

Title: Economic advice and financial modelling for the PPP Arbiter

Date: 2008 – 2010

Client: OPPPA – Office of the PPP Arbiter

Country/Region: UK

CEPA staff have provided a range of economic advice and financial modelling support to the PPP Arbiter to support his preparation for the Periodic Review of Tubelines Ltd's PPP contract. This economic advice has helped to inform the Arbiter's view about the likely costs of running the infrastructure associated with the Jubilee, Northern and Piccadilly tube lines in London's Underground.

CEPA has provided support to the Arbiter throughout the process including at Initial Ranges Guidance and during the Reference for Guidance. This has included CEPA working together with the Arbiter and the PPP Parties (Tubelines Ltd and London Underground Ltd) to update our analysis, in light of Representations made by the Parties.

CEPA's specific tasks have fallen under the following areas:

- **Estimates for Administrative & Other costs.** CEPA has used a range of techniques including analysis from sector experts (for instance in the field of IT costs); top-down benchmarking analysis; analysis of data from regulated UK utilities; and trend analysis to provide the Arbiter with an estimate of the 'economic and efficient' Administrative & Other costs for the Notional Infraco over the second Review Period (RP2) and high-level estimates for the third and fourth Review Periods (RP3 & RP4).
- **Differential inflation.** As part of CEPA's economic advice we have provided the Arbiter with forecasts on the differential inflation projected over RP2. Differential inflation is the difference between the rate of inflation on the Notional Infraco's inputs and the general rate of inflation experienced by the general economy – reflected by RPIX.

The estimation of the differential inflation forecasts included: developing a baseline forecast for RPIX based on market analysts' forecasts; generating alternative scenarios to the baseline; categorising TLL's inputs; identifying appropriate indices for input prices; determining baseline forecasts for each input price index based on third-party forecasts; and combining the above results to arrive at a range of plausible forecasts for differential inflation.

- **Differential inflation risk amounts and differential inflation indexation.** Additional to the support on differential inflation forecasts CEPA has carried out analysis to help support the Arbiter's determination on the appropriate differential inflation risk amount over RP2, which included carrying out Monte Carlo analysis. CEPA has also provided advice on devising a conceptual framework for considering how to incorporate an indexation mechanism into the PPP contracts.
- **Efficiency savings.** CEPA has used a range of techniques including Tornqvist analysis, composite analysis using the EU KLEMS database and a comprehensive survey of determinations on efficiency savings made by UK regulators to estimate the potential frontier shift efficiency savings available to the Notional Infraco over RP2 and also to provide the Arbiter with high level estimates for RP3 and RP4.
- **Financial modelling support.** CEPA's modelling support has helped the PPP Arbiter to develop a refined view of Notional Infraco costs and a numerical comparison of Tube Lines and London Underground's assessment of costs to be incurred in the second review period of the PPP contract.

In terms of tasks, CEPA has:

- supported the development of the PPP Arbiter's cost model;
- overseen the population of the cost model;
- developed an assumptions booklet which details the source of all model inputs and any assumptions/adjustments made to create the model inputs;
- run sensitivities and variants to model inputs in the light of the PPP Arbiter's developing view of Notional Infraco costs; and
- overseen the population of the PPP Arbiter's Infrastructure Service Charge financial model (standard PPP/PFI financial model).

Links:

- [Office of the PPP Arbiter](#)