom", "Most Likely" and "Top" values for each adjustment. In every case it has been assumed that the adjustment could be modelled using a triangular distribution with the three inputs representing the 5th percentile, the modal value and 95th percentile of this distribution.

As is noted in Section 3.4, statistical simulations are no longer run on the PSC. The consequence of this is that the adjustment calculations are based upon the expected value (mean) of each distribution. Two points that should be noted are:

- The "Expected Value" noted in the Financial Evaluation reports is the mean value of the functions and depends on the distribution chosen to model the adjustment. We have seen nothing to suggest that a triangular distribution is appropriate for the adjustments and the choice of another distribution might yield significantly different results.
- In many cases, the distribution defined by the three points is skewed, because the Most Likely value does not fall mid-way between the Bottom and Top values. Where this arises, the Expected Value and Most Likely value do not coincide. In the majority of cases the Most Likely value is closer to the Bottom value than to the Top value, and so the Expected Value used in the calculation is higher than the Most Likely value input.

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In order to illustrate the effect of the distribution skewness on the NPV of the PSC, we replaced the Expected Value of each adjustment by the Most Likely value input for that adjustment. This work indicated that, if the distributions were symmetrical about the Most Likely value input, then the base case 30 year NPV of the Traditional PSC would be reduced by approximately £800 million. Of this, some £400 million relates to the performance adjustment and approximately £175 million is accounted for by the unit cost uncertainty adjustment. These adjustments are discussed in Section 3.3.3.

3.3.3 Adjustments: Scale of Adjustments

As noted above, in accordance with normal practice in preparing the PSC, adjustments have been made to the Base Costs to reflect the risks and efficiencies that LUL might experience over the 30 year contract period. The impact of these adjustments over the unadjusted Base Costs has been to increase the NPV of the PSC from £[REDACTED] million to £[REDACTED] million as shown in Appendix 1 (before taking into account opening working capital balances) which is an increase of £2,519 million or [REDACTED] per cent.

The NAO report on the LU PPP raised the issue that because the modelling process considered uncertainty factors on an individual line by line basis, rather than on an holistic basis, it was difficult to be sure that there had been no double counting of the adjustments. As a result of these comments LUL adopted a simpler approach for sensitivity analyses but in our view there still remains considerable scope for there to have been double counting of uncertainties in the adjustments that have been made to the base case of the PSC, around which the sensitivities were flexed.

The three most significant adjustments are the "investment and maintenance cost overruns" which added £1,576 million to the Base Costs and the "performance" adjustment which added £1,170 million to the Base Costs. These are offset by an "efficiency" adjustment of £581 million.

The investment and maintenance cost overruns adjustment has been made on the basis of a series of risk workshops held by LUL. These workshops examined the historical experience of cost overruns on earlier projects and extrapolated that to the PPP project. We have been informed that the same personnel who were involved in building up the Base Costs were also involved in these workshops to eliminate the possibility of any double counting. We understand that this was not always the case. We understand that, historically, a significant proportion of cost overruns experienced by LUL were caused by changes in scope in investment and maintenance projects. Cost overruns caused by changes in scope to projects would not represent a valid adjustment to the PSC but it is not clear that such overruns have been satisfactorily eliminated from this adjustment. In addition the cost overrun adjustment has been made over and above lesser adjustments in respect of inflation divergence on certain indices (£233 million) and estimating unit cost uncertainties (£174 million). It appears that the impact of divergence between general inflation and cost specific inflation was not fully eliminated from the cost overrun analysis on the historical projects. Taken

together the adjustments add a very significant premium to the Base Costs which had themselves been examined and compiled at great length and at considerable cost.

The performance adjustment of £1,170 million is intended to reflect the risk that LUL's investment projects fail to deliver the expected performance improvements. It represents the notional additional costs that such failures would impose on London's passengers. This adjustment is highly subjective. The size of the adjustment is very sensitive to changes in the underlying assumptions and, in our view, could have been shown at either a significantly higher or lower figure.

3.4 Sensitivities

NAO highlighted that the production of single values for the PSC cannot be relied on, especially given the particular characteristics of this project. Therefore ranges of outcomes were presented and compared with the adjusted bids (both before and after commercial adjustments). The ranges were built up by applying different estimates of the risk and efficiency factors to the fixed Base Costs.

Although a sophisticated sensitivity analysis was initially proposed utilising Monte Carlo simulations a simpler approach was ultimately adopted. This approach used four simple 'banking' sensitivities considered around the base case. LUL have called these Low, Lower, Higher and High (see table below). For the avoidance of doubt, the two extremes of the range are Low and High. The range of outcomes was then established by aggregating the extreme values for each variable.

The revised method applied sensitivities to only a minority of the data and adjustments. In respect of the base case, sensitivities were only applied to the five largest costs: capital expenditure for stations, rolling stock, track and signalling and rolling stock maintenance. These cover 52% of the cost data. Sensitivities were not undertaken on the Base Costs, the inflation divergence adjustment or the unit cost uncertainty adjustment but on the investment and maintenance cost overruns and efficiencies (Appendices 7 and 8). In addition, no sensitivities were carried out on the performance adjustment nor the Bond specific adjustments (annuality efficiencies and reputational externality adjustment).

As a result of conducting sensitivity analysis on less than [REDACTED] of the cost variables the high-low range is narrower than that initially modelled via Monte Carlo techniques. This is despite the adoption of sensitivities which frequently appear extreme (they are beyond the workshop ranges in a number of instances, e.g. for [REDACTED] the highest point of the workshop range, being 10%, became 25% for the High case – see Appendix 7). The reasons for the choice of these percentages is unclear, at least from the information available to us. There are other short-cuts which compromise the sensitivities, such as lack of consideration of correlation of variables (i.e. it all goes wrong / well all at once).

This simplified methodology was applied to the PSC model in November 2000 to arrive at the percentage variances shown below. For subsequent versions of the model the same percentages were applied across the board both to the Traditional and Bond cases, and to each subsequent version of the PSC model.

Low	(3.8)	(3.8)
Lower	(2.1)	(2.4)
Base	0.0	0.0
Higher	2.1	2.6
High	8.3	11.6

From the table above, it should be noted that these sensitivities are weighted towards the "High" scenario. This is graphically illustrated in Appendix 10. The LT Board reports presented the high-low range without showing the Base value or an appreciation of the weighting of the range. A conclusion based only on a range could be misleading especially if the reader is sceptical of the "optimistic" end of the range and assumes that the base value falls in the centre.

Our overall view on the sensitivity analysis is that it is excessively simplistic and that certain aspects of the statistical analysis are inappropriate.

3.1 Performance

- 1 LUL recognises the possibility that investment projects fail to deliver expected improvements (leading to a failure to meet the PPP specification) despite the substantial risk adjustments already made to Base Costs (approximately 11%). An attempt has been made to value this difference from the actual outcome as the economic cost of the delays to passengers. This technique is mentioned in the *Green Book*, Annex C, as one which can practically be applied in cost benefit analysis, but it acknowledges "that [it] is however not the norm", and "... qualitative assessment, with no valuation ... is often the best approach." Nevertheless, the method used by LUL is well established internally for cost benefit analysis.
- 2 More commonly, a PSC is prepared on the assumption that the Base Costs will meet the PPP specification. It is, therefore, important to note that the adjustment is unusual for a PPP project and highly material to the result of the VFM analysis.
- 3 We have two concerns about the way the approach has been applied to the PSC.
 - Firstly, it should be noted that the amount of the performance adjustment is one of the largest adjustments – £1,170 million or [redacted] on its own.

- Secondly, the adjustment is calculated from the interval between: the standard after base expenditure plus risk-adjustment and efficiencies, and the PPP output specification. It presupposes the former is a known datum point and that the latter can be calibrated from LUL historical experience recorded in a consistent form. We have seen no convincing support for either of these (indeed the PSC reports and appendices contain fewer than 20 pages on this adjustment compared with over 400 pages on the Base Costs), and the quantification appears to be highly judgmental.
- 4 By contrast the bids have been adjusted downwards from the underlying ISC plus performance to the PPP output specification standard. The PSC is intended to be adjusted up to this common level so that a like-for-like comparison can be made.
 - 5 The performance adjustment is not only large, it is also highly volatile in its composition. This can be seen in two ways:
 - 6 Firstly, the amendments over a period of time were very large, in absolute and relative terms, and alternating in direction. A major example is a £632 million reduction in May 2000 reducing the adjustment from £1,100 million to £460 million. The LUL team seem to have continued to have concerns about the quantum and basis of the performance adjustment. The November 2000 PSC report says "it was agreed that the assessment of the value of the adjustment in isolation from consideration of the overall context, i.e. the method used previously [up to November], was inadequate". They convened two workshops on the 8th and 9th of November with the "PSC Performance team" (Note: not the same group as generally prepared the Base Costs and risk and efficiency adjustments). As a result, in two days the performance adjustment rose – this time by £884 million from £460 million to £1,340 million. In the latest version of the PSC the performance adjustment has been reduced to £1,170 million, a reduction of £170 million.
 - 7 Secondly, we have undertaken our own sensitivities on components of the performance adjustment (Appendix 9) and, by way of illustration of the volatility, we applied a variance of 5 percentage points to the ambience measure (Appendix 9 – Case 3). The ambience element of the performance adjustment which had been an *addition* to the PSC cost of £201 million became a PSC cost *reductions* of £207 million.

3.6 Commercial Adjustments

The ISCs submitted in November 2000 were qualified in many respects. An attempt has been made to quantify the impact of eliminating such conditionality and to adjust the value of the bids accordingly. The adjustments made to the ■ bids on ■ are fairly similar (difference of £10 million) but the amounts adjusted on the ■ ■ bidders vary significantly (by £320 million) as can be seen in Appendices 15 and 16.

However, the following points have been noted:

- The method used to calculate the commercial adjustments differs from all other adjustments i.e. assigning probability and running a Monte Carlo simulation. The probability distribution utilised for this analysis is very simplistic and highly material to the results.
- To determine the upper limit of the bid ranges to be used, the 95th percentile of the Monte Carlo simulation was arbitrarily chosen as appropriate. However, if a different percentile had been chosen, the VFM gap could have been materially different. For example, if the 100th percentile values had been chosen (as shown in Appendices 15 and 16), the adjustment applied to both [REDACTED] and [REDACTED] would have been increased by over [REDACTED] and therefore, their adjusted prices would have exceeded the top end of the PSC range.
- The adjustments appear highly subjective and judgmental. We have not been provided with the supporting information which would allow us to determine the rationale behind the selection of the probability, quantum and timing of each individual component that was chosen.
- The BAFO financial evaluation reports note that not all qualifications have been taken into account in these adjustments.

3.7 Bond Financed PSC

The VFM exercise has included the analysis of three PSC scenarios, two of which assume bond financing:

- "PSC1" – a Traditional finance PSC.
- "PSC2" – Bond financing at 8.65% (being the real discount rate of 6% specified for capital expenditure analysis by HM Treasury after allowing for 2.5% inflation).
- "PSC3" – Bond financing at a rate of 5.6%. This was by reference to issues of bonds with an AA credit rating in March 2000.

PSC2 and PSC3 produce NPV figures which are lower than PSC1 as a result of assumed efficiencies arising from stable funding rather than volatile annual grants and a decrease in the performance adjustment that would result from this. These efficiencies are offset in this analysis by costs which are specific to a bond issue and by the inefficiency of holding excess cash where the re-investment interest rate is lower than the cost of borrowing. The differences between PSC2 and PSC3 arise from the benefit of a lower interest offset by the concept of "reputational externality".

A reconciliation of PSC1, PSC2 and PSC3 is set out below:

	<u>NPV £ billions</u>
PSC1 (Traditional financed)	████████
Efficiencies from stable financing, etc.	(0.9)
Annuity efficiencies – £700 million	
Performance – £200 million	
Loss through re-investment rate	0.3
Direct Bond costs and roundings	0.2
PSC2 (Bond financed at 6% real)	████████
Benefit of market interest rates	(0.8)
Reputational externalities	0.7
PSC3 (AA rated Bond)	████████

3.7.1 Annuity Efficiencies

Annuity efficiencies relate to the benefits arising from stable funding rather than funding via annual grant. LUL have estimated that a public sector Infracore would improve its efficiency by 8½% on investment and 1% on maintenance as a result of stable funding. The basis for these percentages however is not always backed up by the supporting papers.

- Memo from Richard Meads, General Manager – Corporate Planning, states *'that stability of funding and an end to annuity could lead to sufficient efficiencies in our capital programme, of the order of 20%'*¹.

The memo goes on to state that a letter to the DETR on the Comprehensive Expenditure Review agreed the following wording: *"Our view at this time is that if we were able to prepare with assurance a suite of multi-year capital works programmes, we could achieve better value in the range of 10% - 20%"*.

- LUL stated in Appendix 25 of the November 2000 PSC – *'There is a significant body of research ... the level of efficiency savings observed have been as high as 35%'*.
- The NAO noted that *'There is inevitably little by way of quantified evidence available on the level of possible efficiencies with bond finance, and LUL recognises that the 7 per cent figure is a matter of subjective judgement based on its consideration of the limited evidence.'*²

¹ Ref: Public Sector Comparator for the LUL PPP Infrastructure Company Costs and Risk – 17 November 2000, Appendix 25

² Ref: NAO Financial Analysis, 15th December 2000 Report, Page 10

We estimated the impact of a 17.5% annuity efficiency adjustment and then a 35% efficiency adjustment using the bond financed PSC financial model. The results illustrated that the decreases in the NPV of the bond PSCs were approximately £1 billion and £2 billion respectively.

3.7.2 Re-investment rate

PSC2 has been compiled by incorporating the advantage of the annuity adjustment but in other respects it takes the form of the Traditional PSC using a discount rate of 6% real. It models the impact of a series of discrete bond issues and incorporates the associated costs of those bond issues. A material part of those costs arises from the early receipt of cash from the bond issues and the need to re-invest this at a deposit rate which is lower than the cost of borrowing. In our view the costs associated with this interest rate differential could be significantly reduced by standard treasury management techniques e.g. aligning the quantum and timing of bond issues with peak cash requirements and utilising working capital facilities. Our initial calculations suggest that PSC2 could be reduced by up to approximately £200 million if such an approach were adopted.

3.7.3 Reputational Externality

The interest rate advantage of PSC3 has been largely cancelled out by adopting the concept of 'reputational externality'. In our view this is a largely theoretical concept and the potential quantum should be very small. This view is supported by NAO in their report when they stated '*There is some theoretical basis for making such an adjustment, but also, in our view, considerable scope for argument over its size.*'³

The case modelled by LUL assumes that the effect of the reputational externality is such that it reduces the interest rate differential benefit when compared with the HM Treasury discount rate by a factor of 90%. This effectively results in there being no material differences between the AA credit rated bond financed PSC and the 6% bond financed PSC. The estimate of 90% appears to have been made on the basis of a paper by David Lunn of DETR who states that '*... the creditworthiness of TfL is wholly dependent on the receipt of central government grant: it would be unable to meet its financial obligations without such support*'⁴. David Lunn also acknowledges in the same paper that the selection of such a figure can only be '*done arbitrarily*'. We believe that the cost of enhancing the credit of TfL is an entirely different issue from that of reputational externality and we have seen no detailed calculations of such a cost.

The assumption underlying PSC3 is that 3 bond issues totalling £5 billion would be made to fund the first 15 years of the operating period. When

³ Ref: NAO Financial Analysis, 15th December 2000 Report, Page 10

⁴ Ref: Public Sector Comparator for the LUL PPP Infrastructure Company Costs and Risk - November 2000, Appendix 29, Paper by David Lunn, DETR, 17th November 2000

comparing this average of £333 million per year raised with amounts raised by the government by way of gilt issues, such bond issues would represent less than 5% of government finance raised. On this basis, it is difficult to understand a 90% level for the concept of reputational externalities.

The total cost of the reputational externality adjustment incorporated in PSC3 would appear to be around £700 million but we have not been provided with the calculations to support this adjustment.

3.7.4 Summary of issues relating to PSC2 and PSC3

In our view the benefits of a Bond issue compared with the Traditionally financed PSC are understated because:

- We believe that the inefficiencies arising from differentials between interest rates for deposits and interest rates for borrowing could be significantly reduced by issuing bonds on a more regular basis than once every five years and by appropriate treasury management. We estimate the order of this reduction to be up to approximately £200 million.
- We are not persuaded by the evidence for an adjustment for reputational externalities at the level of around £700 million.

4. PREFERRED BIDDER SELECTION

4.1 Introduction

We have considered the financial analysis underlying the selection of the preferred bidders for the [REDACTED] and [REDACTED] lines in early May 2001. The selection of the preferred bidder on the [REDACTED] line appears, prima facie, to be supported by the 30 year analysis (for which only 7½ years are firm prices) which shows clear "headroom" between [REDACTED] and [REDACTED] and also between [REDACTED] and the PSC (however, see our earlier comments in Section 3.1). The selection of a preferred bidder on the [REDACTED] line is more contentious both between the bidders themselves and when compared with the PSC.

4.2 30 Years Assessment versus 7½ Year Assessment

As mentioned above, the project is for a 30 year concession period. However, the ISCs submitted by the bidders are only firm for the first 7½ year period.

The selection of [REDACTED] over [REDACTED] as the preferred bidder for [REDACTED] appears to have been based on the 7½ year analysis of the bids rather than the 30 year analysis. The position is set out in Appendix 12, which shows that [REDACTED] has a lower base price than [REDACTED] for both the 7½ year and the 30 year analysis. However, for the 7½ year analysis, [REDACTED] has a final evaluation price that is lower than that of [REDACTED]. This arises from the 7½ year fixed amount adjustments and the commercial and legal adjustment. Consequently the reasonableness of these adjustments is of great importance.

4.3 Fixed Amounts Adjustment

The fixed amounts adjustment is an estimate of the differences between the bids in respect of LUL's commitment to amounts payable from 7½ years for the remainder of the contract. The fixed amounts are based on the NPV of the future cashflows for debt, equity and tax (attributable to finance raised in the first 7½ period but to be paid from year 7½ to year 30).

4.3.1 Assumptions behind the adjustment

The assumption appears to be that the underlying cost to LUL of the contract from the 7½ year Review Period onwards would be similar for each bidder. However, the outstanding commitments of each bidder at that point would differ and would have to be recovered from LUL via future charges.

Prima facie, the adjustment is flawed because it considers only debt, equity and tax. Other differences in the projected balance sheets of bidders appear to have been ignored and could be material.

4.3.2 Basis of calculation

The nature of the calculation would appear to penalise a bidder who has planned a higher level of performance and who therefore may have incurred higher infrastructure costs which would be accompanied by higher levels of debt and equity. When all bids are adjusted to the 'normalised' level of performance, the equity holder's return would also reduce. For example, [REDACTED] at its own target performance level is achieving an [REDACTED] return on equity compared with a [REDACTED] equity return at the 'normalised' LUL target performance level⁵. However, the adjustment apparently has been calculated on the basis of the [REDACTED] equity return rather than the [REDACTED] effectively penalising [REDACTED].

4.3.3 LUL / LT Board Reports

We noted that the underlying nature of the fixed amounts adjustments was not described in the LUL / LT Board Reports. It is therefore harder for the reader to draw a conclusion as to which bidder is offering the best value over the 7½ year period. This is a notable omission in the [REDACTED] evaluation as the adjustment alters the outcome of the 7½ year competition.

4.4 Commercial Adjustments

As noted previously, in principle, the quantification of the contract qualifications made by bidders appears to be reasonable. However, the following points are worth noting:

- The significantly different amounts adjusted for the [REDACTED] bidders on [REDACTED] are particularly relevant in the context of the selection of the preferred bidder. The commercial adjustments amount to [REDACTED] of [REDACTED] adjusted 30 year price (pre-commercial adjustment) whereas they only amount to [REDACTED] of [REDACTED] equivalent adjusted price.
- As previously mentioned, the commercial adjustments have been calculated by taking the 95th percentile of the Monte Carlo simulation values. We have already stated that this appears to have been arbitrarily chosen. If a different percentile had been chosen, the gap between the two bidders could have been different. For example, if the 100th percentile values had been chosen (as shown in Appendices 15 and 16), the adjustment applied to both [REDACTED] and [REDACTED] would have been increased but it would have increased by a greater margin for [REDACTED] than for [REDACTED]. As a result, the gap between [REDACTED] and [REDACTED] would have reduced by [REDACTED].
- The whole of the commercial adjustment of the 30 year period has been applied to the 7½ year analysis even though there are clearly certain components that fall outside the 7½ year period.

⁵ Ref: 2 April 2001 [REDACTED] BAFO Financial Evaluation Report, [REDACTED]

- We understand that bidders were told that any qualifications they made to the contract would be quantified and would affect their evaluation. However, it appears that bidders were not fully consulted prior to preferred bidder selection to ensure that the quantification was appropriate.
- We believe that negotiations with bidders could have resulted in their being prepared to remove qualifications at zero cost or a lower cost than that estimated as the economic impact on LUL.
- Selection of a preferred bidder whilst a number of items remain unresolved significantly weakens the competitive tension and LUL's negotiating position.
- LUL have stated that there is a risk that in the case of [REDACTED] more compliant bid that it is "simply being compliant until the competitive process is complete and will attempt to raise further issues after selection of preferred bidder."⁶
- Bids which have a greater number of unresolved issues were price adjusted and also penalised on their ability to complete within the timetable (a non-financial consideration) – a double penalty.

Overall, it appears that the method used to quantify the contract qualifications favours [REDACTED] rather than [REDACTED]

4.5 Technical Adjustments

The selection of preferred bidders was made in May 2001 despite there being a significant number of outstanding technical issues that might impact the eventual ISCs agreed and the risk / reward balance between LUL and the bidders.

TfL have previously raised this as an issue and LUL stated that they considered that *'given the history of the negotiations on the remaining open issues, they felt that nothing would be gained by keeping open the competition; that a preferred bidder would provide momentum to move to closure'*⁷.

However, we noted in our review of the technical evaluation report that there were numerous outstanding technical issues still to be resolved at the point of selecting a preferred bidder. Not all of these outstanding issues were resolved in the BAFO evaluation report.

With regard to the [REDACTED] line in particular, the average adjustment per bidder of £[REDACTED] million⁸ is highly material to the difference between the total amount of the bids.

⁶ BAFO Final Evaluation Report, April 2001

⁷ Ref: 1 May 2001 Final Evaluation Report, (Amended and Extended), Page 79

⁸ This has been calculated by removing the offset impact from financial errors included in the technical costs adjustment

4.6 Summary of Issues relating to Preferred Bidder Selection

The financial aspects of the selection of Preferred Bidder are based upon significant adjustments to the bids as submitted. We identified many concerns regarding the quantum of these adjustments, and in some cases, the adoption of a different approach could lead to a financial preference for the losing bidder.

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EMERGING FINDINGS – APPENDICES

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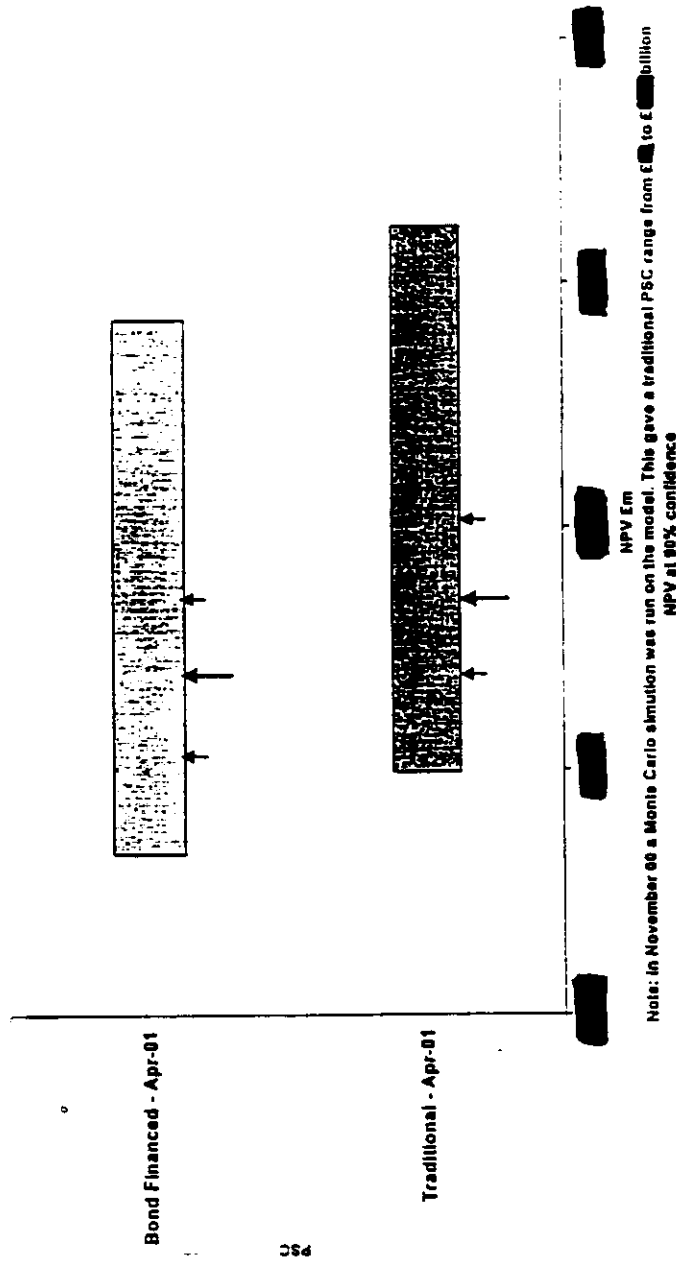
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PSC Values (excluding working capital) - April 2001 PSC 13



The bars in the graph above represent the total range from the Low case to the High case. Within these ranges, the first left hand arrow for each range is the 'Lower case', the larger middle arrow is the 'Base case' and the remaining right hand arrow is the 'Higher case'.

72

360