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Input Price Trends Summary Report

3 August 2007

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Introduction

- **Network Rail has engaged L.E.K. Consulting (International) Limited (“L.E.K.”) to refresh the 2006 study into the future trends in input prices**
- **The main objectives of the study are:**
 - **identifying the main labour, plant & materials inputs of Network Rail, identifying the key cost drivers in each supply market, explaining variations compared with historical trends, and identifying the impacts of supply constraints, and changes in constraints, within each supply market**
 - **building on this to develop forecasts of input price trends for Network Rail’s supply markets, forecast to 2013/14 both by category of purchase and in aggregate (i.e., weighted by the mix of Network Rail’s planned expenditure); and**
 - **developing a view of regional variations in these input price trends across Great Britain**
- **The study addresses renewal, enhancement and maintenance expenditure associated with the main asset types, namely, track, signalling, civils, estates, electrification and plant (E&P), telecoms and operational expenditure**
 - **the expenditure split for the main labour, plant & materials inputs of Network Rail in each supply market has been provided to us by Network Rail**
 - **overall expenditure is based on the 2007 Business Plan and ISBP baseline (published June 2006)**
- **Unless otherwise stated, the analysis assumes that in the forecast period the same industry structure and contractual mix are in place as at present**

Overview of the process and analytical method adopted for the report

Process	Analytical Method
<ul style="list-style-type: none"> ● Extensive consultation with Network Rail and market participants ● Feedback on 2006 report from Network Rail and the ORR has been incorporated in this update ● A list of major additional issues to be considered has been circulated within Network Rail and feedback has been incorporated in this report ● Interviews with 18 market participants on inflationary pressures augmented the understanding of past and future trends in inflation experienced by Network Rail ● Draft reports of the labour and materials sections were distributed to key personnel within Network Rail for consultation ● feedback has been received and addressed either in the report or directly with the interested party, as appropriate ● In addition, the ORR were consulted to identify any issues from their perspective 	<ul style="list-style-type: none"> ● Inflation forecasts have been determined for each major category of expenditure in each asset class and based on the following: <ul style="list-style-type: none"> - third party forecasts, where available - continuation of historical trends - estimation based on market commentary or Network Rail data ● In total, c.30 independent inflation forecasts have been produced ● Major infrastructure projects have been assessed to determine their impact on inflation <ul style="list-style-type: none"> - specific inflation overlays were added for the 2012 Olympics and National Grid planned work - no incremental inflation has been included due to the increase in Network Rail's future workload to deliver the enhancements programme ● Forecasts for each asset class were then weighted by the asset class expenditures provided by Network Rail to obtain an overall forecast ● Regional variations in labour inflation have then been calculated by determining historical regional relationships, and apportioning the regional impact of major projects (e.g., 2012 Olympics)

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L.E.K. has determined Network Rail input price inflation as a premium over RPI

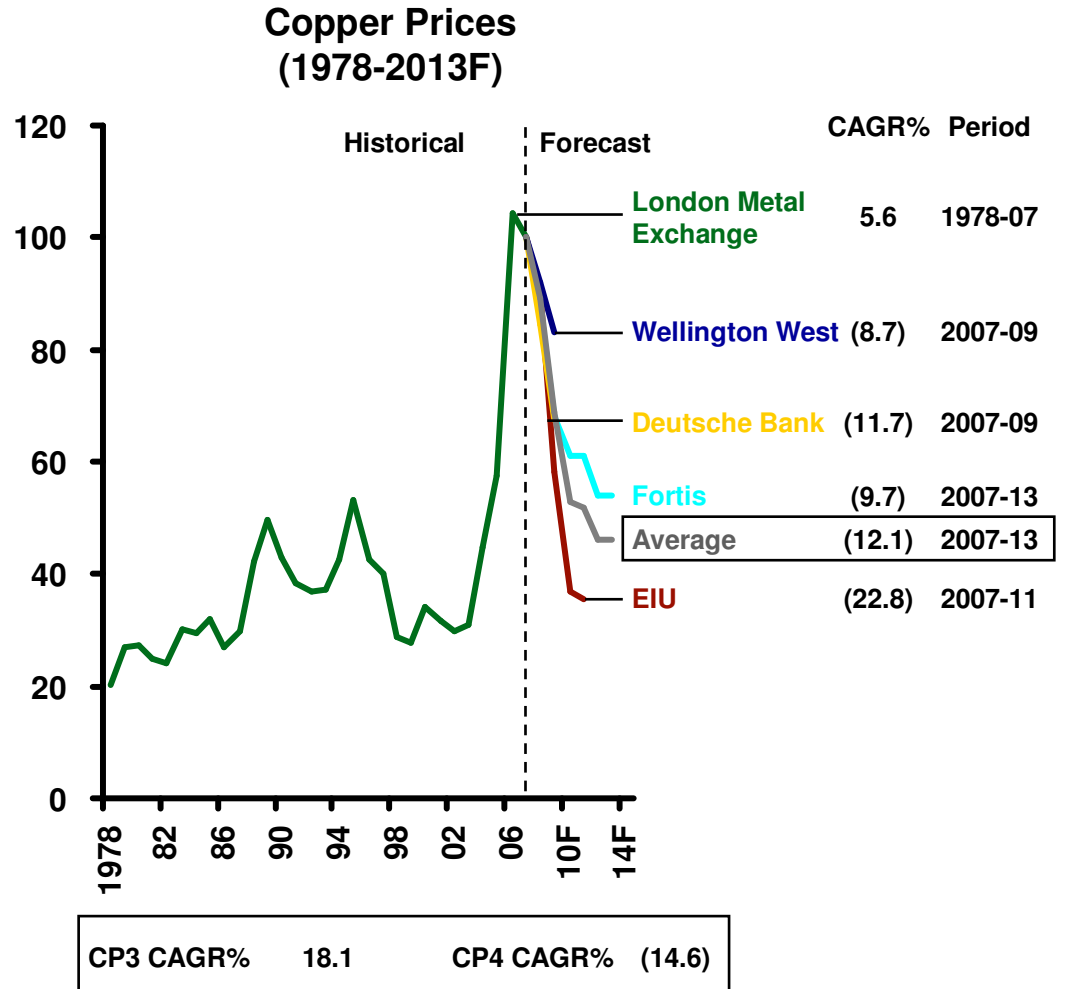
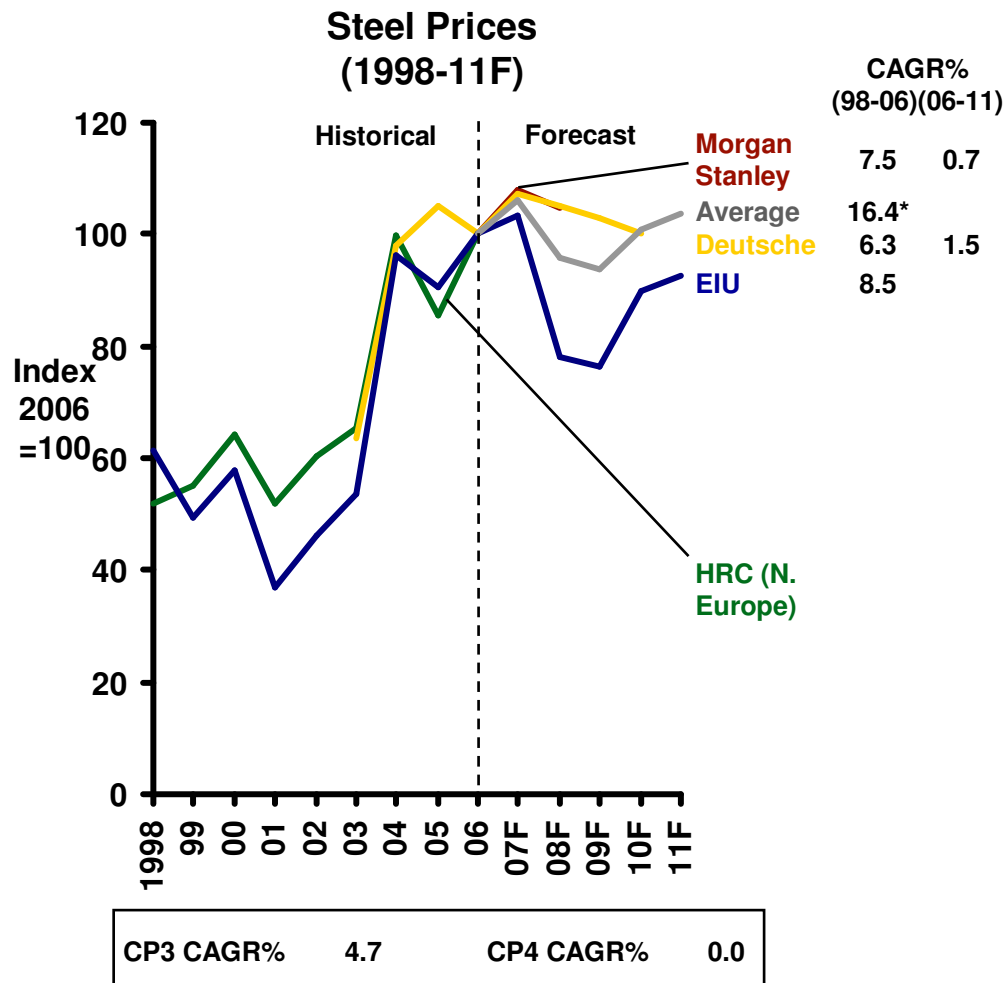
- In a competitive market, a relationship commonly presented is that output (e.g., consumer) inflation is equal to input price inflation minus the increase in factor productivity (i.e. RPI is usually lower than input price inflation)
- Because Network Rail will be explicitly targeted on efficiency savings (productivity), it is necessary to adjust an output inflation allowance (based, e.g., on RPI) for the constituent element of factor productivity, to avoid double counting the efficiency saving target
- In addition, a consumer-based output inflation measure such as RPI does not reflect the same input market mix as Network Rail's activities, which would be expected to give rise to a differential rate of experienced inflation. Whilst changes in mix and constituent inflation rates may cause this differential to vary over time, a fixed premium represents a simple and pragmatic approximation in the absence of a more appropriate base inflation measure
- Our calculated premium over RPI takes account of both of these analytical requirements

The inflationary impact of the Olympics has been considered in this study, informed by independent estimates of the impact published in recent months

	Price inflation due to the 2012 Olympics			
	Overall Inflationary Impact on CP4 CAGR	Timing of Impact	Industry Affected	Geography Affected
Deloitte	0.4% - 0.6% p.a.	2007-2010	Construction industry including infrastructure	London Area, generally assumes ability to increase labour supply
EC Harris	0.8% - 1.2% p.a.	Mid 2007 to 2012	Construction industry including infrastructure	London and Southeast
Davis Langdon	0.4% - 0.8% p.a.	2008 to 2010	New constructions including infrastructure	Impact on London; impact on the rest of the country is unclear
L.E.K. estimate	0.7% p.a. overall (median case)	2008/09 to 2010/11	Construction infrastructure and Railway	South East (0.6% in GB overall including secondary impact in other territories)

- In general, third party reports discuss 2012 Olympics inflation in terms of London/South East only rather than a national impact, however, it is improbable that wages increases in the South East area will not attract labour from other areas thereby tightening other local labour markets
- The L.E.K. estimate of 0.7% p.a. incremental inflation (overall) in the South East assumes no additional inflation on materials and includes a secondary impact of the 2012 Olympics beyond the South East, which raises overall inflation by 0.6% p.a. in GB (CP4 CAGR)
 - this is equivalent to (and derived from) incremental labour inflation of 1.2% in the South East, 0.4% p.a. in other Network Rail territories, and 1.0% p.a. in GB overall

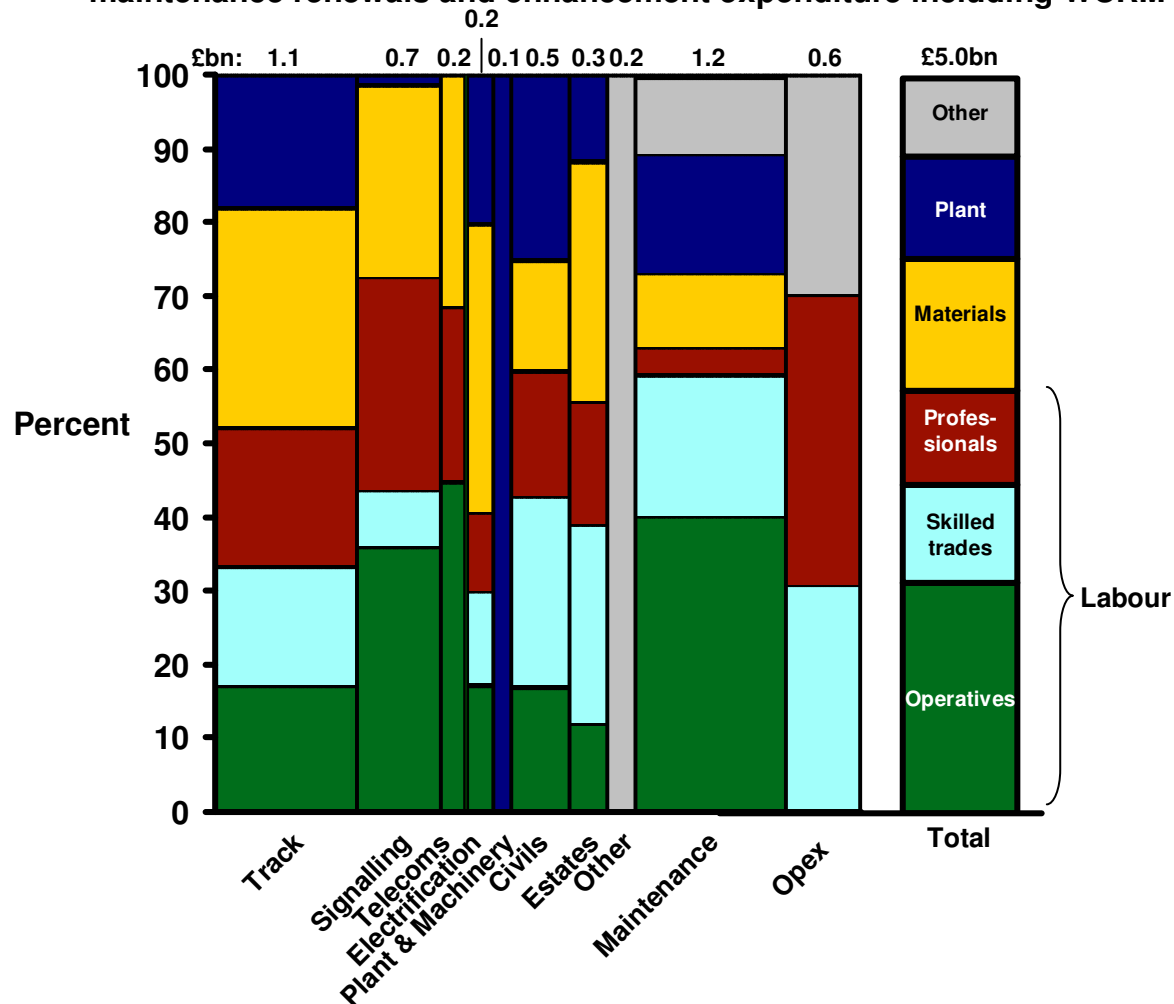
Steel and copper prices have increased sharply in recent years. Market forecasts expect copper prices to decline, and steel prices to remain at a high level



Note : * CAGR% 2003-06
 Source : EIU; Morgan Stanley; Deutsche Bank; Economist Intelligence Unit; L.E.K. Analysis

The inflation forecasts have been weighted on the basis of an estimated expenditure split to develop an overall inflation forecast

Estimated split of Network Rail's 2006/07 controllable opex, maintenance renewals and enhancement expenditure including WCRM



- Each of the boxes in the diagram represents one category of spend for which an inflation forecast has been developed, although in some cases we have examined a more detailed split
- Network Rail's management information does not provide an accurate split of expenditure within asset categories between labour, plant and materials
 - approximate splits were developed by Network Rail for the purpose of this project
- Together, these splits provide the weighting for estimating an overall inflation forecast for Network Rail's expenditure

Our median forecast is for a 1.0% input price premium to RPI

	CAGR including RPI (ppt)		CAGR relative to RPI (ppt)			Comments
	Historical	CP4	Historical	CP4		
Labour (61%)	4.1	3.0 4.9 7.5	1.4	0.2 2.1 4.6	Low Median High	<ul style="list-style-type: none"> The historical premium over RPI used to forecast labour categories averages 1.1% (see p13) The 2012 Olympics is expected to add c.1.0% to labour inflation during CP4 (0.6% to total inflation during CP4)
Materials, Plant and Other (39%)	3.0	(0.2) 1.9 4.1	0.3	(2.9) (0.8) 1.3	Low Median High	<ul style="list-style-type: none"> Materials deflation (relative to RPI) is mainly driven by an expected decrease in copper and technology equipment prices
Total (100%)	3.7	1.7 3.8 6.2	1.0	(1.0) 1.0 3.3	Low Median High	<ul style="list-style-type: none"> Overall, given the inflationary pressures from labour and forecast copper and technology equipment price falls, our median forecast is for input price inflation very similar to the historical rate of c.1% relative to RPI

Summary of Labour inflation rates relative to RPI

	CP4 Average Weightings (%)	Historical Average Inflation	CAGR% CP4
Relative to RPI			
Track	10%	1.1	L 0.1 Med 2.0 H 4.5
Signalling	10%	2.8	L 0.8 Med 2.5 H 5.1
Telecoms	2%	1.0	L (0.2) Med 1.7 H 4.2
Electrification	1%	1.0	L 0.1 Med 2.0 H 4.2
Plant and machinery	n/a	n/a	L n/a Med n/a H n/a
Civils	6%	1.0	L (0.0) Med 2.0 H 4.5
Estates	4%	1.1	L 0.0 Med 2.0 H 4.6
Other R&E	n/a	n/a	L n/a Med n/a H n/a
Maintenance	17%	1.0	L (0.0) Med 1.9 H 4.4
Opex	11%	1.7	L 0.4 Med 2.3 H 4.6
Total Labour	61%	1.4	L 0.2 Med 2.1 H 4.6

- Forecasts for labour are mainly based on the observed average historical inflation as reported by ONS and corroborated by market commentary
- Signalling labour has experienced a high average premium over RPI mainly due to tight market conditions
 - this premium has been forecast to decrease only slightly during CP4
- During CP4 Network Rail is expected to experience a significant level of labour inflation, mainly due to the 2012 Olympics
 - track, signalling, civil, estates, and maintenance will be affected by the 2012 Olympics
 - other asset categories will be affected to a lesser extent
- National Grid's upgrade works are expected to influence the specific electrification market
 - an overlay for this has been included in the electrification labour categories
- Operational expenses includes signallers for whom inflation is forecast using the historical average premium to RPI
 - other grades of Network Rail staff such as project managers and planners are forecast to experience some 2012 Olympics premium

Summary of Materials, Plant and Other inflation rates relative to RPI

	CP4 Average Weightings (%)	Historical Average Inflation		CAGR% CP4
Relative to RPI				
Track	9%	2.3	L Med H	(3.0) (0.0) 3.0
Signalling	4%	1.6	L Med H	(8.9) (4.9) (0.9)
Telecoms	1%	(2.9)	L Med H	(2.8) (1.5) (0.2)
Electrification	2%	3.6	L Med H	(5.0) (2.1) 0.8
Plant and machinery	2%	(0.8)	L Med H	(1.4) (0.1) 1.2
Civils	4%	0.8	L Med H	(2.0) (0.4) 1.3
Estates	3%	0.2	L Med H	(1.9) (0.4) 1.1
Other R&E	2%	(4.4)	L Med H	(4.2) (3.1) (2.0)
Maintenance	8%	1.0	L Med H	(2.0) (0.1) 1.7
Opex	4%	0.0	L Med H	(0.5) 0.0 0.5
Total Materials, Plant and Other	39%	0.4	L Med H	(2.9) (0.8) 1.3

- **Materials forecasts have generally been prepared using third party forecasts**
 - **when such forecasts were not available, the trend relative to RPI has been used**
- **A forecast slowdown in inflation for materials is mainly driven by deflationary expectations for copper and technology equipment**

Summary inflation table with relative weightings for labour and materials, plant and other

	Labour to Materials, Plant and Other CP4 average split %		Labour CAGR% CP4	Materials, Plant and Other CAGR% CP4	Total CAGR% CP4
Relative to RPI					
Track	52 : 48	L Med H	0.1 2.0 4.5	(3.0) (0.0) 3.0	(1.4) 1.0 3.8
Signalling	73 : 27	L Med H	0.8 2.5 5.1	(8.9) (4.9) (0.9)	(1.8) 0.5 3.5
Telecoms	69 : 31	L Med H	(0.2) 1.7 4.2	(2.8) (1.5) (0.2)	(1.0) 0.7 2.9
Electrification	40 : 60	L Med H	0.1 2.0 4.2	(5.0) (2.1) 0.8	(2.9) (0.4) 2.2
Plant and machinery	- : 100	L Med H	n/a n/a n/a	(1.4) (0.1) 1.2	(1.4) (0.1) 1.2
Civils	60 : 40	L Med H	(0.0) 2.0 4.5	(2.0) (0.4) 1.3	(0.8) 1.0 3.2
Estates	56 : 44	L Med H	0.0 2.0 4.6	(1.9) (0.4) 1.1	(0.8) 1.0 3.0
Other R&E	- : 100	L Med H	n/a n/a n/a	(4.2) (3.1) (2.0)	(4.2) (3.1) (2.0)
Maintenance	68 : 32	L Med H	(0.0) 1.9 4.4	(2.0) (0.1) 1.7	(0.6) 1.3 3.6
Opex	70 : 30	L Med H	0.4 2.3 4.6	(0.5) 0.0 0.5	0.1 1.6 3.4
Total	61 : 39	L Med H	0.2 2.1 4.6	(2.9) (0.8) 1.3	(1.0) 1.0 3.3

Regional forecast analysis summary

Construction wages Relative to RPI	Construction wages historical CAGR% (1980/81 – 05/06)	Difference from national average
North East	1.1%	(0.5%)
Yorkshire and the Humber	1.6%	(0.1%)
East Midlands	1.5%	(0.2%)
East of England	2.0%	0.4%
South East	2.2%	0.5%
South West	1.1%	(0.6%)
West Midlands	1.5%	(0.1%)
North West	1.8%	0.1%
Wales	1.2%	(0.5%)
Scotland	1.4%	(0.2%)
London	2.7%	1.0%
GB	1.6%	-



Labour Inflation Forecast

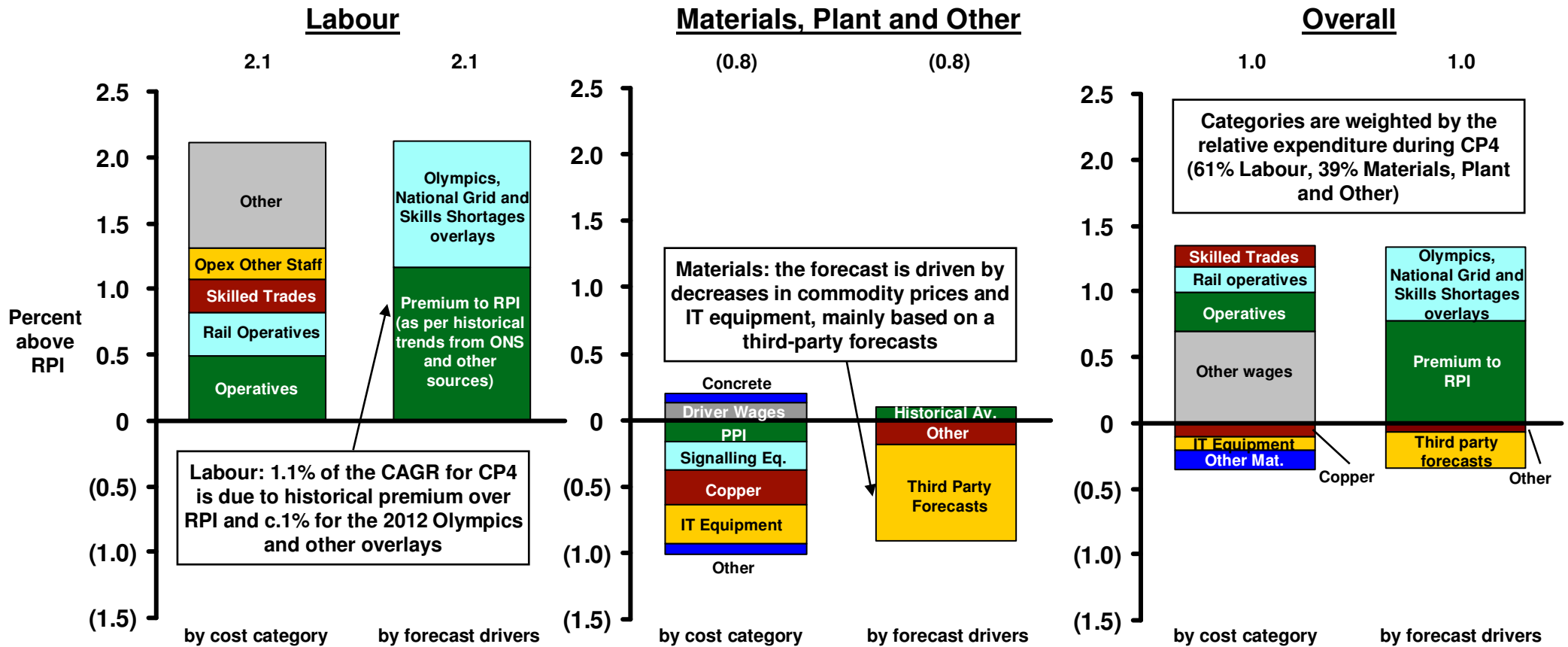
CAGR% CP4

Relative to RPI		
London North East	L	(0.0)
	Med	1.9
	H	4.4
London North West	L	(0.0)
	Med	1.9
	H	4.4
South East	L	1.1
	Med	3.0
	H	5.5
Western	L	(0.3)
	Med	1.6
	H	4.0
England and Wales	L	0.2
	Med	2.2
	H	4.7
Scotland	L	(1.2)
	Med	0.8
	H	3.2
GB	L	0.2
	Med	2.1
	H	4.6

- Similarly to the 2006 work, we have identified the historical relationship between regional construction wages and regional GDP (NUTS regions)
- Based on forecasts of regional GDP, we have been able to assess the relative trends in regional wages. Forecast wage rises vary between the territories from 0.9% above the national average for South East to 0.6% below for Western
- These variations have been applied equally to all Network Rail labour categories and have been redistributed to the Network Rail territories. The table above right shows the results of applying these variations to the CP4 labour inflation forecast

Analysis of the CP4 CAGR premium over RPI by constituent parts

Sources for Inflation - Relative to RPI
(CP4: 2008/09-13/14)



Network Rail’s ability to influence input price inflation depends on its level of purchasing power in each sector

Network Rail’s purchasing power	Proportion of expenditure (%) 2006-07 split	Example categories	Median inflation forecast 2007/08-13/14
High	20	Signallers, rail operatives	4.6
Medium	4	Signalling designers, telecom engineers	5.0
Low	45	Operatives, project managers	4.7
None	31	Copper, utilities	1.3

- An efficient network operator should be able to manage input price inflation in the sectors where it has high purchasing power
- In the medium to long term, such management of input price inflation ought to be able to prevent inflation being higher than observed in competitive markets
 - achieving inflation below these levels may be possible in the short term but the supply market will need to be able to continue to invest and recruit and so such short term wins would be expected to be unsustainable in the medium to long term
- Network Rail’s expenditure is spread across a very wide range of input sectors. We have categorised the expenditure according to a view of Network Rail’s level of purchasing power and then summarised the inflation forecasts in these terms
- The median inflation forecast for categories where Network Rail has high purchasing power is similar to the median forecast where Network Rail’s purchasing power is lower, consistent with these expectations

Variance analysis of differences in forecast between 2006 and 2007 (this) input price studies

	<u>05/06-06/07 annual inflation</u>	<u>CP4 CAGR</u>	<u>Comments</u>
2006 Study: Overall Premium above RPI	0.8 (<i>f – 2006</i>)	1.2 (<i>f – 2006</i>)	
Updated Historical Labour Premia	(0.1)	0.1	<ul style="list-style-type: none"> ● Historical premia have been updated based on new inflation data from ONS and other sources and updated analyses of these
Updated Material and Plant Forecasts	0.5	(0.1)	<ul style="list-style-type: none"> ● Additional inflation experienced due to changes in commodity prices (for 06/07) or material prices forecasts
Expenditure Mix Changes	0.1	(0.2)	<ul style="list-style-type: none"> ● Changes due to the different forecast mix of Network Rail's expenditure used in 2006 and 2007
2007: Overall Premium above RPI	1.3 (<i>a – 2007</i>)	1.0 (<i>f – 2007</i>)	

Comparison between inflation expected to be experienced over CP3 and CP4

		Labour		Materials, Plant and Other		Total	
		CAGR% CP3	CAGR% CP4	CAGR% CP3	CAGR% CP4	CAGR% CP3	CAGR% CP4
Relative to RPI							
Track	L	0.5	0.1	0.7	(3.0)	0.7	(1.4)
	Med	1.0	2.0	1.5	(0.0)	1.4	1.0
	H	1.7	4.5	2.3	3.0	2.1	3.8
Signalling	L	1.1	0.8	2.5	(8.9)	1.6	(1.8)
	Med	1.5	2.5	3.6	(4.9)	2.2	0.5
	H	2.2	5.1	4.7	(0.9)	3.0	3.5
Telecoms	L	0.2	(0.2)	(1.8)	(2.8)	(0.4)	(1.0)
	Med	0.7	1.7	(1.5)	(1.5)	(0.0)	0.7
	H	1.3	4.2	(1.2)	(0.2)	0.5	2.9
Electrification	L	1.0	0.1	4.5	(5.0)	3.2	(2.9)
	Med	1.5	2.0	5.2	(2.1)	3.9	(0.4)
	H	2.1	4.2	6.0	0.8	4.5	2.2
Plant and machinery	L	n/a	n/a	(0.4)	(1.4)	(0.4)	(1.4)
	Med	n/a	n/a	0.0	(0.1)	0.0	(0.1)
	H	n/a	n/a	0.5	1.2	0.5	1.2
Civils	L	0.5	(0.0)	(0.4)	(2.0)	0.1	(0.8)
	Med	1.0	2.0	0.1	(0.4)	0.6	1.0
	H	1.6	4.5	0.5	1.3	1.2	3.2
Estates	L	0.5	0.0	0.3	(1.9)	0.4	(0.8)
	Med	1.1	2.0	0.5	(0.4)	0.8	1.0
	H	1.8	4.6	0.8	1.1	1.4	3.0
Other R&E	L	n/a	n/a	(3.1)	(4.2)	(3.1)	(4.2)
	Med	0.0	n/a	(2.8)	(3.1)	(2.8)	(3.1)
	H	n/a	n/a	(2.4)	(2.0)	(2.4)	(2.0)
Maintenance	L	0.3	(0.0)	0.4	(2.0)	0.4	(0.6)
	Med	0.8	1.9	0.9	(0.1)	0.9	1.3
	H	1.5	4.4	1.4	1.7	1.5	3.6
Opex	L	1.5	0.4	(0.2)	(0.5)	1.0	0.1
	Med	2.1	2.3	0.0	0.0	1.5	1.6
	H	2.9	4.6	0.2	0.5	2.1	3.4
Total	L	0.7	0.2	0.4	(2.9)	0.6	(1.0)
	Med	1.2	2.1	1.0	(0.8)	1.1	1.0
	H	1.9	4.6	1.5	1.3	1.7	3.3

Summary of findings

- Our forecast is for Network Rail to experience an overall compound annual inflation rate of between 1.7% and 6.2% in CP4 (2009/10 to 2013/14), equating to between (1.0)% and 3.3% over forecast RPI with a median case of 1.0% above RPI
 - labour, which accounts for 61% of Network Rail's total expenditure, is expected to experience a compound annual inflation rate of between 3.0% and 7.5% (equating to between 0.2% and 4.6% p.a. above RPI) with a median case of 2.1% above RPI
 - materials, plant and other expenditures, which account for 39% of expenditure, are expected to experience a compound annual inflation rate of between (0.2)% and 4.1% (equating to between (2.9)% and 1.3% p.a. relative to RPI), with a median case of (0.8%) relative to RPI
- The overall premium to RPI forecast is largely supported either by independent forecasts or by the use of historical data to calculate the historical premium to RPI which are forecast to continue
 - c. (0.7)% of the material, plant and other inflation relative to RPI of (0.8)% (net) is accounted for by independent forecasts
- Our forecast of incremental inflation due to the 2012 Olympics (c. 0.7% p.a. impact on CP4 overall in the South East) is within the range of independent forecasts
- Although Network Rail operates in a number of sectors as the principal buyer in that market, e.g., in signalling and track related industries, the majority of its expenditure is subject to inflationary pressures outside its control
 - c. 18-20% of expenditure is in sectors where Network Rail has considerable control over inflationary pressures (e.g., by being able to manage industry demand through controlling and planning the profile of work)
 - c. 80% of expenditure is in sectors where Network Rail is a minority buyer and where its expenditure is subject to external inflationary pressures
 - excluding commodity markets, our forecast inflation rates are not materially different between these two types of sector
- The forecast premium to RPI for CP4 of 1.0% is c. 0.2% lower than our June 2006 forecast, reflecting small net changes in labour, material and plant forecasts, and changes in mix of Network Rail's forecast expenditure

Appendix – Summary of inflation forecast – by forecast categories (1 of 3)

Labour	Expenditure (£m)	07/08	08/09	09/10	10/11	11/12	12/13	13/14	CP4 CAGR
		L Med H	L Med H	L Med H	L Med H	L Med H	L Med H	L Med H	
Civil Engineers	332								
Track / Maintenance	244	1.0 - 1.5 - 1.9	0.0 - 2.0 - 4.9	1.0 - 2.9 - 5.9	1.0 - 2.9 - 5.9	0.0 - 2.0 - 4.9	(1.0) - 1.0 - 2.9	(1.0) - 1.0 - 2.9	0.0 - 2.0 - 4.5
Civils / Estates	88	1.5 - 1.9 - 2.4	1.0 - 3.0 - 5.9	1.0 - 2.9 - 5.9	1.0 - 2.9 - 5.9	0.0 - 2.0 - 4.9	(1.0) - 1.0 - 2.9	(1.0) - 1.0 - 2.9	0.0 - 2.0 - 4.5
Planners and Project Managers	327								
Estates / Civils / Signalling / Opex	327	3.1 - 4.6 - 6.5	1.7 - 4.6 - 8.6	1.7 - 4.6 - 8.5	1.7 - 4.6 - 8.5	(0.3) - 1.7 - 3.6	(0.3) - 1.7 - 3.6	(0.3) - 1.7 - 3.6	0.5 - 2.9 - 5.6
Skilled Trades	648								
Track / Signalling / Maintenance	451	0.9 - 1.3 - 1.8	(0.1) - 1.9 - 4.8	0.9 - 2.8 - 5.8	0.9 - 2.8 - 5.7	(0.1) - 1.8 - 4.8	(1.1) - 0.9 - 2.8	(1.1) - 0.9 - 2.8	(0.1) - 1.8 - 4.4
Civils / Estates	197	1.3 - 1.8 - 2.3	0.9 - 2.8 - 5.8	0.9 - 2.8 - 5.8	0.9 - 2.8 - 5.7	(0.1) - 1.8 - 4.8	(1.1) - 0.9 - 2.8	(1.1) - 0.9 - 2.8	(0.1) - 1.8 - 4.4
Rail Operatives	425								
Track / Maintenance	425	1.2 - 1.7 - 2.2	0.3 - 2.2 - 5.2	1.3 - 3.2 - 6.1	1.2 - 3.2 - 6.1	0.3 - 2.2 - 5.1	(0.7) - 1.2 - 3.2	(0.7) - 1.2 - 3.2	0.3 - 2.2 - 4.7
Operatives	714								
Signalling / Civils / Estates / E&P/ Telecoms / Maintenance	714	0.5 - 1.0 - 1.5	0.0 - 2.0 - 4.9	1.0 - 3.0 - 5.9	1.0 - 3.0 - 5.9	0.0 - 2.0 - 4.9	(0.9) - 1.0 - 2.9	(0.9) - 1.0 - 2.9	0.0 - 2.0 - 4.5
Telecom Engineers	46								
Telecoms	46	0.4 - 0.8 - 1.3	(0.1) - 1.8 - 4.8	(0.1) - 1.8 - 4.7	(0.1) - 1.8 - 4.7	(1.1) - 0.8 - 3.8	(1.1) - 0.8 - 2.8	(1.1) - 0.8 - 2.8	(0.7) - 1.2 - 3.8
OHL Linemen	27								
E&P	27	1.5 - 2.0 - 2.5	1.1 - 3.0 - 5.0	1.1 - 3.0 - 5.0	1.1 - 3.0 - 4.9	1.0 - 3.0 - 4.9	(0.9) - 1.0 - 3.0	(0.9) - 1.0 - 3.0	0.3 - 2.2 - 4.2
Electrical Engineers	23								
E&P	23	1.1 - 1.6 - 2.1	0.7 - 2.6 - 4.6	0.7 - 2.6 - 4.6	0.7 - 2.6 - 4.6	0.7 - 2.6 - 4.6	(1.3) - 0.7 - 2.6	(1.3) - 0.7 - 2.6	(0.1) - 1.8 - 3.8
Signalling Designers	96								
Signalling	96	1.6 - 2.0 - 2.5	5.4 - 5.8 - 8.8	4.0 - 5.0 - 7.9	3.8 - 4.7 - 7.6	3.0 - 4.0 - 6.9	1.3 - 3.2 - 5.2	0.6 - 2.5 - 4.4	2.5 - 3.9 - 6.4
Signalling Testers	48								
Signalling	48	0.9 - 1.4 - 1.8	4.0 - 4.5 - 7.4	2.8 - 3.7 - 6.7	2.5 - 3.5 - 6.4	2.1 - 3.1 - 6.0	0.9 - 2.8 - 4.8	0.6 - 2.5 - 4.4	1.8 - 3.1 - 5.7
Signallers	188								
Opex	188	1.0 - 1.5 - 2.0	1.0 - 1.5 - 3.5	0.5 - 1.5 - 3.5	0.5 - 1.5 - 3.4	0.5 - 1.5 - 3.4	(0.4) - 1.5 - 3.4	(0.4) - 1.5 - 3.4	0.1 - 1.5 - 3.4

Appendix – Summary of inflation forecast – by forecast categories (2 of 3)

Materials and Other	Expenditure (£m)	07/08			08/09			09/10			10/11			11/12			12/13			13/14			CP4 CAGR		
		L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H			
General Operatives	15																								
Labour component of concrete sleepers	15	(0.2) - 1 - 2.2			(0.2) - 1 - 2.2			(0.7) - 1.0 - 2.7			(0.7) - 1.0 - 2.7			(0.7) - 1.0 - 2.7			(1.4) - 1.0 - 3.4			(1.4) - 1.0 - 3.4			(1.0) - 1.0 - 3.0		
Average Annual Earnings Index	49																								
Labour component of freight	49	(0.9) - 0.0 - 1.0			0.1 - 1.1 - 2.1			(0.1) - 0.9 - 1.9			(0.1) - 0.9 - 1.9			(0.2) - 0.8 - 1.8			(0.2) - 0.7 - 1.7			(0.2) - 0.7 - 1.7			(0.2) - 0.8 - 1.8		
Steel	250																								
Rail, steel sleepers and component of various materials	250	(2.8) - 2.0 - 6.8			(16.5) - (11.6) - (6.7)			(11.3) - (4.5) - 2.4			(2.3) - 4.5 - 11.3			(6.6) - 0.2 - 7.0			(9.6) - 0.1 - 9.8			(9.6) - 0.1 - 9.8			(8.0) - 0.0 - 8.0		
Concrete used for Construction	54																								
Concrete and component of concrete sleepers	54	0.5 - 1.4 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4			0.5 - 1.5 - 2.4		
Aggregates	33																								
Aggregates	33	(3.5) - (3.0) - (2.5)			1.7 - 2.2 - 2.7			(1.9) - (1.4) - (1.0)			(2.2) - (1.7) - (1.2)			(2.3) - (1.8) - (1.3)			(2.3) - (1.9) - (1.4)			(2.4) - (1.9) - (1.4)			(2.2) - (1.7) - (1.3)		
Ballast	43																								
Ballast	43	(3.3) - (2.8) - (2.3)			1.9 - 2.4 - 2.9			(1.8) - (1.3) - (0.8)			(2.0) - (1.5) - (1.1)			(2.1) - (1.6) - (1.1)			(2.2) - (1.7) - (1.2)			(2.2) - (1.7) - (1.2)			(2.0) - (1.6) - (1.1)		
RPI	372																								
Component of concrete sleepers, freight, OHL and third rail materials, and "other"	372	(1.9) - 0.0 - 1.9			(2.0) - 0.0 - 2.0			(2.0) - 0.0 - 2.0			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9		
Construction Material	285																								
General construction materials	285	(2.1) - (1.6) - (1.1)			0.1 - 0.6 - 1.1			(1.1) - (0.2) - 0.8			(1.5) - (0.5) - 0.4			(1.6) - (0.6) - 0.4			(3.1) - (0.7) - 1.8			(3.1) - (0.7) - 1.7			(2.1) - (0.5) - 1.0		
Signalling Materials	59																								
General signalling materials	59	(5.0) - (4.0) - (3.1)			(3.3) - (2.3) - (1.3)			(3.5) - (2.5) - (1.5)			(3.8) - (2.8) - (1.8)			(3.8) - (2.9) - (1.9)			(3.9) - (2.9) - (1.9)			(3.9) - (3.0) - (2.0)			(3.8) - (2.8) - (1.8)		
Copper	49																								
Copper and component of OHL, point heaters and third rail	49	(10.1) - (5.3) - (0.5)			(18.1) - (13.2) - (8.3)			(30.8) - (23.9) - (17.1)			(31.9) - (25.1) - (18.3)			(11.7) - (4.9) - 1.9			(23.3) - (13.6) - (3.9)			(12.6) - (2.8) - 6.9			(22.5) - (14.6) - (6.6)		
Telecoms Equipment	26																								
General telecoms equipment	26	(5.7) - (4.8) - (3.8)			(3.6) - (2.7) - (1.7)			(3.4) - (2.4) - (1.4)			(3.6) - (2.7) - (1.7)			(3.7) - (2.7) - (1.8)			(3.8) - (2.8) - (1.8)			(3.8) - (2.8) - (1.9)			(3.7) - (2.7) - (1.7)		
Utilities	44																								
Utilities	44	(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.1			(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.0			(0.9) - 0.1 - 1.0		
IT Equipment	74																								
Signalling and General IT equipment	74	(10.7) - (10.2) - (9.7)			(12.9) - (12.5) - (12.0)			(13.1) - (12.1) - (11.2)			(13.0) - (12.1) - (11.1)			(13.1) - (12.1) - (11.1)			(14.1) - (12.2) - (10.2)			(14.1) - (12.2) - (10.3)			(13.5) - (12.1) - (10.8)		
Telecoms	78																								
General telecoms materials	78	(0.8) - (0.3) - 0.2			(0.9) - 1.1 - 3.0			(0.5) - 1.4 - 3.4			(0.6) - 1.3 - 3.3			(1.3) - 0.6 - 2.6			(1.8) - 0.2 - 2.1			(1.8) - 0.1 - 2.1			(1.2) - 0.7 - 2.7		
Fixed Zero Inflation	8																								
Component of concrete sleepers	8	(5.1) - (3.9) - (2.7)			(3.4) - (2.2) - (1.0)			(4.1) - (2.4) - (0.7)			(4.4) - (2.7) - (1.0)			(4.4) - (2.7) - (1.0)			(5.2) - (2.8) - (0.4)			(5.3) - (2.8) - (0.4)			(4.7) - (2.7) - (0.7)		

Appendix – Summary of inflation forecast – by forecast categories (3 of 3)

Plant	Expenditure (£m)	07/08			08/09			09/10			10/11			11/12			12/13			13/14			CP4 CAGR		
		L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H	L	Med	H
Driver Wages	237																								
Labour component of plant	237	0.4 - 0.9 - 1.3			(0.1) - 1.9 - 3.8			0.9 - 2.8 - 4.8			0.9 - 2.8 - 4.8			(0.1) - 1.8 - 3.8			(1.1) - 0.9 - 2.8			(1.1) - 0.9 - 2.8			(0.1) - 1.8 - 3.8		
PPI	398																								
Capital and maintenance cost components of plant	398	(2.4) - (1.4) - (0.4)			(0.9) - 0.1 - 1.0			(1.7) - (0.7) - 0.2			(2.2) - (1.2) - (0.2)			(2.2) - (1.3) - (0.3)			(2.3) - (1.3) - (0.4)			(2.3) - (1.4) - (0.4)			(2.2) - (1.2) - (0.2)		
RPI	11																								
Fuel in plant	11	(1.9) - 0.0 - 1.9			(2.0) - 0.0 - 2.0			(2.0) - 0.0 - 2.0			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9			(1.9) - 0.0 - 1.9		
E&P Plant	44																								
E&P Plant	44	(1.3) - (0.5) - 0.4			(5.7) - (4.4) - (3.1)			(4.6) - (3.2) - (1.9)			(1.7) - (0.4) - 1.0			(1.3) - 0.1 - 1.4			(2.3) - (0.9) - 0.4			(1.4) - (0.1) - 1.3			(2.3) - (0.9) - 0.4		

Appendix – Summary of weightings – by forecast categories (1 of 2)

Labour	CP4 CAGR Relative to RPI L - Med - H	Track Weight	Signalling Weight	Telecoms Weight	Electrification Weight	Plant & Mach. Weight	Civils Weight	Estates Weight	Other R&E Weight	Maintenance Weight	Opex Weight
Civil Engineers	0.0 - 2.0 - 4.5	36%					23%	15%		5%	
Planners and Project Managers	0.5 - 2.9 - 5.6		10%				5%	15%			56%
Skilled Trades	(0.1) - 1.8 - 4.4	31%	10%				43%	49%		31%	
Rail Operatives	0.3 - 2.2 - 4.7	33%								32%	
Operatives	0.0 - 2.0 - 4.5		50%	66%	43%		29%	21%		32%	
Telecom Engineers	(0.7) - 1.2 - 3.8			34%							
OHL Linemen	0.3 - 2.2 - 4.2				31%						
Electrical Engineers	(0.1) - 1.8 - 3.8				26%						
Signalling Designers	2.5 - 3.9 - 6.4		20%								
Signalling Testers	1.8 - 3.1 - 5.7		10%								
Signallers	0.1 - 1.5 - 3.4										44%
CP4 Labour Relative to RPI CAGR	L Med H	0.1 2.0 4.5	0.8 2.5 5.1	(0.2) 1.7 4.2	0.1 2.0 4.2	n/a n/a n/a	(0.0) 2.0 4.5	0.0 2.0 4.6	n/a n/a n/a	(0.0) 1.9 4.4	0.4 2.3 4.6

Appendix – Summary of weightings – by forecast categories (2 of 2)

Materials, Plant and Other	CP4 CAGR Relative to RPI L - Med - H	Track Weight	Signalling Weight	Telecoms Weight	Electrification Weight	Plant & Mach. Weight	Civils Weight	Estates Weight	Other R&E Weight	Maintenance Weight	Opex Weight
General Operatives	(1.0) - 1.0 - 3.0	2%								0%	
Average Annual Earnings	(0.2) - 0.8 - 1.8	9%									
Driver Wages	(0.1) - 1.8 - 3.8	13%				34%	22%	9%		17%	
Steel	(8.0) - 0.0 - 8.0	28%	21%		24%		6%			6%	
Concrete	0.5 - 1.5 - 2.4	2%	21%				3%			0%	
Aggregates	(2.2) - (1.7) - (1.3)						18%				
Ballast	(2.0) - (1.6) - (1.1)	7%								2%	
RPI (Fuel and other)	(0.5) - 0.0 - 0.5	7%			5%	2%	1%	1%	75%	1%	100%
PPI (Plant Capital and Maintenance)	(2.2) - (1.2) - (0.2)	24%				63%	40%	16%		32%	
Construction Materials	(2.1) - (0.5) - 1.0	7%		57%	15%		10%	74%		16%	
Signalling Materials	(3.8) - (2.8) - (1.8)		24%		13%						
Copper	(22.5) - (14.6) - (6.6)		21%		9%						
Telecoms Equipment	(3.7) - (2.7) - (1.7)			43%							
Utilities	(0.9) - 0.1 - 1.0									9%	
IT Equipment	(13.5) - (12.1) - (10.8)		13%						25%		
Telecoms	(1.2) - 0.7 - 2.7									16%	
E&P Plant	(2.3) - (0.9) - 0.4				34%						
Fixed Zero Inflation (Plant)	(4.7) - (2.7) - (0.7)	2%								0%	
CP4 Materials, Plant and Other Relative to RPI CAGR	L Med H	(3.0) (0.0) 3.0	(8.9) (4.9) (0.9)	(2.8) (1.5) (0.2)	(5.0) (2.1) 0.8	(1.4) (0.1) 1.2	(2.0) (0.4) 1.3	(1.9) (0.4) 1.1	(4.2) (3.1) (2.0)	(2.0) (0.1) 1.7	(0.5) 0.0 0.5