OFGEM

GAS DISTRIBUTION PRICE CONTROL REVIEW

ONE YEAR CONTROL

FINAL REPORT 1

WALES & WEST NETWORK

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Contents

List of Appendices

1 EXECUTIVE SUMMARY

This report has been prepared by PB Power for Ofgem based on returns made by Wales & the West Utilities (WWU) in April 2006. Our conclusions are summarised against two principal periods. The period January 2001 to March 2002 is presented based on the expenditure and workloads of all 8 Gas Distribution Networks (GDNs as separate Wales and West (WW) GDN figures are not available prior to April 2002. The period April 2002 to March 2007 is presented based on the expenditure and workloads of the Wales & West Network.

1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

1.1.1 CAPEX

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**429.5**	**71.3**	**500.8**
LTS & Storage 3.2	158.9	14.2	173.1
Mains (General Reinforcement) 5.2	50.8	8.2	59.0
Governors 5.2	14.1	2.2	16.3
Connections (Mains) 4.2	17.7	6.2	23.9
Connections (Services) 4.2	68.2	22.8	91.0
Other Operational Capex 6.2	27.1	4.0	31.1
Non-Operational Capex 7.2	92.7	13.6	106.3

Table 1

1.1.1.1 Categorisation of Incurred Expenditure

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**429.5**	**71.3**	**500.8**
Wasteful/Unnecessary Expenditure	**24.5**	**9.5**	**34.0**
LTS & Storage 3.2	2.9	0.0	2.9
Mains (General Reinforcement) 5.2	0.0	0.0	0.0
Governors 5.2	0.0	0.0	0.0
Connections (Mains) 4.2	3.1	1.1	4.2
Connections (Services) 4.2	11.9	4.0	15.9
Other Operational Capex 6.2	0.0	0.0	0.0
Non-Operational Capex 7.2	6.6	4.4	11.0
Ofgem Adjusted Net Investment	**405.0**	**61.8**	**466.8**

Table 2

1.1.2 REPEX

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**367.2**	**105.5**	**472.7**
Mains 8.3	276.7	77.0	353.6
Services 8.3	89.1	27.6	116.7
LTS 9.2	1.4	0.9	2.3

Table 3

1.1.2.1 Categorisation of Incurred Expenditure

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**367.2**	**105.5**	**472.7**
Wasteful/Unnecessary Expenditure	0.0	0.0	0.0
Mains 8.3	0.0	0.0	0.0
Services 8.3	0.0	0.0	0.0
LTS 9.2	0.0	0.0	0.0
Ofgem Adjusted Net Investment	**367.2**	**105.5**	**472.7**

Table 4

Replacement workload and costs over the 15 months to 31 March 2002 have been reviewed. Overall, costs are consistent with the reported workload and no adjustments are proposed.

1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

1.2.1 CAPEX

The Capex summary figures are given in Table 5. These show the starting Reported Net Investment from the last control, the Reported Net Investment as requested by WWU and finally PB Powered initial recommendation for Ofgem's adjusted Net Investment

Overspend

- The GDN is forecast to be £106.8m (86%) in excess of the Net Capex allowance for all activities
- The combined mains and services connections Net Capex is over spent by £49.3m. This is mainly due to the workload forecasts which were inaccurate because competition in one-off domestic connections did not develop as expected.
- Reinforcement mains Net Capex is over spent by £12.8m. The variance substantially results from a high level of activity in 2002/03 associated with a Transco initiated network validation programme in 1999/2000
- Non-Operational Net Capex is over spent by £35m. This variance is due mainly to the establishment of IS systems following the network sales process.

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of processes to monitor and control expenditure & projects.
- Assessment of Net Capex drivers.
- Unit cost trends and comparisons.
- Management of contract arrangements.
- Review of processes to manage direct labour productivity.
- Procurement policies and procedures.

Key Issues

- Data quality, particularly for connections activities, has inhibited analysis and comparison of cost performance.
- WWU does not have management information systems that provide detailed analysis of Net Capex performance to ensure effective monitoring and control.
- IS systems under NGG ownership have elements of wasteful expenditure and under WWU ownership forecasts are far higher than allowances.

Categorisation of Incurred Expenditure

- Adjustments to connections Net Capex are substantially associated with inefficient recovery of costs via contributions.

Categorisation of Forecast Expenditure

- Adjustments to connections Net Capex are substantially associated with inefficient recovery of costs via contributions.
- Adjustments to Non-Operations Net Capex are substantially associated with inefficient management of IS and in particular the Quarterback Programme.

Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**46.2**		**28.5**		**15.3**		**15.0**		**18.7**		**123.6**		**46.2**
Total GDN Variance	**19.1**	**41%**	**15.9**	**56%**	**9.6**	**63%**	**41.0**	**274%**	**21.1**	**113%**	**106.8**	**86%**	**19.1**
LTS & Storage 3.3.1 and 3.4.1	-2.4	-10%	7.1	74%	**0.1**	8%	2.3	190%	0.8	16%	7.9	19%	-2.4
Mains (General Reinforcement) 5.3.2 and 5.4.1	9.2	207%	1.9	50%	**-1.0**	-27%	2.0	60%	0.8	24%	12.8	69%	9.2
Governors 5.3.2 and 5.4.1	1.1	165%	0.4	57%	**0.1**	14%	-0.3	-39%	0.2	43%	1.5	48%	1.1
Connections (Mains)[1] 4.3.1 and 4.4.1	1.9	-708%	2.1	-899%	**2.1**	-487%	2.7	-1206%	2.3	-26800%	11.0	-952%	1.9
Connections – (Services) 4.3.1 and 4.4.1	11.3	271%	8.0	228%	**7.9**	276%	7.4	380%	3.7	256%	38.3	275%	11.3
Other Operational Capex 6.3.1 and 6.4.1	0.8	78%	0.1	13%	**-0.2**	-15%	-0.2	-16%	-0.3	-33%	0.3	5%	0.8
Non-Operational Capex 7.3.1 and 7.4.1	-2.6	-22%	-3.7	-36%	**0.6**	10%	27.0	388%	13.8	184%	35.0	84%	-2.6
Reported Net Investment	**65.3**		**44.3**		**24.9**		**56.0**		**39.8**		**230.4**		**65.3**
Wasteful/Unnecessary Actual Expenditure	**9.8**		**4.3**		**4.8**						**19.0**		**9.8**
Adjustments to Forecasts							**17.6**		**8.2**		**25.8**		
LTS & Storage 3.3.3 and 3.4.3 and 3.4.4	4.7		0.0		0.0		0.0		0.0		4.7		4.7
Mains (General Reinforcement) 5.3.3 and 5.4.3 and 5.4.4	0.5		0.6		0.1		0.1		0.1		1.3		0.5
Governors 5.3.3 and 5.4.3 and 5.4.4	0.0		0.0		0.0		0.0		0.0		0.1		0.0
Connections (Mains) 4.3.3 and 4.4.3 and 4.4.4	0.7		0.9		0.7		1.3		1.1		4.8		0.7
Connections – (Services) 4.3.3 and 4.4.3 and 4.4.4	2.9		2.1		3.5		2.0		0.9		11.4		2.9
Other Operational Capex 6.3.3 and 6.4.3 and 6.4.4	0.0		0.0		0.0		0.0		0.0		0.0		0.0
Non-Operational Capex 7.3.3 and 7.4.3 and 7.4.4	1.0		0.7		0.5		14.3		6.1		22.5		1.0
Ofgem Adjusted Net Investment	**55.5**		**40.0**		**20.0**		**38.4**		**31.6**		**185.6**		**55.5**
Allowed Workload	**41.6**		**36.0**		**16.7**		**24.8**		**23.9**		**142.9**		**41.6**
Additional Workload	**13.8**		**3.7**		**3.0**		**11.9**		**4.8**		**37.3**		**13.8**
Deferrable/Unplanned but Predictable	**0.2**		**0.3**		**0.3**		**1.6**		**2.9**		**5.3**		**0.2**

Table 5

[1] Variance percentage values not included as allowances are negative.

1.2.2 REPEX

Mains and services replacement expenditure is directed at reducing the risk of incident arising from cast, spun and ductile iron mains. The Network follows a programme, aligned to a policy set out by the HSE, aimed at decommissioning all iron mains within 30m of premises by 2032.

The Repex summary figures, which include LTS, are given in table 6. These show the Allowed Net Investment from the current control and the Reported Net Investment as presented by WW. Net Investment is re-stated after re-allocation of mains and services costs and finally the PB Power initial recommendation for Ofgem's Adjusted Net Investment is detailed

Overspend

- WW forecasts that it will be £49m (25%) in excess of the Net Repex allowance for all activities over the five year period.
- The overspend is due to higher costs of replacement mains and services.

Analysis Carried Out

- Review of processes to monitor and control expenditure & projects.
- Assessment of the HSE's requirements.
- Unit cost trends and comparisons.
- Contract arrangements and management.
- Review of processes to manage direct labour productivity.
- Procurement policies and procedures.

Key Issues

- The visibility of costs is poor and a reporting regime should be introduced to enable reliable cost comparison within and between GDNs.
- The Supplementary Incentive Mechanism has distorted cost allocation and should be reviewed.
- To address the distortion of mains and services costs, a proportion of services costs have been re-allocated to mains and the Supplementary Incentive Mechanism.

Categorisation of Incurred Expenditure

- An adjustment has been made to services costs to reflect contract and direct labour inefficiencies.
- No efficiency adjustment is made to mains expenditure (incurred or re-allocated) since the Supplementary Incentive Mechanism, defined within the control, determines the treatment of over and under expenditure.

Categorisation of Forecast Expenditure

- Reallocations from services to mains continue to the end of 2006/07.
- There is no reallocation in 2007/08, assuming the removal of the Supplementary Incentive Mechanism and allowing a return to appropriate cost allocation.
- There are continuing adjustments to services reflecting on-going contract and direct labour inefficiencies under the current arrangements. The 2007/08 adjustment removes TMA costs and reflects anticipated efficiency improvements of 1.4%.

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**41.7**		**35.0**		**43.0**		**41.7**		**38.2**		**199.6**		
Total GDN Variance	**6.4**	**+15%**	**6.8**	**+19%**	**7.3**	**+17%**	**12.1**	**+29%**	**16.6**	**+43%**	**49.2**	**+25%**	
Mains (as reported) 8.4.1 and 8.5.1	2.7	+8%	-2.3	-9%	-0.3	-1%	0.3	+1%	2.4	+8%	2.7	+2%	
Services (as reported) 8.4.1 and 8.5.1	5.2	+93%	9.4	+129%	8.8	+89%	12.8	+127%	14.2	+160%	50.4	+121%	
LTS 9.3.1	-1.4	-101%	-0.3	-28%	-1.2	-103%	-1.0	-101%	0.0	-6%	-3.9	-78%	
Reported Net Investment	**48.1**		**41.8**		**50.3**		**53.8**		**54.7**		**248.8**		**59.7**
Total GDN Variance (after re-allocation by PB Power)	6.4	+15%	6.8	+19%	7.3	+17%	12.1	+29%	16.6	+43%	49.2	**+25%**	
Mains (after re-allocation) 8.4.1 and 8.5.1	5.0	+14%	1.6	+6%	4.2	+13%	6.2	+20%	8.7	+30%	25.7	+17%	
Services (after re-allocation) 8.4.1 and 8.5.1	2.8	+51%	5.5	+75%	4.3	+43%	6.9	+69%	7.9	+89%	27.4	+66%	
LTS 9.3.1	-1.4	-101%	-0.3	-28%	-1.2	-103%	-1.0	-101%	0.0	-6%	-3.9	-78%	
Restated Net Investment (after re-allocation)	**48.1**		**41.8**		**50.3**		**53.8**		**54.7**		**248.8**		**59.7**
Wasteful/Unnecessary Actual/Forecast Expenditure	**0.2**		**0.4**		**0.4**						**1.0**		
Adjustments to Actual/Forecast							**0.6**		**0.7**		**1.3**		**5.4**
Mains 8.4.3 and 8.5.3 and 8..5.4	0.0		0.0		0.0		0.0		0.0		0.0		2.7
Services 8.4.3 and 8.5.3 and 8..5.4	0.2		0.4		0.4		0.6		0.7		2.3		2.8
LTS 9.3.3 and 9.4.1 and 9.4.2	0.0		0.0		0.0		0.0		0.0		0.0		0.0
Ofgem Adjusted Net Investment	**47.9**		**41.5**		**49.9**		**53.2**		**54.0**		**246.5**		**54.3**
Mains	39.8		28.3		36.1		36.8		37.5		178.5		
Services & LTS	8.1		13.2		13.8		16.4		16.5		68.0		
Allowed Workload	**8.1**		**10.9**		**10.2**		**11.8**		**10.5**		**51.4**		
Additional Workload	**0.0**		**2.3**		**3.6**		**4.6**		**6.1**		**16.6**		
Deferrable/Unplanned but Predictable	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		

Table 6

2 INTRODUCTION

2.1 PRICE CONTROL REVIEW TIMETABLE

The current price control period for all gas distribution networks (GDNs) runs from 1 April 2002 to 31 March 2007. Ofgem has decided in consultation with the businesses, to extend this period by one year to 31 March 2008. This process is known as the 'One Year Control' and is described below.

The One Year Control will be followed by a further review which will result in a new price control being set for the five years from 1 April 2008 to 31 March 2013. This will be known as the Main Review.

The full process is shown in the following diagram.

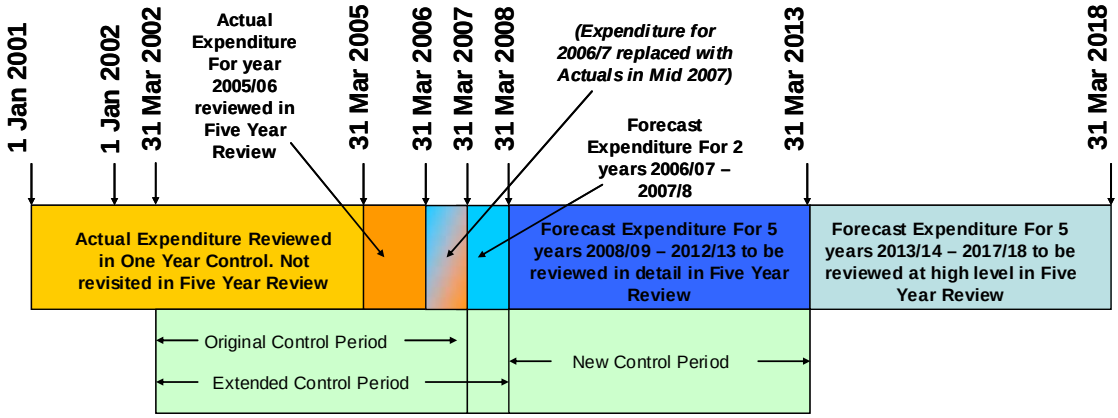


Figure 1

2.2 ONE YEAR CONTROL

Ofgem appointed PB Power working in partnership with Rune Associates Limited to assist them in the preparation of the Capex and Repex elements of the BPQ and to analyse and report on the submissions by the GDNs.

As part of the consultation process a number of meetings were held with the GDNs and a Business Plan Questionnaire was issued on 17 February 2006. The latter were returned to Ofgem on 7 April and PB Power has prepared this report for Ofgem on its findings from these submissions from the GDN.

This report covers the WALES and WEST network owned by Wales & West Utilities.

2.3 BUSINESS PLAN QUESTIONNAIRE

A combined BPQ was issued on 17 February. This covered the Financial Statements, Opex, Capex and Repex requests. The Capex and Repex areas covered by this report were in the form of 20 Excel worksheets, a section (4) giving guidance to the GDNs as to how to complete the worksheets and a section (6) containing 209 additional narrative questions.

GDNs were asked to respond to Ofgem by 7 April and were asked to upload all the data onto PB Power's file management system, PBShare. All parties in the process were granted appropriate access to relevant folders and documents. Some documents had to be provided in paper copy and these were sent both to PB Power and to Ofgem.

As the analysis of the submissions progressed and where the return was either unclear or insufficient it became necessary to ask the GDNs for additional information. These requests and the additional information which was presented in reply, were logged and stored on PBShare.

At the end of the process the worksheets were updated to include all amendments submitted and should be read in conjunction with this report.

2.4 PURPOSE

The purpose of this report is to present the results of the analyses such that Ofgem may make a determination of the necessity and efficiency of the Capex and Repex expenditure by WWU using the actual results for the three years from April 2002 to March 2005 to permit the RAV roll forward to be fixed up to March 2005. The estimated outturns for 2005/06 will be +revisited later in the process when audited accounts are available. These figures along with forecasts for 2006/07 and 2007/08 will be used to fix the allowances for 2007/08, the one year extension period.

2.5 ANALYSIS AND REPORTING PROCESS

The BPQ was designed to collect all the data required for analysis. The spreadsheets were designed with the Main Review in mind to ensure that the data collected for the One Year Extension was collected in a format which would roll forward into the Main Review. This would also ensure that the GDNs did not have to provide the same information twice.

The GDNs would also be able to see in advance what data was likely to be needed for the Main Review and hence to prepare for this. The narrative questions were mainly focused on the historic period, but again the intention was not to collect the same information twice. The Main Review narrative will focus on the future and require more detailed and substantiated forecasting than was expected for the One Year Control.

PB Power has structured this report to follow the workstrands in Ofgem's tender document as far as is practicable. We have broken the work down into four main workstreams:

i) Capital expenditure (Capex): for all works on the below 7 bar network including Connections

ii) Replacement expenditure (Repex): for all replacement work above and below 7 bar including the Policy Mains Replacement Programme.

iii) Local Transmission System (LTS) and Storage: for all work on the network from 85 bar down to 7 bar, including HP and LP storage.

iv) Other: covers all I.T. and System Operation work and other operational and non operation Capex.

The report reviews the actual expenditure from April 2002 to March 2005 with a view to determination of the Regulatory Asset Value (RAV) for that period. The forecast years from April 2005 to March 2008 are reviewed to permit the determination of allowances for the One Year Control April 2007 to March 2008.

2.6 COSTS

All costs in the report are in 2005/06 prices unless otherwise stated.

At the time the analysis was carried out the final RPI value for the year 2005/06 was not known. An estimated value of 192.8 was therefore provided by Ofgem for the analysis. The table below shows the factors which have been used to convert pre 2005/06 costs to 2005/06. These factors have been used throughout the analysis.

		Convert from						
		2000	**2001**	**Q1 2002**	**2002/03**	**2003/04**	**2004/05**	**2005/06**
Convert to	**Index**	170.3	173.4	173.9	177.5	182.5	188.2	192.8
	2000	1.00	0.98	0.98	0.96	0.93	0.90	0.88
	2001	1.02	1.00	1.00	0.98	0.95	0.92	0.90
	Q1 2002	1.02	1.00	1.00	0.98	0.95	0.92	0.90
	2002/03	1.04	1.02	1.02	1.00	0.97	0.94	0.92
	2003/04	1.07	1.05	1.05	1.03	1.00	0.97	0.95
	2004/05	1.11	1.09	1.08	1.06	1.03	1.00	0.98
	2005/06	1.13	1.11	1.11	1.09	1.06	1.02	1.00

Table 7

After this report had been prepared, a final RPI figure of 193.11 for the year 2005/06 became available. This revision would require some values in this report to be inflated to show the accurate pricing in 2005/06 prices. All **Allowed Net Investments** and pre 2005/06 **Reported Net Investments** require inflating by 0.14%.

2.7 REPORTING DEFINITIONS

A number of terms are used as headings within the tables in the document. The following table sets out the definition of these terms in the context of the report:

Definition of Headings used in tables	
Additional Workload	Expenditure on additional work (above the volume allowed in PCR) that PB Power considers timely, justified and efficiently incurred which could not have reasonably been forecast at the last review
Allowed Workload	Expenditure on allowed work that PB Power considers efficiently incurred (gross)
Allowed Net Investment	The Ofgem allowance (net of contributions)
Deferrable/Unplanned but Predictable	Expenditure on work that PB Power considers was efficiently incurred, but either could have been deferred to the next control period or should have been anticipated and correctly forecast in the current control
Ofgem Adjusted Net Investment	PB Power's recommended adjusted net expenditure for the area of work
Reported Net Investment	The GDN's reported (net) expenditure for the area of work
Wasteful/Unnecessary Expenditure	Expenditure on work that PB Power considers was wasteful or unnecessary

Table 8

2.8 DATA FOR PERIOD JAN 2001 TO MAR 2002

Data for this period was provided by NGG only, for the whole UK Distribution business. In most cases the information is aggregated such that the analysis can only be undertaken for UKD as a whole and the breakdown of expenditure categories is not always the same as required for the period after April 2002, thereby affecting and limiting the extent of any analysis.

2.9 ADJUSTMENTS

Where the analysis has led to a conclusion that an adjustment is recommended, it is sometimes the case that this will be a range rather than a specific figure. In these cases the relevant table will show a mid point figure and the range itself will be annotated in the attendant text in either monetary or percentage terms.

3 LTS AND STORAGE CAPEX

3.1 SUMMARY OF FINDINGS

3.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**158.9**	**14.2**	**173.1**
Wasteful/Unnecessary Expenditure	**2.9**	**0.0**	**2.9**
Ofgem Adjusted Net Investment	**156.0**	**14.2**	**170.2**

Table 9

Analysis Carried Out

The LTS data provided for this period by NGG is in aggregate form only except for named large pipeline projects. These named projects were:

- Reviewed to determine efficiency of spend
- Reviewed to determine effectiveness of planning and procurement activities
- Examined for financial controls across their phased expenditure period

Key Issues

- Project expenditure spans up to four years
- A single project may span three RAV assessment periods
- Inefficiencies are estimated and applied to a nominal central year

Categorisation of Incurred Expenditure

- Two projects have been identified with some wasteful/unnecessary expenditure totalling £2.9m

3.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

Overspend

- WWU has overspent its LTS Capex allowance by £7.9m in the period.

Analysis Carried Out

- All named projects were reviewed in respect of outline data
- A selected major project was reviewed in depth for justification and efficiency

Key Issues

- Projects in the early years were not well managed

Categorisation of Incurred Expenditure

- £4.7m (+/- £1.0m) has been categorised as wasteful/unnecessary

Categorisation of Forecast Expenditure

- No wasteful/unnecessary expenditure has been identified

Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**24.6**		**9.6**		**1.7**		**1.2**		**4.9**		**42.0**		
Total GDN Variance	**-2.4**	**-10%**	**7.1**	**74%**	**0.1**	**8%**	**2.3**	**190%**	**0.8**	**16%**	**7.9**	**19%**	
Reported Net Investment	**22.2**		**16.7**		**1.8**		**3.5**		**5.7**		**49.9**		**9.5**
Wasteful/Unnecessary Actual Expenditure	**4.7**		**0.0**		**0.0**						**4.7**		
Adjustments to Forecasts							**0.0**		**0.0**		**0.0**		**0.5**
Ofgem Adjusted Net Investment	**17.5**		**16.7**		**1.8**		**3.5**		**5.7**		**45.2**		**9.0**
Allowed Workload	**17.5**		**16.5**		**1.6**		**3.1**		**3.3**		**42.0**		
Additional Workload	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		
Deferrable/Unplanned but Predictable	**0.0**		**0.2**		**0.2**		**0.4**		**2.4**		**3.2**		

Table 10

3.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**158.9**	**14.2**	**173.1**
Wasteful/Unnecessary Expenditure	**2.9**	**0.0**	**2.9**
Ofgem Adjusted Net Investment	**156.0**	**14.2**	**170.2**

Table 11

Data provided by NGG for LTS expenditure for the period 1 January 2001 to 31 March 2002 was provided as aggregate UKD data only. The total expenditure was £173.1m . This was mainly on 11 named pipeline projects.

Not only does the expenditure for any given project extend over a period of up to four or five years, but the expenditure also crosses the threshold of the two price control periods at 31 March 2002 and there was some expenditure prior to January 2001. This requires special consideration in terms of the treatment of adjustments.

For these purposes each project has been allocated a 'central' year: the year of peak expenditure. Any adjustment will be applied to that year only.

Detail relating to the justification for any adjustment is to be found in the GDN report for the Network in whose area the project is located. The summary of these adjustments is:

a) Projects with a central year of 2002/03 or beyond: £10.5m (2005/06 Prices)

b) Projects with a central year of 2001 £2.9m (2005/06 Prices)

Adjustments for those in (a) are in the LTS sections of the relevant GDN report, in which the project is located.

Adjustments for those in (b) are given below:

Breakdown of the adjustments;

Horndean to Newalls Lane: due to inefficient planning processes and contract management it was considered that this project overspent unnecessarily by £0.7m.

Newbury Reinforcement: due to inefficient planning processes and contract management this project incurred an inefficient and unnecessary overspend of £2.2m.

3.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

3.3.1 HIGH LEVEL VARIANCES ANALYSIS

LTS and Storage Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross	Actual	22.3	17.1	2.0	41.4
	Allowance	24.6	9.6	1.7	35.9
	Variance	-2.3	7.5	0.3	5.5
Contributions	Actual	0.1	0.4	0.2	0.7
	Allowance	0.0	0.0	0.0	0.0
	Variance	0.1	0.4	0.2	0.7
Net	Actual	22.2	16.7	1.8	40.7
	Allowance	24.6	9.6	1.7	35.9
	Variance	-2.4	7.1	0.1	4.8

Table 12

WWU have under spent against their allowance on pipelines, mainly due to the cancelling of a planned storage pipeline from Seabank to Frampton. They have overspent on PRI work which they have satisfactorily explained as the need to upgrade (and thereby increase capacity on) a number of key PRIs. However, although this work is deemed to be efficient, it has taken WWU over their allowance by £0.4m in the three year period (plus £2.8m in the final two years) and all this is deemed to have been predictable but unplanned.

3.3.2 REASONS FOR VARIANCES

WWU have exceeded their LTS and Storage Capex allowance by £4.8m in the three years to March 2005. Their work programme changed considerably between the 2001 plan and the actuals. Their major pipeline project overspent the allowance by £8m, part of which is deemed to have been inefficient expenditure. This overspend was partially offset by the cancellation of another pipeline storage project, but there was a considerable unplanned PRI rebuild programme which took them over their allowance.

3.3.3 EFFICIENCY ANALYSIS

LTS and Storage Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**22.2**	**16.7**	**1.8**	**40.7**
Wasteful/Unnecessary Expenditure	**4.7**	**0.0**	**0.0**	**4.7**
Ofgem Adjusted Net Investment	**17.5**	**16.7**	**1.8**	**36.0**
Allowed Workload	**17.5**	**16.5**	**1.6**	**35.6**
Additional Workload	**0.0**	**0.0**	**0.0**	**0.0**
Deferrable/Unplanned but Predictable	**0.0**	**0.2**	**0.2**	**0.4**

Table 13

3.3.3.1 Project Review

To assess the efficiency of LTS expenditure, the GDN's processes were reviewed to determine whether they had appropriate procedures for planning, procurement, contract management and financial controls.

For WWU, one major project was selected; the Gilwern to Hafodyrynys pipeline.

i) The largest and most significant LTS project to be undertaken in the WWU network in the current control period was the Gilwern to Hafodyrynys pipeline. This project was selected for specific review because of the escalation of the project costs and because it was completed one year later than planned. The project comprised the construction of 25 kms of 600mm diameter class 600 steel pipeline from Gilwern to Hafodyrynys and the rebuilding of the Nash Road Pressure Reduction Installation to reinforce supplies to South East Wales and to increase LTS linepack storage.

ii) The network analysis data provided clearly demonstrated that this reinforcement was required for 2002 to avoid a failure to supply statutory loads in South East Wales.

iii) However, Transco did not adhere to its own stated lead time requirement of 3 to 4 years for major pipeline projects. This led to compressed timescales, the splitting of construction works over two seasons, escalated costs and late completion.

iv) The project was within the final approved cost, but this was 45% higher than the original approval. There is insufficient data to establish if the escalating cost estimates were fully justified.

v) We have concluded that Transco did not allow sufficient lead time to mitigate all the planning issues for this project. It changed the control of the management of the project from the LDZ to NT part way through the planning phase causing delay and leading to upward cost revisions. The increases from £17m to £25 m have not been properly tracked. It is acknowledged that there were difficulties related to permissions and UXBs but there is a risk of these on any new pipeline route. We believe that if the planning phase had been allowed to progress uninterrupted, the permissions may have been in place to permit all construction in 2002 which would have materially reduced costs and would have delivered the reinforcement to the timescale correctly identified as necessary to meet peak demand for the 2002/03 winter.

vi) The absolute costs of the subsequent delays are not apparent from the documents supplied and we are surprised that DPSC accepted the findings in the PIA without better substantiation.

vii) We estimate that even allowing for the actual constraints encountered on this project, it may well have been completed for between £20 and £22m if the processes had all been followed efficiently.

viii) From the above information a mid point efficient cost has been applied at £21m leading to a recommended adjustment of £4.3 nominal, £4.7m (+/- £1.0m) at 2005/06 prices.

The full report can be seen in Appendix 7

3.3.3.2 Network Planning and Design

i) In the one year price control review, Ofgem called for information from the GDNs on the different elements which comprise the network planning procedure. The information requested included numerical data regarding network analysis and storage simulation as well as qualitative explanations of a number of factors.

The information provided has been studied in order to evaluate the overall network planning process carried out for each GDN. This has principally related to local transmission and storage systems. Diurnal storage requirements and availability as

well as transmission capacity evaluations have been carried out since these must be taken together. Additionally load forecasting and demand allocation processes have been examined. The validity of the simulated networks and their appropriateness for use as definitive planning aids have been examined and a view arrived at as to the robustness of the actual networks and plans for their reinforcement to meet future requirements.

ii) Although replies have been provided for all questions, many of the answers are phrased in general terms rather than specifics and the answers are sometimes minimal rather than expansive.

iii) WWU follows the same procedures as Transco did which gives some confidence that networks should be valid. However, no documentary evidence of model validation other than a basic comparison between recorded and forecast flows for the LTS was provided. We found that there was reasonable correlation at most points between recorded and predicted data but that there was insufficient evidence to provide total confidence that the GDN was capable of drawing sustainable inferences from these or that the network analysis models which resulted were as representative of reality as possible.

iv) Having examined the data provided by the Wales and West Utilities, and taking into account the limitations expressed in the previous section about the depth of coverage, we are unable to confirm that there is evidence that planning work for development of the Wales and West Utilities GDN is carried out in a wholly satisfactory manner. Conversely there is no specific evidence that this is not the case.

A full report can be seen in Appendix 2

3.4 FORECAST EXPENDITURE

LTS and Storage Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross	Actual	22.3	17.1	2.0	3.9	6.1	51.4
	Allowance	24.6	9.6	1.7	1.2	4.9	42.0
	Variance	-2.3	7.5	0.3	2.7	1.2	9.4
Contributions	Actual	0.1	0.4	0.2	0.4	0.4	1.5
	Allowance	0.0	0.0	0.0	0.0	0.0	0.0
	Variance	0.1	0.4	0.2	0.4	0.4	1.5
Net	Actual	22.2	16.7	1.8	3.5	5.7	49.9
	Allowance	24.6	9.6	1.7	1.2	4.9	42.0
	Variance	-2.4	7.1	0.1	2.3	0.8	7.9

Table 14

3.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

Named projects were reviewed in outline. One major project was reviewed in detail.

3.4.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

WWU have under spent against their allowance on pipelines, mainly due to the cancelling of a storage pipeline from Seabank to Frampton. They have overspent on PRI work which they have explained as the need to upgrade (and thereby increase capacity on) a number of key PRIs. However, although this work is deemed to be efficient, it has taken WWU over their allowance by £2.8m in the period (plus £0.4m in the first three years) and all this is deemed to have been predictable but unplanned.

3.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

LTS and Storage Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	22.2	16.7	1.8	3.5	5.7	49.9	9.5
Adjustments	4.7	0.0	0.0	0.0	0.0	4.7	0.5
Ofgem Adjusted Forecast Net Investment	17.5	16.7	1.8	3.5	5.7	45.2	9.0
Allowed Workload	17.5	16.5	1.6	3.1	3.3	42.0	
Additional Workload	0.0	0.0	0.0	0.0	0.0	0.0	
Deferrable/Unplanned but Predictable	0.0	0.2	0.2	0.4	2.4	3.2	

Table 15

Transmission pipelines will normally become visible in the planning process between five and ten years ahead of their required commissioning date. In the first instance the long term planning process will identify a supply/demand mismatch usually at zonal level. This will be entered into the plan as a potential reinforcement need in a particular year. A simplistic solution (the most obvious) may be costed to permit a figure to be entered into the financial plans.

As the 'project' comes closer in time, other actions and events may affect the design data for this project and in particular the timing. Demands are reassessed annually and networks are validated against real data on a cyclical programme following each winter's experiences. New economic industrial loads may significantly move the size and timing of any proposal. Adjacent LTS projects can influence proposals and in particular NTS projects will have a major impact. It is critical that a link is maintained between the NTS planning processes and the LTS otherwise suboptimal solutions will be implemented. This is particularly critical as the lead times for both NTS and LTS pipelines are 3 to 4 years. Last minute changes in design and timing will lead to unnecessary and/or inefficient expenditure.

Diurnal storage requirements also directly impact on the pipeline requirements and timings and these are a dynamic and complex set of calculations changing as increasing connected load reduces available linepack over time and as the availability of Low Pressure Gasholders diminishes with age.

As the decision time for a project approaches, alternative solutions are worked up in more detail and refined. These are costed accurately to permit selection of the optimum solution.

Transmission PRIs will either be part of a pipeline project in which case their evolution follows the same process, or they may be rebuilt to give additional capacity while the inlet and outlet pipelines are still satisfactory. It is normal that any PRI rebuilds will deliver significant extra capacity such that the expenditure will be treated as capital. Rebuilds due to obsolete equipment would also be classed as Capex for the same reason. Piecemeal replacement of (some) equipment which does not give material extra capacity to the whole installation will be treated as Repex.

The higher than planned workload for this period is deemed necessary and efficient but takes WWU £3.2m over their Net Capex allowance and is categorised as predictable but unplanned. It was deemed predictable as the main overspend occurred in 2003/04 and therefore because of the lead times that are needed to design, procure and install LTS equipment, the work must have been known about in 2001 when the plan was put together.

3.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

Non-storage pipeline work for 2007/08 is costed at £0.1m, as is non-LTS storage work. However, 2007/08 shows the start of the planning works (and costs) for a major storage pipeline construction programme to provide for all additional linepack needed instead of buying this from the NTS. At this stage these should not be allowed as they are inconsistent with the BPQ assumptions. Therefore this cost of £0.5m is deemed as deferrable. This issue will be revisited as part of the main price control review.

There is a reasonable programme of NTS offtake and LTS PRI work totalling £8.8m for 2007/08. This work has not been explained project by project in the narrative, but from the spreadsheets it is clear that it represents rebuilds at 4 named sites and a number of unnamed smaller sites.

This is deemed to be an acceptable level of activity as it represents WWU's first opportunity since sale to implement the outcomes from its own review of PRI capacity and condition.

Therefore £9.0m is deemed allowable and £0.5m as not allowable.

3.5 FORECAST TRENDS (2002 TO 2013)

3.5.1 HIGH LEVEL TREND

With the exception of the £67m storage pipeline programme which is not consistent with the BPQ assumptions, proposed expenditure beyond 2007/08 is small and on unnamed projects.

3.5.2 COMMENTS ON TREND

It is normal not to see trends in an LTS programme.

4 CONNECTIONS CAPEX

4.1 SUMMARY OF FINDINGS

This section considers total Connections Capex.

4.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**85.9**	**29.1**	**114.9**
Wasteful/Unnecessary Expenditure	**15.0**	**5.1**	**20.1**
Ofgem Adjusted Net Investment	**70.9**	**24.0**	**94.8**

Table 16

The Net Capex summary figures are given in Table 15. Reported Net Investment as provided by the GDN and PB Power's recommendation for Ofgem's Adjusted Net Investment.

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account:

- Assessment of Net Capex drivers.
- Unit cost trends and comparisons.
- Review of workload trends.

Key Issues

- Information for the period January 2001 to 31st March 2002 is reported by NGG on a total UK basis only. Therefore we are unable to provide an assessment of investment performance specifically relating to WWU.
- Recovery of costs via contributions is inefficient and appropriate adjustments have been recommended.

Categorisation of Incurred Expenditure

- £20.1m of connections expenditure is considered wasteful.

4.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

The Net Capex summary figures are given in Table 16. These show the initial Allowed Net Investment from the last control, WWU's Reported Net Investment and finally PB Power's recommendation for Ofgem's Adjusted Net Investment.

Overspend

- The GDN is forecast to be £49.3m (386%) in excess of the Net Capex allowance.

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account:

- Review of processes to monitor and control expenditure & projects.
- Assessment of Net Capex drivers.
- Unit cost trends and comparisons.
- Management of contract arrangements.
- Review of processes to manage direct labour productivity.
- Procurement policies and procedures.

Key Issues

- Data quality, particularly for connections activities, has inhibited analysis and comparison of cost performance.
- WWU do not have management information systems that provide detailed analysis of Net Capex performance to ensure effective monitoring and control.
- Recovery of costs via contributions is inefficient and appropriate adjustments have been recommended.

Categorisation of Incurred Expenditure

- £10.9m of connections expenditure has been assessed as inefficient.

Categorisation of Forecast Expenditure

- £5.3m of connections expenditure has been assessed as inefficient.

Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**3.9**		**3.3**		**2.4**		**1.7**		**1.4**		**12.8**		
Total GDN Variance	**13.2**	**339%**	**10.1**	**307%**	**10.0**	**409%**	**10.2**	**587%**	**5.9**	**416%**	**49.3**	**386%**	
Reported Net Investment	**17.0**		**13.3**		**12.4**		**11.9**		**7.4**		**62.0**		**7.4**
Wasteful/Unnecessary Actual Expenditure	**3.6**		**3.1**		**4.3**						**10.9**		
Adjustments to Forecasts							**3.2**		**2.0**		**5.3**		**2.3**
Ofgem Adjusted Net Investment	**13.5**		**10.3**		**8.1**		**8.7**		**5.3**		**45.8**		**5.1**
Allowed Expenditure	**10.6**		**8.1**		**6.1**		**6.0**		**3.8**		**34.7**		
Additional Workload	**2.8**		**2.1**		**2.0**		**2.7**		**1.5**		**11.1**		
Deferrable/Unplanned but Predictable	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		

Table 17

4.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**85.9**	**29.1**	**114.9**
Wasteful/Unnecessary Expenditure	**15.0**	**5.1**	**20.1**
Ofgem Adjusted Net Investment	**70.9**	**24.0**	**94.8**

Table 18

4.2.1 GROSS CAPEX

Information for the period January 2001 to 31st March 2002 is reported by NGG on a total UK basis only. Therefore we are unable to provide an assessment of investment performance specifically relating to WWU.

We have reviewed the unit costs and workload for the period based on comparison with trends for the period 2002/03 to 2004/05.

The following charts indicate total UK unit cost movements over the period 2001 to 2004/05.

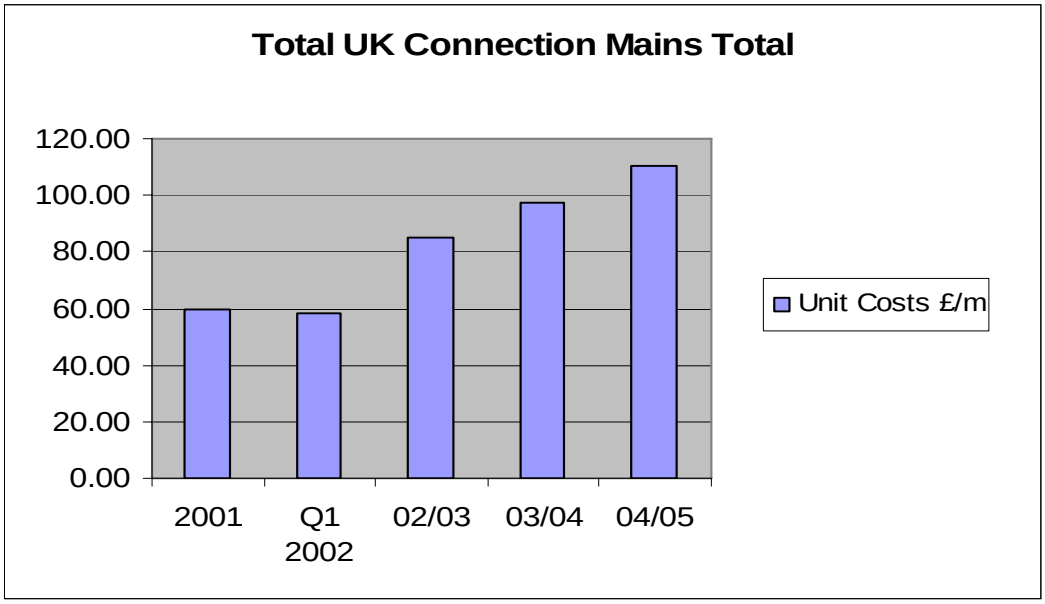


Figure 2

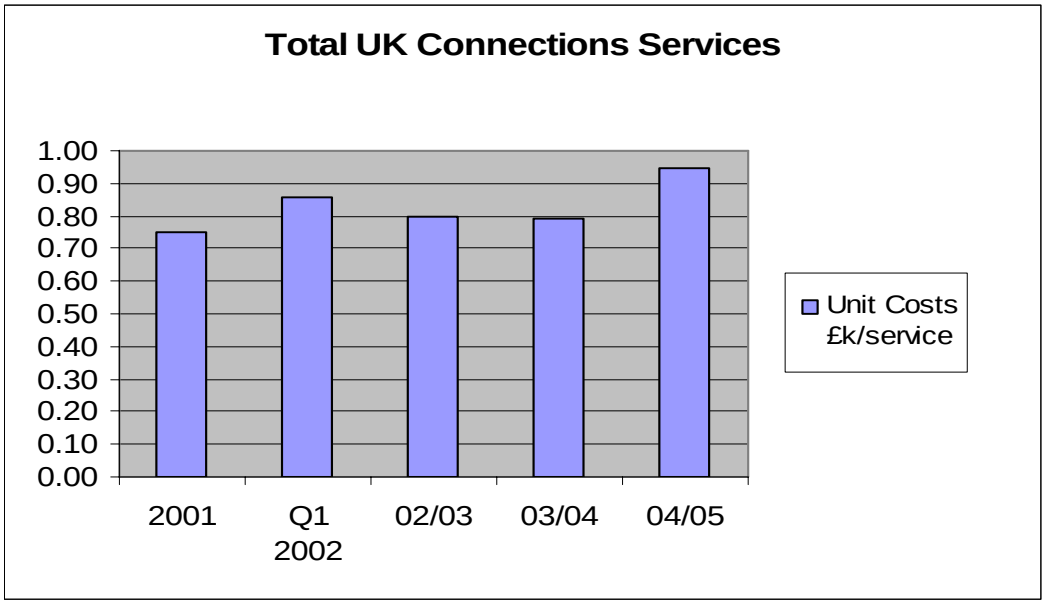


Figure 3

The following charts indicate total UK workload movements over the period 2001 to 2004/05.

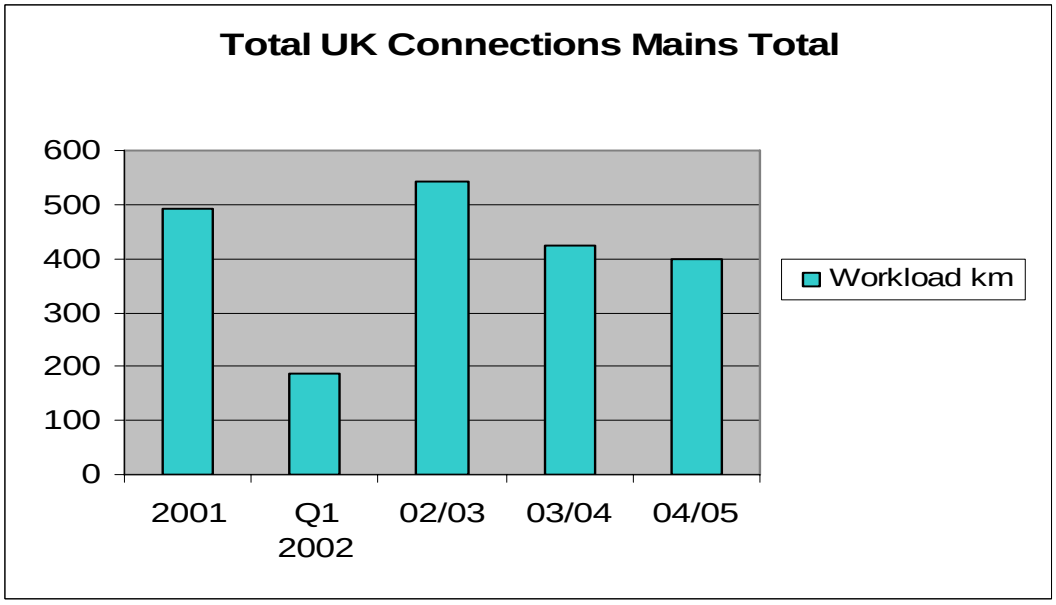


Figure 4

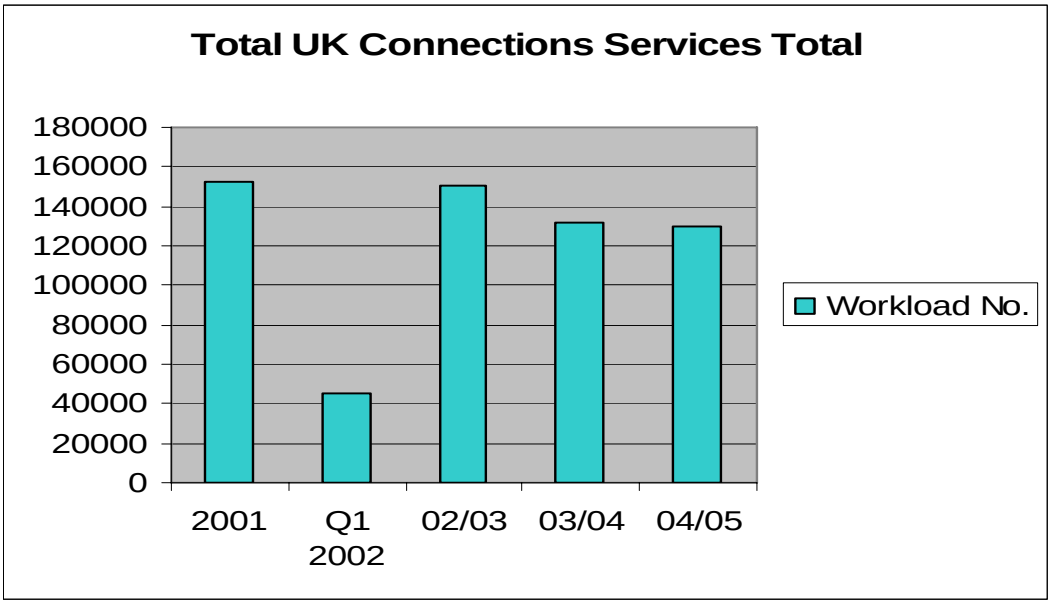


Figure 5

Connections workload and unit cost performance levels for the period 2001 to Q1 2002 are consistent with the trend to 2004/05 and no issues have been identified.

We recommend that the reported Net Capex and work volumes for connections activities are accepted.

4.2.2 NET CAPEX

Separation of connections activities was at the very early stages of implementation during the period. We are of the opinion that it would be unreasonable to assume that the Net Capex inefficiencies identified and considered in Section 4.3.3 were at the same level of effect as in the later years covered by the connections Net Capex performance information provided by NGG and detailed in Appendix 3 – Fulcrum Connections. Therefore, we recommend that adjustments should be applied to reported Net Capex at the level of -10% for time lag and -7.5% for under recovery of costs. The combined adjustment of -17.5% reduces the reported Net Capex from £114.9m to £94.8m.

4.2.3 RECOMMENDATIONS

i) We recommend that the reported Gross Capex and work volumes for connections activities are accepted as we have not identified any issues in these respects.

ii) We recommend that adjustments should be applied to reported Net Capex at the level of -10% for time lag and -7.5% for under recovery of costs. The combined adjustment of -17.5% reduces the reported Net Capex from £114.9m to £94.8m.

4.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

This section of the report provides a review of connections expenditure performance compared to allowances for the period 2002/03 to 2004/05. Workload information is included to support understanding of expenditure variances.

Expenditure and allowances are inclusive of capitalised overheads.

4.3.1 HIGH LEVEL VARIANCES ANALYSIS

4.3.1.1 Connections - Mains

The gross expenditure and workload variances for the 3 year period are -7% and -6% respectively. The actual work volume undertaken is driven by customer requirements and, therefore, we consider it to be necessary.

Contributions for the 3 year period are 48% below the allowance. The Net Capex allowance is negative for all years, i.e. contributions exceed gross expenditure, which cannot be achieved bearing in mind the various factors that drive Net Capex. These factors are described in detail in the Appendix 3 – Fulcrum Connections and are taken into account in the efficiency analysis (Section 4.3.3).

Connections (Mains) All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross (£m)	Actual	4.6	4.5	3.5	12.6
	Allowance	5.3	4.5	3.8	13.6
	Variance	-0.7	0.1	-0.3	-1.0
Contributions (£m)	Actual	2.9	2.7	1.8	7.5
	Allowance	5.5	4.7	4.2	14.5
	Variance	-2.6	-2.0	-2.4	-7.0
Net (£m)	Actual	1.6	1.8	1.6	5.1
	Allowance	-0.3	-0.2	-0.4	-0.9
	Variance	1.9	2.1	2.1	6.0
Workload (km)	Actual	96	53	68	218
	Allowance	88	76	68	232
	Variance	8	-22	1	-14

Table 19

4.3.1.2 Connections – Services

The gross expenditure and workload variances for the 3 year period are 80% and 31% respectively. The actual work volume undertaken is driven by customer requirements and, therefore, we consider it to be necessary.

Contributions for the 3 year period are 8% above the allowance which reflects the workload variance.

Connections (Services) All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross (£m)	Actual	22.7	20.0	23.1	65.7
	Allowance	13.9	12.2	10.5	36.6
	Variance	8.8	7.8	12.5	29.1
Contributions (£m)	Actual	7.3	8.5	12.3	28.1
	Allowance	9.7	8.7	7.7	26.1
	Variance	-2.4	-0.2	4.6	2.0
Net (£m)	Actual	15.4	11.5	10.8	37.7
	Allowance	4.1	3.5	2.9	10.5
	Variance	11.3	8.0	7.9	27.1
Workload (No.)	Actual	22,271	20,455	19,384	62,110
	Allowance	17,418	15,812	14,008	47,238
	Variance	4,853	4,643	5,376	14,872

Table 20

4.3.2 REASONS FOR VARIANCES

4.3.2.1 WWU Explanations

WWU explanations for the variances associated with all connections activities are summarised as follows:

i) Market forecasts assumed a lower level of activity than actually occurred, primarily because assumptions about competitive penetration did not materialise. As a consequence the BPQ understated the connections work volumes.

ii) The BPQ submission did not take proper account of the costs of the Domestic Load Connection Allowance (DLCA) and other factors that result in Net Capex.

iii) FC EPC rates rose by more than the rate of inflation.

iv) FC overheads were greater than anticipated.

4.3.2.2 Principal Factors Affecting Variances

Connections Gross Capex

In our view, the principal factors affecting the variance between PCR allowances and reported gross expenditure are:

i) Ongoing Costs of separation

The creation of FC as a separate business was an outcome of the issue of the Enforcement Order. It seems reasonable to presume that both Transco and Ofgem were aware, and accepted, that overheads on connections activities would increase as a consequence. It is not clear whether this increase in overheads was anticipated when setting the allowances.

ii) EPC prices

In 2000 the Engineering Period Contracts (EPCs) were separated into two distinct contract types (generic and connections) to remove any element of cross-subsidy and to support the development of a competitive connections market. This resulted in a higher contractor cost for the connections activity due to contractors requiring a premium for the geographic dispersion and unpredictable nature of this work, preferring instead the stability and predictability of larger long-term projects such as mains replacement.

Competitively tendered contractor rates have been increasing at a rate faster than RPI and, therefore, in excess of the rate incorporated into expenditure forecast

iii) Workload forecasts

Transco's BPQ assumptions predicted that the connections workload would fall as a consequence of competition eroding market share and, therefore, overall cost would fall. The BPQ submission proved to be unrealistic.

Connections Net Capex

The net cost of connections activities incorporates the effects of the following:

i) Domestic Load Connection Allowance (DLCA)

ii) Non-domestic allowances

iii) Employer Ordered Works (EOW)

iv) Time lag

v) Overheads associated with unaccepted quotations

vi) Under recovery of costs

The allowances significantly undervalued the effects of these factors. A broad indication of the degree is provided by calculation of the average Net Capex per service connection. The services allowances Net Capex for the 3 year review period equates to an average of the order of £222/connection whereas the actual average Net Capex is £607/connection.

The principal component of Net Capex is the DLCA which WWU has stated applies to 90% of new services to existing housing at an estimated average cost of £550/connection. If it is assumed that approximately 70% of total services are to existing housing then this is indicative of £21.5m cost attributable to the DLCA for the period 2002/03 to 2004/05.

On request, WWU has since provided the following detailed cost assessment of the DLCA which indicates a higher order of costs than originally estimated:

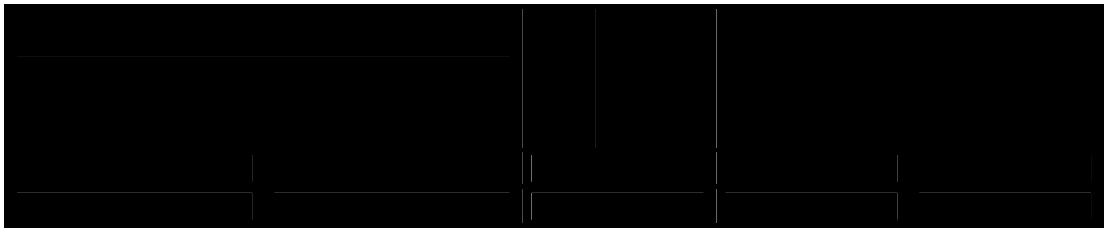


Table 21

The DLCA cost estimate at £21.5m over the period to 2004/05 represents 57% of services actual Net Capex.

It should be noted that information requested from and provided by NGG following the review meeting indicates that the total cost for all allowances, including the DLCA, is of the order of 60% of connections total Net Capex.

4.3.3 EFFICIENCY ANALYSIS

Connections Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**17.0**	**13.3**	**12.4**	**42.8**
Wasteful/Unnecessary Expenditure	**3.6**	**3.1**	**4.3**	**10.9**
Connections Mains	0.7	0.9	0.7	2.4
Connections Services	2.9	2.1	3.5	8.5
Ofgem Adjusted Net Investment	**13.5**	**10.3**	**8.1**	**31.9**
Allowed Expenditure	**10.6**	**8.1**	**6.1**	**24.9**
Additional Workload	**2.8**	**2.1**	**2.0**	**7.0**
Deferrable/Unplanned but Predictable	**0.0**	**0.0**	**0.0**	**0.0**

Table 22

4.3.3.1 Introduction

During the period 2002/03 to September 2005, Fulcrum Connections (FC) undertook all connections activities on behalf of WW. The Service Provider Contract (SPC) formed the basis for the contractual relationship between WW and FC. NGG coordinated the interface between FC and the GDNs. Appendix 3 provides information regarding Fulcrum Connections and connections business processes relevant to review of connections expenditure and assessment of efficiency. Information provided by NGG relating to the retained networks is included in the appendix and, as appropriate, forms the basis for consideration and analysis of connections expenditure for WW, and all other GDNs also.

NGG's management information systems employed to monitor and control connections expenditure were not adequate to provide accurate expenditure and work volume information to support detailed analysis in alignment with the allowances. Historic information provided by NGG has been synthesised by WWU into the activities format required by the BPQ. Discussions with WWU indicated that this has been a difficult process and, as a result, the separate activity category information cannot be relied upon entirely as a basis for accurate variance and GDN comparison analysis. Unit cost movements are inconsistent in some cases and without apparent workload balance justification.

No information has been returned regarding governors and we presume that this expenditure is allocated elsewhere within connections Capex and cannot be identified separately.

The analysis process described below has been applied to the individual activity categories within Connections. However, this report focuses on the analyses at the level of total mains and total services which we consider to be sufficiently accurate for detailed examination.

4.3.3.2 Connections Gross Capex

We have carried out various analyses to assess the efficiency of connections Gross Capex, including:

- Review of the process for monitoring expenditure and cost control, both by NGG and FC.
- Assessment of the process for determination of the Management Fee.
- Trends in unit costs.
- Unit cost comparisons
- Review of the processes to manage direct labour productivity.
- Procurement processes – EPCs and materials.

Expenditure Monitoring:

Examination and review of the management information systems employed within NGG and FC did not provide evidence of information to monitor activity expenditure efficiency, e.g. activity unit costs, at any organisational level. We conclude that the information systems employed by NGG and FC do not adequately monitor and manage the efficiency of connections expenditure and performance improvement.

It is difficult to assess the degree of efficiency benefit from appropriate MI systems but, we are of the opinion that a 3% improvement is reasonable based on the information submitted. This degree of efficiency improvement is, in our opinion, achievable with appropriate MI systems to monitor performance. Therefore, a -3% adjustment been applied to costs and this adjustment has been incorporated in the analyses.

Management Fee:

We have assessed NGG's management of the process to control and determine the Management Fee charges levied by FC. This assessment covered the management fee build–up, inclusion of a profit element and the application of the performance incentive mechanism to take into account performance against a range of KPIs substantially based on Standards of Service. No evidence was found to indicate that the charges were not determined in accordance with the SPC and we conclude that NGG has effectively managed the contractual terms on behalf of the GDNs.

Unit Cost Trends:

The analysis process incorporates examination of unit cost trends to identify exceptional misaligned movements. We regard such exceptional unit costs as an indication of inefficiency, unless there is relevant workload balance justification (based on examination of workload pipe diameter split information provided by WWU) or narrative response information providing an explanation. Where there is no evidence to justify the unit cost level we have applied an appropriate adjustment to the contract labour cost element in order to determine the efficient unit cost. .

The following graph provides an example of the effect of this adjustment on actual unit costs and an indication of the resulting efficient unit cost in alignment with the overall trend.

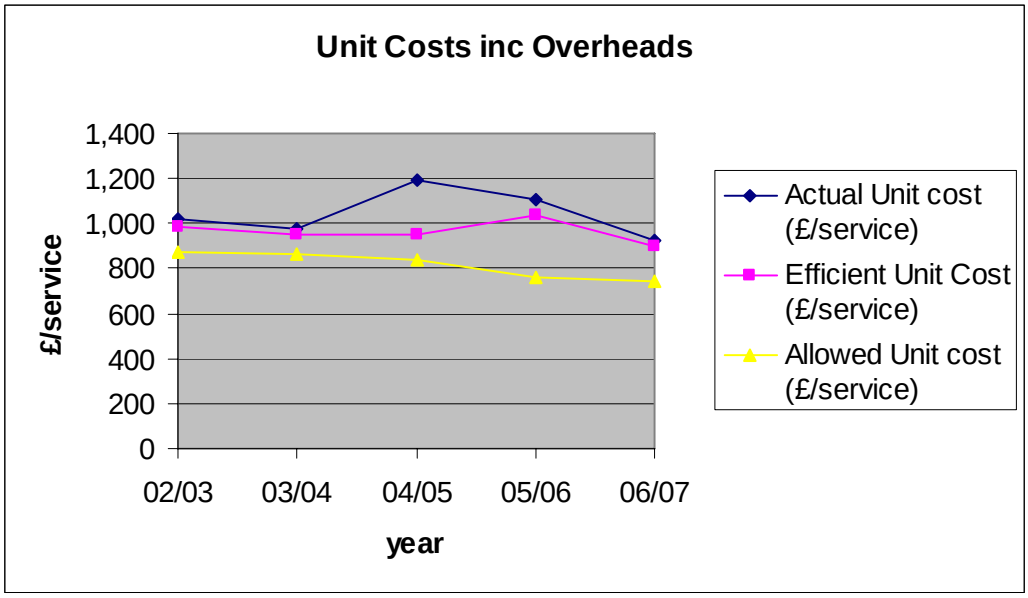


Figure 6

Unit Cost Comparisons

The charts below show the actual unit costs, inclusive of overheads, for all GDNs at 2005/06 prices adjusted by indexation to take into account regional (geographic) price variations. Indexation in this way facilitates meaningful comparison of unit cost performance. The indices used are based on the RICS Building Cost Information Service published indices, as used by Ofwat for this purpose.

The validity of these comparisons is dependent on the consistency of the expenditure and workload information reported by all GDNs. We are of the opinion that the information reported by the GDNs is not sufficiently reliable for use as a basis for comparison analysis and efficiency assessment. Therefore we regard the results as indicative only and no assessment of relative efficiency has been undertaken.

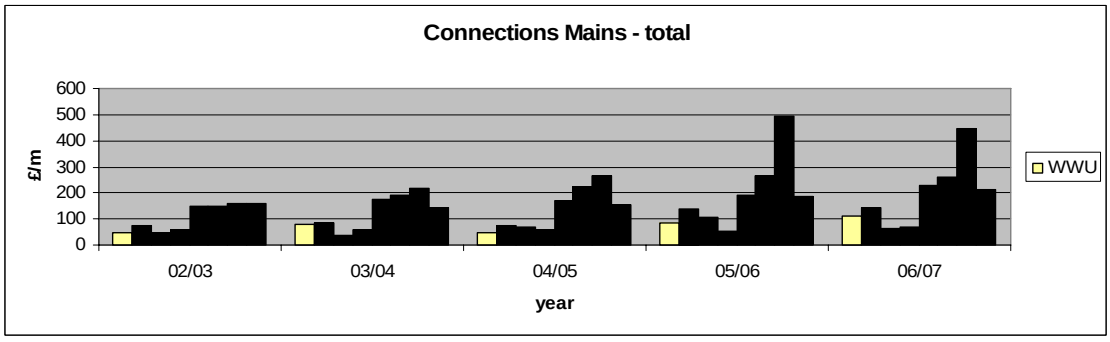


Figure 7

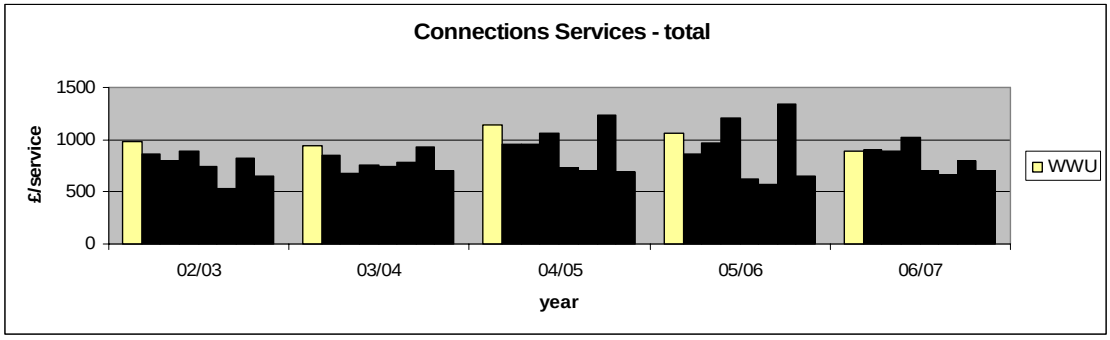


Figure 8

Direct Labour Productivity

Review of the processes to manage direct labour productivity did not reveal evidence of routine, detailed information, including unproductive time analysis, to monitor, manage and set performance improvement targets for direct labour productivity on an individual basis. We consider that direct labour cost performance is, to a degree, inefficient without the focus provided by appropriate management information and periodic review. Therefore, we have applied a -7.5% adjustment to direct labour costs in the analysis process, which in our opinion is achievable with such an approach.

Procurement – EPCs

In 2000 the Engineering Period Contracts (EPCs) were separated into two distinct contract types (generic and connections) to remove any element of cross-subsidy and to support the development of a competitive connections market.

Separation of connections activities had a direct impact on FC's competitively tendered EPC arrangements and their ability to obtain the best market rates comparable to the rates for this work type prior to separation. Connections work is geographically spread, low volume and is driven by Standards of Service performance. These factors combine to inhibit operational flexibility in terms of forward planning and work scheduling, and hence reduce efficiency. It is to be expected that a premium will have to be paid in order to attract contractors to this work, particularly in periods when contractors are in demand to meet generally high workloads in other gas and utilities activities which would be more profitable.

[redacted]

The cost effectiveness of EPC operations is highly sensitive to work mix, work volume and the demand for competent labour in the utilities contracting market. Any significant and ongoing change in these respects affects profitability and has generated requests for a review of rates to take account of the circumstances and to ensure that continuity of EPC services is not disrupted. The decision by WWU to in-source connections activities will address these issues to some degree and should alleviate the upward pressure on costs in due course.

In conclusion, we have found no evidence to indicate that the EPC procurement and management processes are inefficient.

Procurement - Materials

Connections materials required by Fulcrum are obtained via NGG group contracts and, therefore, FC derives benefit from NGG group leverage which should ensure that the best prices are available. We have found no evidence to indicate that materials procurement and usage management processes are inefficient.

Appendix 2 provides further information regarding FC procurement processes.

Summary of Adjustments to Connections Gross Capex:

The adjustments applied to connections Gross Capex are summarised as follows:

i) Improved contract labour management: -3% applied to contract labour cost for all years except where a higher adjustment for unit cost alignment is made.

ii) Contract labour cost adjustment to align unit cost with trend:

Mains: 2003/04 -15%

Services: 2004/05 -20%

iii) Improved direct labour management: -7.5% applied to direct labour costs for all years.

4.3.3.3 Connections Net Capex

We have carried out an analysis to identify the various components of connections Net Capex and assess the proportional effect of each component in terms of total Net Capex. The analysis is based on information requested from, and provided by, NGG regarding it's networks for the period 2002/03 to 2005/06.

Having reviewed the information provided by NGG and taking account of representations made by GDNs, we have adjusted the proportions for time lag, unaccepted quotations and under recovery. Also, we have taken account of evidence presented which suggests that the balance between mains and services should be amended to reflect the impact of allowances more accurately. In adjusting the values we have ensured that, taking account of relative Net Capex for mains and services, the resulting effect is consistent with the original information provided by NGG. (See Section A.3.6.8)

DLCA (Domestic Load Connection Allowance) and Other Allowances

Clearly, domestic and non-domestic allowances comprise the major element of Net Capex. In the process of discussing this matter with the GDNs and examining the information provided, we did not find any evidence of inefficiency in the calculation and application of these allowances.

Our analysis attributes 37.3% of mains Net Capex and 74.0% of services Net Capex to the cost of allowances.

Employer Ordered Works

EOW are essential works (e.g. mains upsizing to ensure network capacity to supply additional connections) additional to the customer quotation scope of work and are subject to authorisation by GDNs before work is undertaken and payment is made. We did not find any evidence of inefficiency in specification of EOW and the management processes to control the associated expenditure.

Our analysis attributes 12.7% of mains Net Capex and 3.0% of services Net Capex to the cost of EOW.

Unaccepted Quotations

The cost of providing quotations for connections work that are not accepted has been emphasised in BPQ submissions and in responses from GDNs. Our analysis takes into account the views expressed and attributes 7% of mains and services Net Capex to unaccepted quotations.

Time Lag

A significant proportion of Net Capex results from work in progress, i.e. work that was quoted before a price increase but executed after the price change. Connection charges are based on current costs at the time of quotation and, therefore, when costs are increasing under recovery occurs and this under recovery passes into Net Capex. There is no evidence of information to monitor the costs of time lag and initiate revision of the quotation process to reduce. Therefore, we conclude that action should have been taken to mitigate the cost consequences of time lag and the resultant expenditure is inefficient.

A -15% adjustment to mains and services Net Capex has been applied in the analysis process.

Under Recovery of Costs

The analysis process identified a significant component of Net Capex associated with inherent under recovery of costs and there is no evidence of routine management information to monitor and control these costs. We conclude that action should have been taken to mitigate the consequences of under recovery of costs in the customer quotation process and the resultant expenditure is therefore inefficient.

A -28.0% adjustment to mains Net Capex and a -1.0% adjustment to services Net Capex has been applied in the analysis process.

Summary of Adjustments to Connections Net Capex:

The adjustments applied to mains Net Capex are summarised as follows:

i) Time lag: -15.0% adjustment to Net Capex for all years
ii) Under recovery of costs: -28.0% adjustment to Net Capex for all years.
iii) Total adjustment: -43.0% to Net Capex for all years.

The adjustments applied to services Net Capex are summarised as follows:

i) Time lag: -15.0% adjustment to Net Capex for all years
ii) Under recovery of costs: - 1.0% adjustment to Net Capex for all years.
iii) Total adjustment: -16.0% to Net Capex for all years.

4.3.3.4 Analysis Process

The expenditure analysis process has been designed to take into account appropriate indexation for inflation, applied to both expenditure and allowances, and identified adjustments due to inefficiency.

All analysis has been undertaken at 2005/06 Prices and GDN actuals, forecasts and allowances are re-stated on this basis.

A volume analysis has been carried out to establish the allowed and additional work volumes. Our analysis has not found any evidence to determine that any of the work volumes fall into the category of deferrable or unplanned but predictable work. This category of work volume is therefore nil.

Our expenditure analysis has been carried out in three stages. At each stage of the analysis the three figures, Gross Capex, Contributions and Net Capex are restated.

The first stage is to restate the reported Gross Capex, Contributions and Net Capex.

The second stage is to adjust the Contributions for the percentage of Net Capex that has been estimated as under-recovered. Thus the Contributions are increased by this amount and the Net Capex reduced by the same amount. The Gross Capex remains unchanged.

The third stage is to adjust all three figures (Gross, Contribution & Net) for the percentage that the Gross expenditure has been estimated as being inefficient. This second stage gives the final Net Capex figure which has been used to adjust the Reported Net Investment figure.

Finally having established an estimate for the efficient Gross Capex, this sum is divided by the reported workload to obtain the efficient unit cost.

The Net Capex Investment Category table details the allocation of expenditure to categories as specified in Section 2.7

4.3.3.5 Efficiency Analysis Summary

The following tables summarise the outputs from the analysis. Efficient Net Capex and unit costs are assessed by the analysis process.

Connections – Total Mains:

Analysis Summary – Total Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Actual Gross Capex	4.6	4.5	3.5
Actual Contributions	2.9	2.7	1.8
Actual Net Capex	1.6	1.8	1.6
% of Net Capex Invalid Due to Under Recovery	43%	43%	43%
Actual Gross Capex	4.6	4.5	3.5
Contribution Adjusted for Under Recovery	3.6	3.5	2.6
Net Capex	0.9	1.0	0.9
% of Gross Capex which is Inefficient	3%	15%	3%
Efficient Gross Capex	4.4	3.9	3.4
Efficient Contributions	3.5	3.0	2.5
Efficient Net Capex	0.9	0.9	0.9
Actual Volume (km)	96	53	68
Efficient Unit Cost (£/m)	46	72	50

Table 23

Analysis Summary – Total Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Reported Net Investment	1.6	1.8	1.6
Wasteful/Unnecessary Expenditure	0.7	0.9	0.7
Allowed Workload	0.8	0.9	0.9
Additional Workload	0.1	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0

Table 24

Connections – Total Services:

Analysis Summary – Total Services All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Actual Gross Capex	22.7	20.0	23.1
Actual Contributions	7.3	8.5	12.3
Actual Net Capex	15.4	11.5	10.8
% of Net Capex Invalid Due to Under Recovery	16%	16%	16%
Actual Gross Capex	22.7	20.0	23.1
Contribution Adjusted for Under Recovery	9.8	10.3	14.0
Net Capex	12.9	9.7	9.0
% of Gross Capex which is Inefficient	3%	3%	20%
Efficient Gross Capex	22.0	19.4	18.4
Efficient Contributions	9.5	10.0	11.2
Efficient Net Capex	12.6	9.4	7.2
Actual Volume (No.)	22,271	20,455	19,384
Efficient Unit Cost (£/service)	989	947	952

Table 25

Analysis Summary – Total Services All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Reported Net Investment	15.4	11.5	10.8
Wasteful/Unnecessary Expenditure	2.9	2.1	3.5
Allowed Workload	9.8	7.2	5.2
Additional Workload	2.7	2.1	2.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0

Table 26

4.4 FORECAST EXPENDITURE

Connections Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	17.0	13.3	12.4	**11.9**	**7.4**	**62.0**	**7.4**
Adjustments	3.6	3.1	4.3	**3.2**	**2.0**	**16.2**	**2.3**
Connections Mains	0.7	0.9	0.7	1.3	1.1	4.8	1.3
Connections Services	2.9	2.1	3.5	2.0	0.9	11.4	1.0
Ofgem Adjusted Forecast Net Investment	13.5	10.3	8.1	**8.7**	**5.3**	**45.8**	**5.1**
Allowed Expenditure	10.6	8.1	6.1	**6.0**	**3.8**	**34.7**	
Additional Workload	2.8	2.1	2.0	**2.7**	**1.5**	**11.1**	
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	

Table 27

[redacted]

Traffic Management Act (TMA)

WWU has confirmed that forecasts for 2006/07 and 2007/08 include expenditure associated with the Traffic Management Act (TMA), as follows.

i) 2006/07 – Mains £0.25m, Services £0.8m

ii) 2007/08 – Mains £0.5m, Services £1.1m

These costs have been deducted from the forecasts to ensure that the GDN analyses are on a consistent basis.

4.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

4.4.1.1 Connections – Mains

The gross expenditure and workload variances for the 2 year period are 80% and -3% respectively.

Contributions for the 2 year period are 3% in excess of the allowance. The Net Capex allowance is negative, i.e. contributions exceed gross expenditure, which cannot be achieved bearing in mind the various factors that drive Net Capex. These factors are described in detail in the Appendix 3 – Fulcrum Connections and are taken into account in the efficiency analysis (Section 4.3.3).

Connections (Mains) All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross (£m)	Actual	4.6	4.5	3.5	5.1	6.5	24.1
	Allowance	5.3	4.5	3.8	3.3	3.1	20.0
	Variance	-0.7	0.1	-0.3	1.8	3.3	4.2
Contributions (£m)	Actual	2.9	2.7	1.8	2.6	4.2	14.3
	Allowance	5.5	4.7	4.2	3.5	3.1	21.1
	Variance	-2.6	-2.0	-2.4	-0.9	1.1	-6.9
Net (£m)	Actual	1.6	1.8	1.6	2.5	2.3	9.9
	Allowance	-0.3	-0.2	-0.4	-0.2	0.0	-1.2
	Variance	1.9	2.1	2.1	2.7	2.3	11.0
Workload (km)	Actual	96	53	68	56	59	333
	Allowance	88	76	68	61	57	349
	Variance	8	-22	1	-5	2	-17

Table 28.

Connections - Services

The gross expenditure and workload variances for the 2 year period are 121% and 55% respectively. The actual work volume undertaken is driven by customer requirements and, therefore, we consider it to be necessary.

Contributions for the 2 year period are 64% above the allowance which reflects the workload variance.

Connections (Services) All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross (£m)	Actual	22.7	20.0	23.1	20.2	14.3	100.2
	Allowance	13.9	12.2	10.5	8.4	7.2	52.3
	Variance	8.8	7.8	12.5	11.8	7.1	48.0
Contributions (£m)	Actual	7.3	8.5	12.3	10.8	9.2	48.1
	Allowance	9.7	8.7	7.7	6.4	5.8	38.3
	Variance	-2.4	-0.2	4.6	4.4	3.4	9.7
Net (£m)	Actual	15.4	11.5	10.8	9.4	5.1	52.2
	Allowance	4.1	3.5	2.9	2.0	1.4	13.9
	Variance	11.3	8.0	7.9	7.4	3.7	38.3
Workload (No.)	Actual	22,271	20,455	19,384	18,258	16,348	96,716
	Allowance	17,418	15,812	14,008	11,676	10,608	69,521
	Variance	4,853	4,643	5,376	6,582	5,740	27,195

Table 29

4.4.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

We presume that the forecasts for 2005/06 and 2006/07are based on historic investment performance and, therefore, the reasons stated by WWU for historic variances also influence the forecasts. On this basis our views on the variances associated with historic expenditure (Apr 2002 to Mar 2005) are also relevant in terms of the forecasts. See Section 4.3.3.

4.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

4.4.3.1 In-sourcing of connections activities

During the period 2002/03 to September 2005, Fulcrum Connections undertook all connections activities on behalf of WW. The Service Provider Contract (SPC) formed the basis for the contractual relationship between WWU and FC. NGG coordinated the interface between FC and the GDNs.

Immediately following acquisition of the network, WWU declared the intention to in-source all connections activities and served notice to terminate the contract with Fulcrum Connections (FC) with effect from September 2005. The primary concerns that led to that decision were regarding FC's ability to achieve standards of service, as required by the licence, and the consequential effect on WWU's reputation. The Board Paper associated with the decision also makes reference to high cost of delivery by FC.

In terms of cost benefit, the paper states that the main efficiency gains expected are in relation to office based costs, assessed at a saving of £7m p.a. but offset in the first year by start-up costs of £3.3m. EPC operational costs charged by FC were considered accurate with little scope to achieve reductions. WWU has implemented new systems to manage connections activities efficiently and ensure that Standards of Service are met.

WWU has indicated that the cost of connections for the years 2005/06 and 2006/07 has been reduced in the BPQ in overall terms and forecasts will be more accurate in due course when the costs of the in-sourced connections business are fully understood.

We presume that the forecasts are based on historic performance and take no account of the effects of in-sourcing.

4.4.3.2 Analysis Process

As stated previously, we presume that the forecasts for 2005/06 and 2006/07are based on historic performance. Therefore, the inefficiencies identified and quantified for the period 2002/03 to 2004/05 will also influence the forecasts which, in our opinion, are inaccurate as a consequence. Our analysis process for the historic period has also been applied to the forecasts in order to assess the degree of inaccuracy.

Section 4.3.3 provides full details of the analysis process and the adjustments applied for the forecast period follow in this section of the report.

Summary of adjustments to connections Gross Capex:

The adjustments applied to forecast gross connections Capex are summarised as follows:

i) Improved contract labour management: -3% applied to contract labour cost for all years except where a higher adjustment for unit cost alignment is made.

ii) Contract labour cost adjustment to align unit cost with trend:

Mains:	2005/06	-25%
Mains:	2006/07	-30%
Services:	2005/06	-10%

iii) Improved direct labour management: -7.5% applied to direct labour costs for all years.

Summary of adjustments to connections Net Capex:

The adjustments applied to mains Net Capex are summarised as follows:

i) Time lag: -15.0% adjustment to Net Capex for all years
ii) Under recovery of costs: -28.0% adjustment to Net Capex for all years.
iii) Total adjustment: -43.0% to Net Capex for all years.

The adjustments applied to services Net Capex are summarised as follows:

i) Time lag: -15.0% adjustment to Net Capex for all years
ii) Under recovery of costs: - 1.0% adjustment to Net Capex for all years.
iii) Total adjustment: -16.0% to Net Capex for all years.

4.4.3.3 Analysis summary:

The following tables summarise the outputs from the analysis. Efficient Net Capex and unit costs are assessed by the analysis process and are indicated.

Connections – Total Mains:

Analysis Summary – Total Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Actual Gross Capex	4.6	4.5	3.5	5.1	6.5
Actual Contributions	2.9	2.7	1.8	2.6	4.2
Actual Net Capex	1.6	1.8	1.6	2.5	2.3
% of Net Capex Invalid Due to Under Recovery	43%	43%	43%	43%	43%
Actual Gross Capex	4.6	4.5	3.5	5.1	6.5
Contribution Adjusted for Under Recovery	3.6	3.5	2.6	3.7	5.2
Net Capex	0.9	1.0	0.9	1.4	1.3
% of Gross Capex which is Inefficient	3%	15%	3%	12%	12%
Efficient Gross Capex	4.4	3.9	3.4	4.5	5.6
Efficient Contributions	3.5	3.0	2.5	3.2	4.5
Efficient Net Capex	0.9	0.9	0.9	1.2	1.1
Actual Volume (km)	96	53	68	56	59
Efficient Unit Cost (£/m)	46	72	50	80	97

Table 30

Analysis Summary – Total Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Reported Net Investment	1.6	1.8	1.6	2.5	2.3
Wasteful/Unnecessary Expenditure	0.7	0.9	0.7	1.3	1.1
Allowed Workload	0.8	0.9	0.9	1.2	1.1
Additional Workload	0.1	0.0	0.0	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	0.0	0.0

Table 31

Connections – Total Services:

Analysis Summary – Total Services All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Actual Gross Capex	22.7	20.0	23.1	20.2	14.3
Actual Contributions	7.3	8.5	12.3	10.8	9.2
Actual Net Capex	15.4	11.5	10.8	9.4	5.1
% of Net Capex Invalid Due to Under Recovery	16%	16%	16%	16%	16%
Actual Gross Capex	22.7	20.0	23.1	20.2	14.3
Contribution Adjusted for Under Recovery	9.8	10.3	14.0	12.3	10.0
Net Capex	12.9	9.7	9.0	7.9	4.3
% of Gross Capex which is Inefficient	3%	3%	20%	6%	2%
Efficient Gross Capex	22.0	19.4	18.4	19.0	13.9
Efficient Contributions	9.5	10.0	11.2	11.6	9.8
Efficient Net Capex	12.6	9.4	7.2	7.4	4.2
Actual Volume (No.)	22,271	20,455	19,384	18,258	16,348
Efficient Unit Cost (£/service)	989	947	952	1,039	853

Table 32

Analysis Summary – Total Services All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Reported Net Investment	15.4	11.5	10.8	9.4	5.1
Wasteful/Unnecessary Expenditure	2.9	2.1	3.5	2.0	0.9
Allowed Workload	9.8	7.2	5.2	4.7	2.7
Additional Workload	2.7	2.1	2.0	2.7	1.5
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	0.0	0.0

Table 33

4.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

4.4.4.1 Analysis Process

The efficiency analysis process detailed in Section 4.3.3 is applied to assess efficient/adjusted unit costs. We recommend that forecast expenditure for 2007/08 reflects the historic efficient unit cost trend and we have adjusted the reported forecasts on this basis.

4.4.4.2 Reported Workload Trend

Connections – Mains

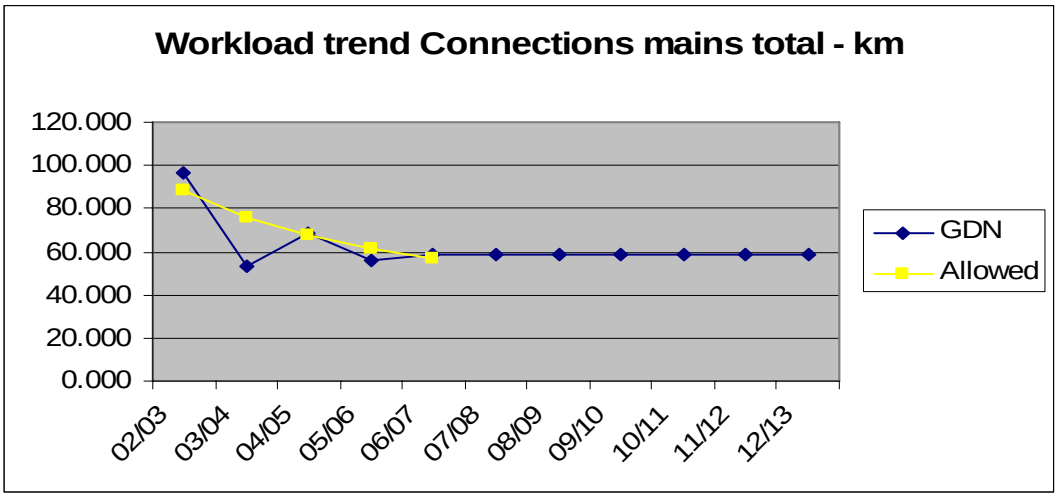


Figure 9

Mains workload forecasts are aligned with historic trends and no issues are identified in this respect. Therefore we recommend that no adjustment is applied to the reported workload.

Connections - Services

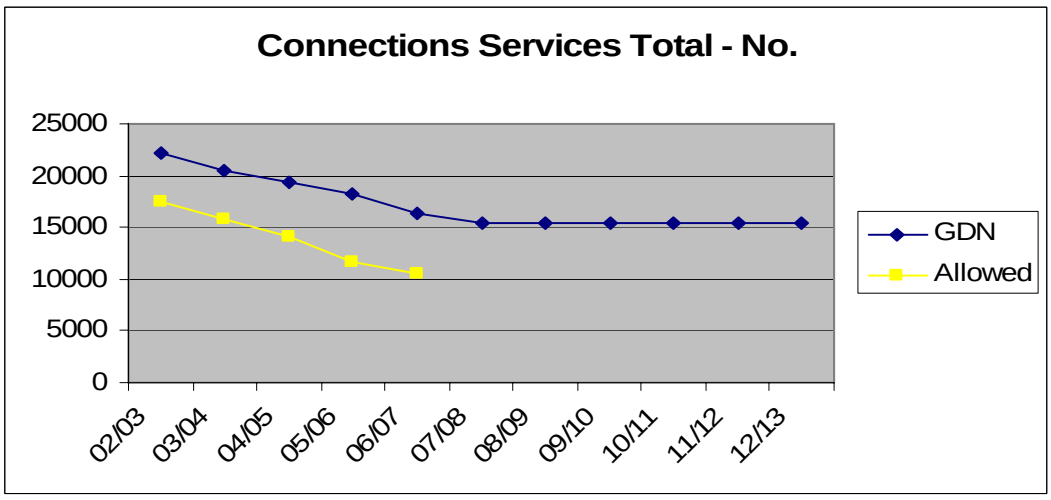


Figure 10

Services workload forecasts are aligned with historic trends and no issues are identified in this respect. Therefore we recommend that no adjustment is applied to the reported workload.

4.4.4.3 Forecast Assessment

Net Capex

A critical issue in terms of forecast accuracy for the period post 2006/07 is assessment of efficient connections Net Capex for both mains and services activities. The factors affecting Net Capex are detailed in Appendix 3 **-** Fulcrum Connections and are considered in Section 4.3.3 – Efficiency Analysis. A clear understanding of the cost implications of the factors is essential to inform the Net Capex forecasting process. We recommend that WWU identifies actions to address the inefficiencies identified and applies appropriate assumptions in this respect to develop an accurate assessment of Net Capex for 2007/08. As a minimum requirement, we are of the opinion that the reported mains and services Net Capex forecast should be adjusted in accordance with Section 4.3.3.This results in an adjustment of -£2.3m.

Also, we recommend that management information systems employed include comprehensive, detailed analysis of Net Capex performance to ensure effective monitoring, and to inform review of standard charges.

Gross Capex - Mains

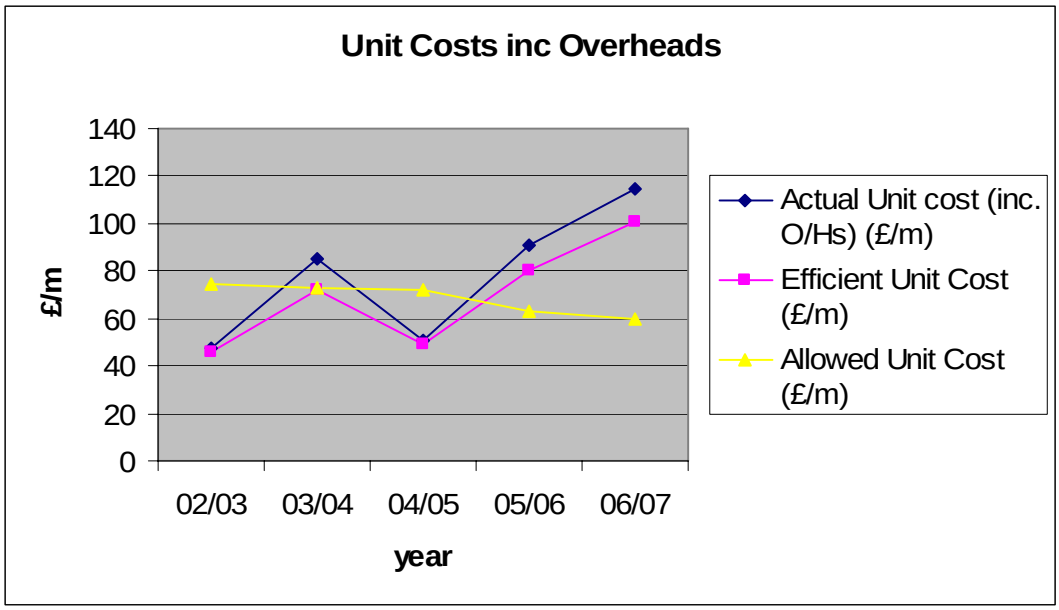


Figure 11

The workload balance does not provide any indication of the reason for the actual unit cost increases in 2003/04, 2005/06 and 2006/07. This matter has been addressed in the analysis process by adjustments to determine the efficient unit cost.

We recommend that forecast expenditure is based on the historic efficient unit cost trend. On this basis the unit cost inclusive of overheads will be in the range £80/m to £100/m.

The mid-point unit cost of £90/m applied to the forecast workload at 58.5 km results in an indicative 2007/08 expenditure forecast of £5.3m, including overheads, for connections total mains. Compared to the reported forecast at £6.7m, the variance is -£1.4m.

Gross Capex - Services

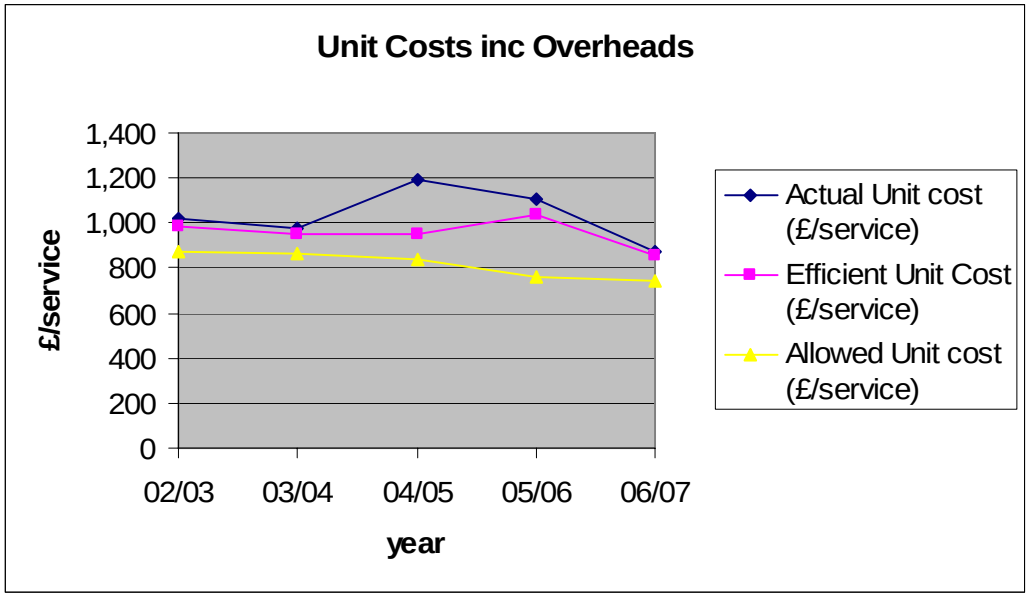


Figure 12

The workload balance does not provide any indication of the reason for the actual unit cost increases in 2004/05 and 2005/06. This matter has been addressed in the analysis process by adjustments to determine the efficient unit cost.

We recommend that forecast expenditure is based on the historic efficient unit cost trend. On this basis the unit cost inclusive of overheads will be in the range £800/service to £900/service.

The mid-point cost of £850/service applied to the forecast workload at 15384 results in an indicative 2007/08 expenditure forecast of £13.1m, including overheads, for connections total services. Compared to the reported forecast at £13.9m, the variance is -£0.8m.

4.4.4.4 Recommendations

i) We recommend that management information systems employed include comprehensive, detailed analysis of Net Capex performance to ensure effective monitoring, and to inform review of standard charges.

ii) We recommend that no adjustment is applied to the reported workloads for mains and services.

iii) We recommend that WWU identifies actions to address the inefficiencies associated with Net Capex performance and applies appropriate assumptions in this respect to develop accurate Net Capex forecasts for 2007/08.

As a minimum requirement, we are of the opinion that the reported mains and services Net Capex forecast should be adjusted in accordance with Section 4.3.3.This results in an adjustment of -£2.3m.

iv) Our recommendations regarding the forecasts are summarised below:

Summary – Connections Forecast 2007/08 All figures £m 2005/06 Prices	Mains	Services
Reported Gross Investment Forecast	**6.7**	**13.9**
Reported Contributions	**4.3**	**8.9**
Reported Net Capex	**2.4**	**5.0**
Ofgem Adjusted Gross Investment Forecast	**5.3**	**13.1**
Ofgem Adjusted Contributions	**4.2**	**9.1**
Ofgem Adjusted Net Capex	**1.1**	**4.0**

Table 34

4.5 FORECAST TRENDS (2002 TO 2013)

4.5.1 HIGH LEVEL TREND

Connections – Mains

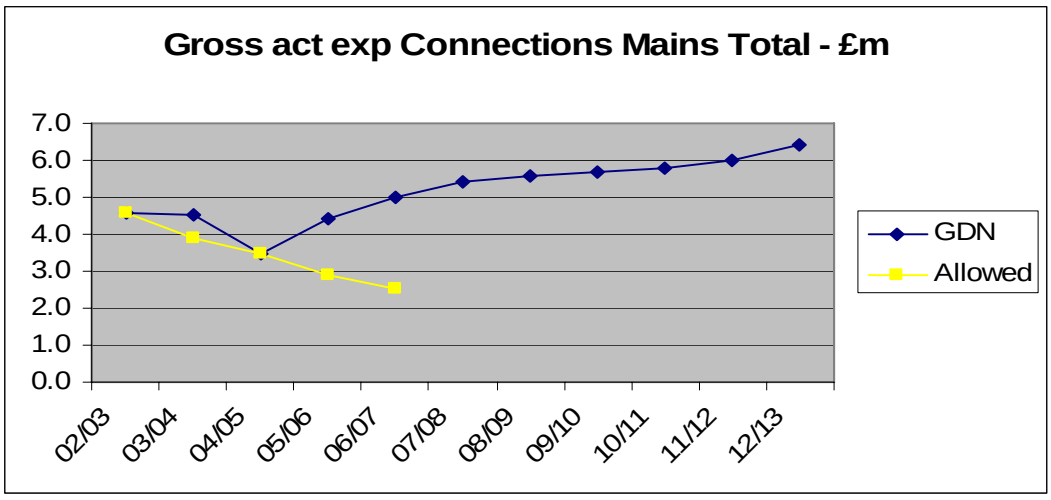


Figure 13

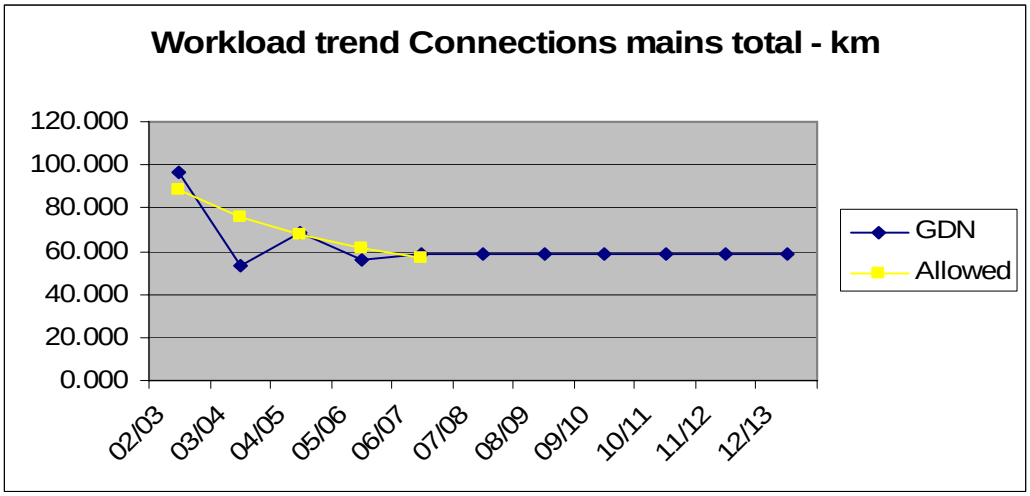


Figure 14

Connections – Services

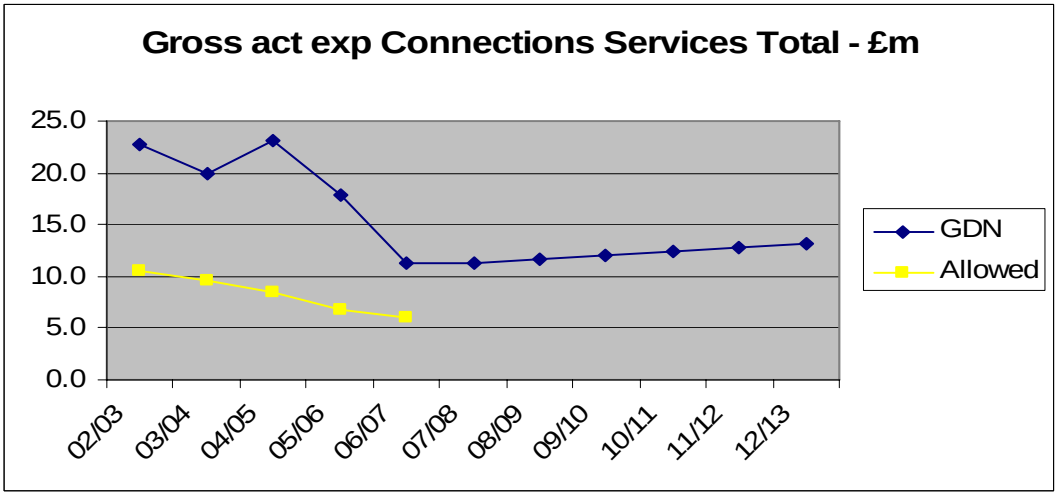


Figure 15

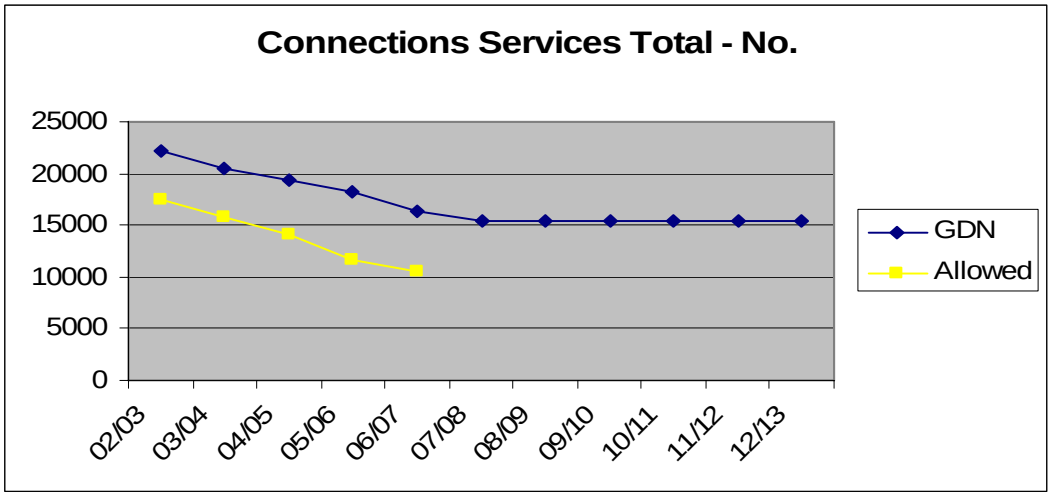


Figure 16

4.5.2 COMMENTS ON TREND

We have not identified any issues regarding the mains and services forecast workload trends.

The mains workload forecast is flat whereas gross expenditure is forecast to increase significantly to 2012/13. We recommend that this matter is re-visited under the main review.

5 MAINS AND GOVERNOR CAPEX

5.1 SUMMARY OF FINDINGS

This section considers the combined Reinforcement Mains and Governors Capex.

5.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**65.0**	**10.4**	**75.4**
Wasteful/Unnecessary Expenditure	**0.0**	**0.0**	**0.0**
Ofgem Adjusted Net Investment	**65.0**	**10.4**	**75.4**

Table 35

The Net Capex summary figures are given in Table 34. Reported Net Investment as provided by the GDN and PB Power's recommendation for Ofgem's adjusted Net Investment.

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Unit cost trends and comparisons.
- Review of workload trends.
- Review of expenditure trends

Key Issues

- Information for the period January 2001 to 31st March 2002 is reported by NGG on a total UK basis only. Therefore we are unable to provide an assessment of investment performance specifically relating to WWU.

Categorisation of Incurred Expenditure

- We consider the total expenditure of £75.4m to be efficiently incurred.

5.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

The Net Capex summary figures are given in Table 35. These show the initial Allowed Net Investment from the last control, WWU's Reported Net Investment and finally PB Power's recommendation for Ofgem's Adjusted Net Investment.

Overspend

- The GDN Reported Net Investment is forecast to be £36.0m which exceeds the Net Capex allowance by £14.3m (66%).

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of processes to monitor and control expenditure & projects.
- Assessment of Net Capex drivers.
- Unit cost trends and comparisons.
- Management of contract arrangements.
- Review of processes to manage direct labour productivity.
- Procurement policies and procedures.

Key Issues

- Data quality, particularly for connections activities, has inhibited analysis and comparison of cost performance.

Categorisation of Incurred Expenditure

- £1.2m of reinforcement mains and governors expenditure has been assessed as inefficient.

Categorisation of Forecast Expenditure

- £0.2m of reinforcement mains and governors expenditure has been assessed as inefficient.

Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**5.1**		**4.4**		**4.4**		**4.0**		**3.7**		**21.6**		
Total GDN Variance	**10.2**	**201%**	**2.3**	**51%**	**-0.9**	**-21%**	**1.8**	**44%**	**1.0**	**27%**	**14.3**	**66%**	
Reported Net Investment	**15.3**		**6.7**		**3.4**		**5.8**		**4.8**		**36.0**		**6.2**
Wasteful/Unnecessary Actual Expenditure	**0.5**		**0.6**		**0.1**						**1.2**		
Adjustments to Forecasts							**0.1**		**0.1**		**0.2**		**0.2**
Ofgem Adjusted Net Investment	**14.8**		**6.1**		**3.3**		**5.7**		**4.6**		**34.6**		**6.0**
Allowed Expenditure	**8.2**		**6.1**		**3.3**		**4.3**		**4.5**		**26.5**		
Additional Workload	**6.6**		**0.0**		**0.0**		**1.3**		**0.1**		**8.0**		
Deferrable/Unplanned but Predictable	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		

Table 36

5.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**65.0**	**10.4**	**75.4**
Wasteful/Unnecessary Expenditure	**0.0**	**0.0**	**0.0**
Ofgem Adjusted Net Investment	**65.0**	**10.4**	**75.4**

Table 37

5.2.1 ANALYSIS PROCESS

Information for the period January 2001 to 31st March 2002 is reported by NGG on a total UK basis only. Therefore we are unable to provide an assessment of investment performance specifically relating to WWU.

We have reviewed reinforcement mains unit cost performance and workload for the period based on comparison with trends for the period 2002/03 to 2004/05. Similar analysis for governors is not possible as workload information has not been provided.

Governors gross expenditure levels for the period 2001 to Q1 2002 are consistent with the trend to 2004/05 and no issues have been identified in this respect.

The following chart indicates the reinforcement mains total UK unit cost movements over the period 2001 to 2004/05.

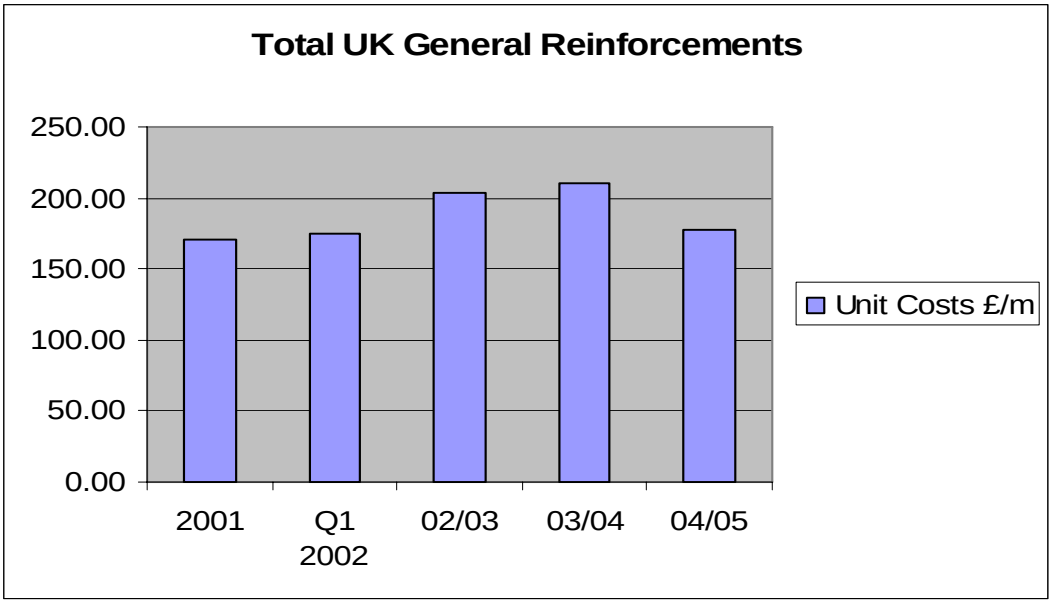


Figure 17

Reinforcement mains unit cost performance levels for the period 2001 to Q1 2002 are consistent with the trend to 2004/05 and no issues have been identified in this respect.

The following chart indicates the total UK workload movements over the period 2001 to 2004/05.

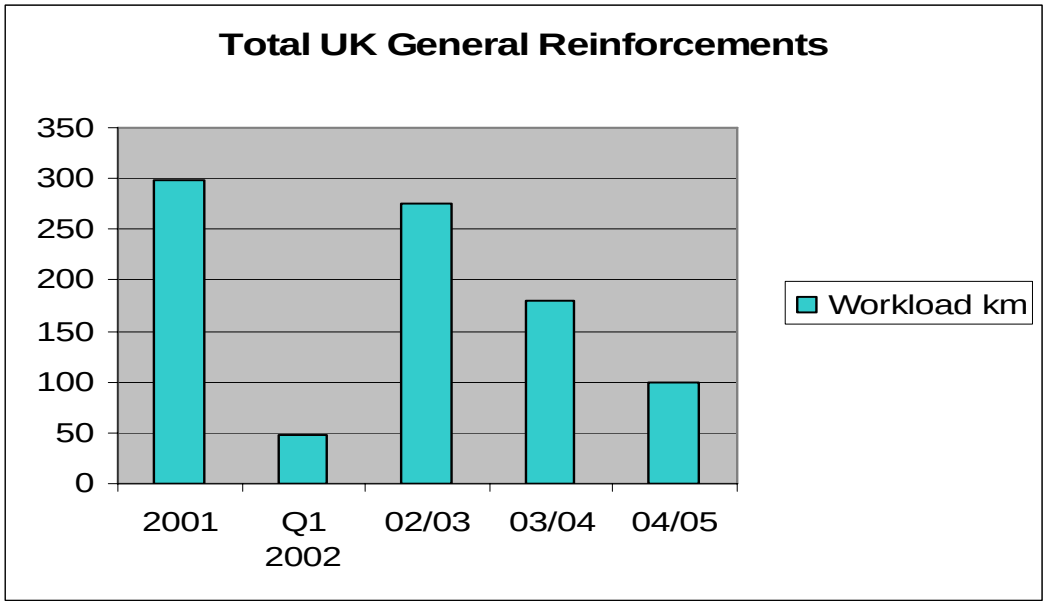


Figure 18

We presume that the high reinforcement mains workload in 2001 resulted from the Transco initiated validation programme in 1999/2000 to validate all low and medium pressure networks and was necessary to ensure security of supply.

5.2.2 RECOMMENDATIONS

We recommend that the reported Gross Capex for reinforcement mains and governors activities be accepted as we have not identified any investment efficiency issues that would indicate otherwise.

5.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

5.3.1 HIGH LEVEL VARIANCES ANALYSIS

This section of the report provides a review of reinforcement mains and governors expenditure performance compared to allowances for the period 2002/03 to 2004/05. Workload information is included to support understanding of expenditure variances.

Expenditure and allowances are inclusive of capitalised overheads.

5.3.1.1 Reinforcement mains

The gross expenditure and workload variances for the 3 year period are 84% and 16% respectively.

Mains - General Reinforcement All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross (£m)	Actual	13.6	5.7	2.7	22.0
	Allowance	4.4	3.8	3.7	11.9
	Variance	9.2	1.9	-1.0	10.0
Workload (km)	Actual	57	20	15	92
	Allowance	29	26	25	79
	Variance	29	-6	-10	13

Table 38

5.3.1.2 Governors

The gross expenditure is in excess of the allowance for the 3 year period and the variance is 80%. The allowances did not specify workload for governors and variances in this respect are not available therefore.

We do not expect any contributions associated with this activity category and, therefore, we presume that the £0.04m reported in 2004/05 is an error.

Governors All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross	Actual	1.7	1.0	0.8	3.5
	Allowance	0.6	0.6	0.7	2.0
	Variance	1.1	0.4	0.1	1.6
Contributions	Actual	0.0	0.0	0.0	0.0
	Allowance	0.0	0.0	0.0	0.0
	Variance	0.0	0.0	0.0	0.0
Net	Actual	1.7	1.0	0.8	3.5
	Allowance	0.6	0.6	0.7	2.0
	Variance	1.1	0.4	0.1	1.5

Table 39

5.3.2 REASONS FOR VARIANCES

5.3.2.1 Reinforcement Mains

The 2002/03 actual work volume is 100% in excess of the allowance which resulted in a variance of £9.2m for that year. This substantially accounts for the total variance of £10.0m over the 3 year period to 2004/05.

WWU state that the increase in workload in 2002/03 resulted from a Transco initiated validation programme in 1999/2000 to validate all low and medium pressure networks which led to higher levels of reinforcement mains expenditure during 2002/03.

We are of the opinion that the full workload implications of the validation process were not evaluated prior to submission of the BPQ forecasts and were not predictable at that time therefore.

We assume that WWU policies and procedures regarding network planning were followed and the reinforcement works identified were necessary to ensure security of supply. There is no evidence to indicate that the additional work volume in 2002/03 was unnecessary.

5.3.2.2 Governors

WWU indicate that the principal variance, £1.1m in 2002/03, is associated with the increased work volume resulting from the Transco network validation programme. There is no evidence to indicate that this additional work volume was unnecessary.

The overall workload balance is biased towards growth which is driven by reinforcement/security of supply, and is necessary therefore.

5.3.3 EFFICIENCY ANALYSIS

Mains and Governor Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**15.3**	**6.7**	**3.4**	**25.4**
Wasteful/Unnecessary Expenditure	**0.5**	**0.6**	**0.1**	**1.2**
Reinforcement Mains	0.5	0.6	0.1	1.1
Governors	0.0	0.0	0.0	0.1
Ofgem Adjusted Net Investment	**14.8**	**6.1**	**3.3**	**24.3**
Allowed Expenditure	**8.2**	**6.1**	**3.3**	**17.7**
Additional Workload	**6.6**	**0.0**	**0.0**	**6.6**
Deferrable/Unplanned but Predictable	**0.0**	**0.0**	**0.0**	**0.0**

Table 40

5.3.3.1 Gross Capex

We have carried out various analyses to assess the efficiency of reinforcement mains and governors Gross Capex, including:

- Trends in unit costs.
- Unit cost comparisons
- Review of the processes to manage direct labour productivity.
- Project management processes
- Project review
- Overspend project review
- Procurement processes – EPCs and materials.

Unit Cost Trends

The analysis process incorporates examination of unit cost trends to identify exceptional misaligned movements. We regard such exceptional unit costs as an indication of inefficiency, unless there is relevant workload balance justification or narrative response information providing an explanation. Workload balance is assessed by examination of workload pipe diameter split information and governor category split between replacement and growth. Where there is no evidence to justify the unit cost level we have applied an appropriate adjustment to the contract labour cost element in order to determine the efficient unit cost.

The following graph provides an example of the effect of this adjustment on actual unit costs and an indication of the resulting efficient unit cost in alignment with the overall trend.

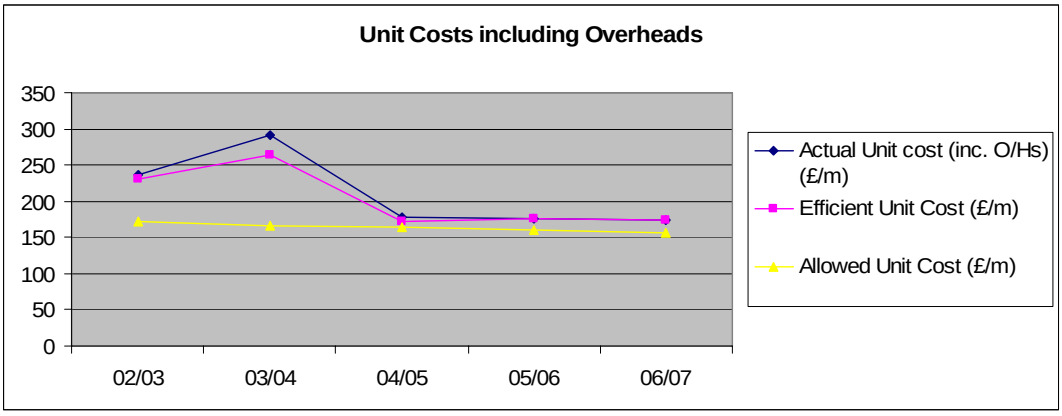


Figure 19

Unit Cost Comparisons

The charts below show the actual unit costs, inclusive of overheads, for all GDNs at 2005/06 prices adjusted by indexation to take into account regional (geographic) price variations. Indexation in this way facilitates meaningful comparison of unit cost performance. The indices used are based on the RICS Building Cost Information Service published indices, as used by Ofwat for this purpose.

The validity of these comparisons is dependent on the consistency of the expenditure and workload information reported by all GDNs. We are of the opinion that the information reported by the GDNs is not sufficiently reliable for use as a basis for comparison analysis and efficiency assessment. Therefore we regard the results as indicative only and no assessment of relative efficiency has been undertaken.

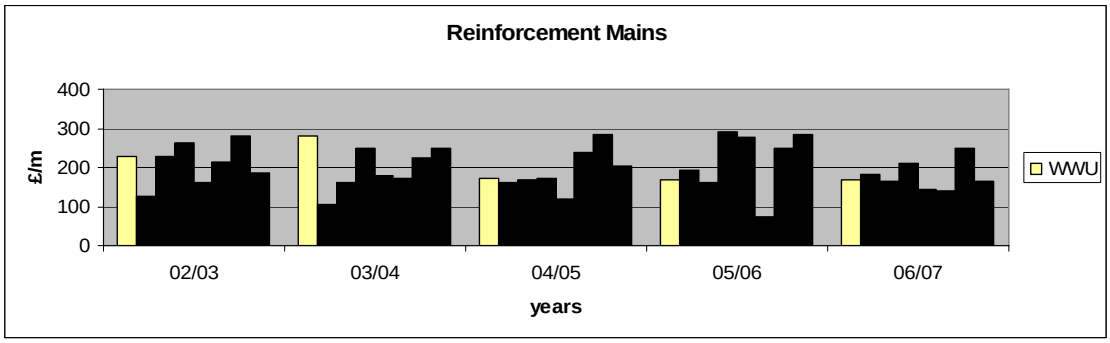


Figure 20

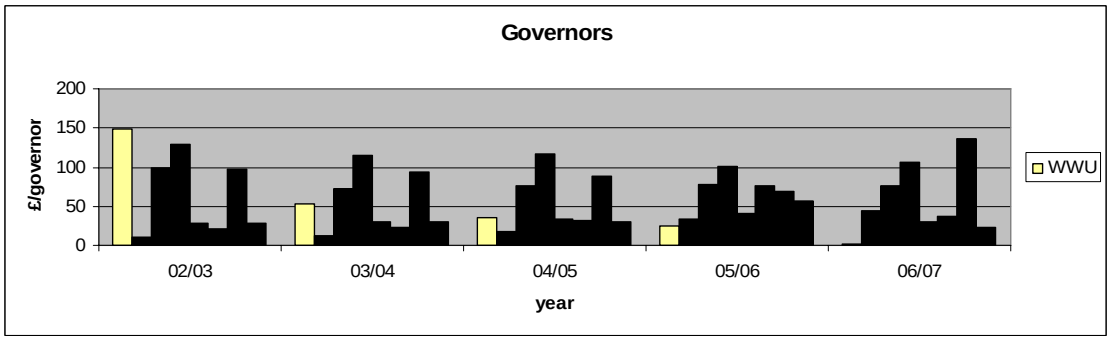


Figure 21

Direct Labour Productivity

Review of the processes to manage direct labour productivity did not reveal evidence of routine, detailed information, including unproductive time analysis, to monitor, manage and set performance improvement targets for direct labour productivity on an individual basis. We consider that direct labour cost performance is, to a degree, inefficient without the focus provided by appropriate management information and periodic review. Therefore, we have applied a -7.5% adjustment to direct labour costs in the analysis process, which in our opinion is achievable with such an approach.

Project Management Processes

WW project management processes prior to acquisition of the network in June 2005 were in accordance with NGG Policies and Procedures and were subject to governance by the NGG Distribution Project Sanctioning Committee (DPSC). DPSC Governance included Investment Guidelines and review of authority levels. WWU has indicated that current project management processes are unchanged from previous practice, with exception of financial authority levels which were revised in January 2006. WWU's Investment Committee (IC) has taken over the role of the DPSC.

All operational Capex projects > £50k are submitted for review and approval by the IC. Comprehensive project monitoring processes are established and costs are monitored to ensure that control mechanisms are applied. Live projects are monitored and projects forecast to fall outside of policy tolerances (-15%/+10%) are subject to re-submission.

Monthly MI reports include all major projects (> £250k) supported periodically by updates from the project manager.

Examination of project documents confirms that submissions include:

- Alternative proposals, including cost estimates.
- Consideration of network policy mains replacement plans to ensure that the optimum combined solution is adopted.
- Least cost optimum engineering solution recommendation
- Financial impacts, risks and sensitivities

A Project Completion Report (PCR) is required for all projects and these reports are approved in accordance with delegated levels of authority. The completion report is designed to review all aspects of the project against the original approval, including scope of works, expenditure, timescale etc., and to identify any lessons learnt that should be taken into account for similar projects in the future. The level of detail is determined by the value of the project. Also, the IC would normally request a PCR where there has been material variance from the authorised expenditure presented to the committee by the project manager.

Evidence provided by WWU indicates that 12 projects over a recent 6 month period, across all investment categories including <7bar reinforcement, were selected for post investment appraisal (PIA). The authorised expenditure for these projects ranged from £390k (Opex) to £2.4m (LTS Capex). PIA reports include review of actual scope compared to authorised, key lessons and compliance with Investment Procedures.

Individual reinforcement projects are designed using GBNA to determine the optimum solution for the particular network. Project cost estimations are based on EPC rates and are reviewed to ensure that that all risks have been assessed and relevant issues have been taken into account in the planning/costing process.

Further information regarding network planning and design processes is provided in Appendix 1, Network Planning and Design Review.

The management and control processes described for reinforcement expenditure also apply to governor replacement and upgrade projects.

We consider that project management policies and procedures are adequate in terms of overall expenditure control to ensure efficient investment.

Project Reviews

The Aldbourne MP Network Reinforcement project was selected for review.

The project submission to the Transco Investment Committee in December 2001 sought approval for reinforcement of the network to meet the predicted peak demand for the 2002/03 winter period and beyond. Alternative options were presented in the submission and the least cost solution was recommended for approval. Supporting information included an assessment of network risks.

The authorised project works comprised 5.8km of 315mm HDPE IP pipeline and construction of an IP/MP governor at an estimated cost of £1.24m. This estimate was built up on a time and material basis, not EPC rates.

A PIA was submitted to DPSC in January 2004 indicating that the actual cost was £0.85m, a 31.6% underspend compared to the authorise sum which resulted from an inaccurate cost estimate at the planning stage and a minor reduction in the scope of works. Lessons learnt identified several issues/recommendations the most significant being the use of EPC rates to estimate costs at the planning stage and exploring the use of competitive tendering to

achieve further cost benefits. The recommendation regarding the use of EPC rates indicated that the practice had already been adopted by Network Planning.

We conclude that the documents provided confirmed general compliance with the project management processes described above and we have found no evidence to indicate inefficiency.

Overspend Project Review

The Hallatrow to Paulton Reinforcement project was selected for review.

The project submission to the DPSC in February 2004 sought approval for reinforcement of the network to remedy poor pressures and to meet the predicted peak demand for the 2004/05 winter period and beyond. Alternative options were presented in the submission and the least cost solution was recommended for approval. Supporting information included an assessment of risks and sensitivities, including environmental/archaeological risks.

The authorised project works comprised 200m of 4 inch HP steel, a HP/IP PRI, 1420m of 8 inch IP steel, 1020m of 250mm HDPE IP, an IP/MP governor and 425m of 315mm MP main. The cost estimate at £ 1.08m was substantially based on EPC rates, with exception of the HP pipeline and the HP/IP PRI works.

Construction was completed in March 2005 and a PIA was submitted to the IC in February 2006 indicating that the actual cost was £1.36m, a 25.9% overspend compared to the authorise sum. The overspend resulted from inaccurate cost estimates for the HP PRI at the planning stage which were based on a similar scheme, inadequate provision for wayleaves and an error in the cost estimate for the IP/MP governor. Lessons learnt identified several issues/recommendations the most significant being the need for increased lead time in the planning process to enable a bespoke design study to be carried out and improved management controls for combined above and below 7bar projects.

The documents provided by WWU consist of the initial project submission and the PIA report only. There is no evidence of any advance authorisation for the additional expenditure and we cannot confirm that the project management processes were adequate in this respect.

In conclusion, we have found no evidence to indicate that overspend project management processes are generally inefficient.

Procurement – EPCs

Most of the GDN's reinforcement mains and governors construction work is carried out by contractors via EPC contracts. Initially of the target price format with efficiency sharing incentives, these contracts were changed (w.e.f. April 2002) to a fixed price format through re-tender by the incumbents and subsequent negotiation.

The EPC contracts in place at this time were approaching their three year anniversary and possible termination. If the GDN wished to move to a new form of contract then an open market re-tender, rather than re-negotiation of the contracts, would have been appropriate.

We judge the increase relative to the move to fixed rates likely to be in the range 0 – 10% and have applied an adjustment of -5% to the contract labour cost element to reflect this.

Procurement - Materials

WWU utilise NGG policies and procedures for PE pipe and fittings procurement and therefore benefit from the leverage resulting from large volume purchasing arrangements. The purchasing contracts were novated to WWU when the network was acquired in 2005 and will be reviewed in due course.

We have found no evidence to indicate that materials procurement and usage management processes are inefficient.

Appendix 2 provides further information regarding procurement processes.

Summary of Adjustments to Gross Capex

The adjustments applied to reinforcement mains and governors Gross Capex are summarised as follows:

- Improved contract labour management: -5% applied to contract labour cost for all years except where a higher adjustment for unit cost alignment is made.
- Contract labour cost adjustment to align unit cost with trend:

  Reinforcement mains : 2003/04 -15%

  Governors: no adjustments applied.
- Improved direct labour management: -7.5% applied to direct labour costs for all years.

5.3.3.2 Net Capex

Reinforcement mains and governors activities are not rechargeable and do not result in contributions. Net Capex is therefore equal to Gross Capex.

We presume that the minor contributions reported against governors for 2004/05 (£0.04m) results from a reporting error.

5.3.3.3 Analysis Process

The expenditure analysis process has been designed to take into account appropriate indexation for inflation, applied to both expenditure and allowances, and identified adjustments due to inefficiency. Outputs are summarised for comparison with allowances.

All analysis has been undertaken at 2005/06 Prices and GDN actuals, forecasts and allowances are re-stated on this basis.

A volume analysis is included to provide details of allowed and additional work volumes. This analysis identifies unnecessary and deferrable or unplanned work but we have not found any evidence to justify assigning any work to these categories.

The analysis summary tabulation sets out the information at each stage of the process to determine the efficient level of expenditure and unit cost:

i) Actual gross expenditure including overheads – as reported by the GDN.
ii) Efficiency adjustments to gross expenditure – expenditure adjustments based on the application of the adjustments specified.
iii) Adjusted gross expenditure including overheads – actual gross expenditure (i) minus the efficiency adjustments (ii).
iv) Contributions – as reported by the GDN.
v) Actual Net Capex – actual gross expenditure including overheads (i) minus contributions (iv)
vi) Adjusted Net Capex – adjusted gross expenditure including overheads (iii) minus contributions (iv).
vii) Adjustments for under-recovery of contributions - expenditure adjustments based on the application of the efficiency adjustments specified.
This adjustment is not applicable to these activities.
viii) Efficient Net Capex – adjusted Net Capex (vi) minus adjustments for under recovery of contributions (vii).
Efficient Net Capex will be equal to the Adjusted Net Capex for these activities.
ix) Actual volume – as reported by the GDN.

x) Efficient unit cost – based on the adjusted gross expenditure including overheads (iii) and the actual work volume (ix).

The Net Capex Investment Category table details the allocation of expenditure to categories as specified in Section 2.7

5.3.3.4 Efficiency Analysis Summary

The following tables summarise the outputs from the analysis. Efficient Net Capex and unit costs are assessed by the analysis process.

Reinforcement Mains

Analysis Summary – Reinforcement Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Actual gross expenditure including overheads	13.6	5.7	2.7
Efficiency adjustments to gross expenditure	-0.5	-0.6	-0.1
Adjusted gross expenditure including overheads	13.1	5.1	2.6
Contributions	0.0	0.0	0.0
Actual Net Capex	13.6	5.7	2.7
Adjusted Net Capex	13.1	5.1	2.6
Adjustments for under-recovery of contributions	0.0	0.0	0.0
Efficient Net Capex	13.1	5.1	2.6
Actual Volume – km	57	20	15
Efficient Unit cost - £/m	228.2	263.1	172.5

Table 41

Analysis Summary – Reinforcement Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Reported Net Investment	**13.6**	**5.7**	**2.7**
Wasteful/Unnecessary Expenditure	0.5	0.6	0.1
Allowed Workload	6.5	5.1	2.6
Additional Workload	6.6	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0

Table 42

Governors

Analysis Summary – Governors All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Actual gross expenditure including overheads	1.7	1.0	0.8
Efficiency adjustments to gross expenditure	-0.03	-0.02	-0.01
Adjusted gross expenditure including overheads	1.7	1.0	0.8
Contributions	0.0	0.0	0.0
Actual Net Capex	1.7	1.0	0.8
Adjusted Net Capex	1.7	1.0	0.8
Adjustments for under-recovery of contributions	0.0	0.0	0.0
Efficient Net Capex	1.7	1.0	0.8
Actual Volume – No.	11	18	22
Efficient Unit cost - £/unit	152.7	54.3	36.7

Table 43

Analysis Summary – Governors All figures £m 2005/06 Prices	2002/03	2003/04	2004/05
Reported Net Investment	**1.7**	**1.0**	**0.8**
Wasteful/Unnecessary Expenditure	0.0	0.0	0.0
Allowed Workload	1.7	1.0	0.8
Additional Workload	0.0	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0

Table 44

5.4 FORECAST EXPENDITURE

Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	15.3	6.7	3.4	**5.8**	**4.8**	**36.0**	**6.2**
Adjustments	0.5	0.6	0.1	**0.1**	**0.1**	**1.4**	**0.2**
Reinforcement	0.5	0.6	0.1	0.1	0.1	1.3	0.2
Governors	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Ofgem Adjusted Forecast Net Investment	14.8	6.1	3.3	**5.7**	**4.6**	**34.6**	**6.0**
Allowed Expenditure	8.2	6.1	3.3	**4.3**	**4.5**	**26.5**	
Additional Workload	6.6	0.0	0.0	**1.3**	**0.1**	**8.0**	
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	

Table 45

[redacted]

[redacted]

Traffic Management Act (TMA)

WWU has confirmed that forecasts for 2006/07 and 2007/08 include expenditure associated with the Traffic Management Act (TMA), as follows.

- 2006/07 – Reinforcement Mains £0.5m
- 2007/08 – Reinforcement Mains £0.3m

These costs have been deducted from the forecasts to ensure that the GDN analyses are on a consistent basis.

5.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

Reinforcement Mains

The gross expenditure and workload variances for the 2 year period are 42% and 20% respectively.

Mains - General Reinforcement All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross (£m)	Actual	13.6	5.7	2.7	5.4	4.0	31.3
	Allowance	4.4	3.8	3.7	3.4	3.2	18.5
	Variance	9.2	1.9	-1.0	2.0	0.8	12.8
Workload (km)	Actual	57	20	15	31	23	146
	Allowance	29	26	25	23	22	124
	Variance	29	-6	-10	8	1	22

Table 46

Governors

The gross expenditure is below the allowance for the 2 year period and the variance is -8%. The allowances did not specify workload for governors and variances in this respect are not available therefore.

Governors All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross	Actual	1.7	1.0	0.8	0.4	0.8	4.7
	Allowance	0.6	0.6	0.7	0.6	0.6	3.2
	Variance	1.1	0.4	0.1	-0.3	0.2	1.5
Contributions	Actual	0.0	0.0	0.0	0.0	0.0	0.0
	Allowance	0.0	0.0	0.0	0.0	0.0	0.0
	Variance	0.0	0.0	0.0	0.0	0.0	0.0
Net	Actual	1.7	1.0	0.8	0.4	0.8	4.7
	Allowance	0.6	0.6	0.7	0.6	0.6	3.2
	Variance	1.1	0.4	0.1	-0.3	0.2	1.5

Table 47

5.4.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

Reinforcement Mains

We assume that WWU policies and procedures regarding network planning were followed and the reinforcement works identified are necessary to ensure security of supply. There is no evidence to indicate that the additional mains work volume in excess of the allowances over the 2 year period is unnecessary.

Governors

Expenditure on governors is aligned with the total allowance over the 2 year period. The overall governors workload balance is biased towards growth which is driven by reinforcement/security of supply, and necessary therefore.

5.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

5.4.3.1 Analysis process

We presume that the forecasts for 2005/06 and 2006/07are based on historic performance. Therefore, the inefficiencies identified and quantified for the period 2002/03 to 2004/05 will also influence the forecasts which, in our opinion, are inaccurate as a consequence. Our analysis process for the historic period has also been applied to the forecasts in order to assess the degree of inaccuracy.

Section 5.3.3 provides full details of the analysis process and the adjustments applied for the forecast period follow in this section of the report.

Summary of Adjustments to Gross Capex:

The adjustments applied to reinforcement mains and governors Gross Capex are summarised as follows:

- Improved contract labour management: -5% applied to contract labour cost for all years except where a higher adjustment for unit cost alignment is made.
- Contract labour cost adjustment to align unit cost with trend:

  Reinforcement mains - no adjustments applied.

  Governors – no adjustments applied.
- Improved direct labour management: -7.5% applied to direct labour costs for all years.

5.4.3.2 Analysis summary:

The following tables summarise the outputs from the analysis. Efficient Net Capex and unit costs are assessed by the analysis process and are indicated.

Reinforcement Mains:

Analysis Summary – Reinforcement Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Actual gross expenditure including overheads	13.6	5.7	2.7	5.4	4.0
Efficiency adjustments to gross expenditure	-0.5	-0.6	-0.1	-0.1	-0.1
Adjusted gross expenditure including overheads	13.1	5.1	2.6	5.3	3.9
Contributions	0.0	0.0	0.0	0.0	0.0
Actual Net Capex	13.6	5.7	2.7	5.4	4.0
Adjusted Net Capex	13.1	5.1	2.6	5.3	3.9
Adjustments for under-recovery of contributions	0.0	0.0	0.0	0.0	0.0
Efficient Net Capex	13.1	5.1	2.6	5.3	3.9
Actual Volume - km	57	20	15	31	23
Efficient Unit cost - £/m	228.2	263.1	172.5	172.6	167.7

Table 48

Analysis Summary – Reinforcement Mains All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Reported Net Investment	**13.6**	**5.7**	**2.7**	**5.4**	**4.0**
Wasteful/Unnecessary Expenditure	0.5	0.6	0.1	0.1	0.1
Allowed Workload	6.5	5.1	2.6	4.0	3.7
Additional Workload	6.6	0.0	0.0	1.3	0.1
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	0.0	0.0

Table 49

Governors

Analysis Summary – Governors All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Actual gross expenditure including overheads	1.7	1.0	0.8	0.4	0.8
Efficiency adjustments to gross expenditure	0.0	0.0	0.0	0.0	0.0
Adjusted gross expenditure including overheads	1.7	1.0	0.8	0.4	0.8
Contributions	0.0	0.0	0.0	0.0	0.0
Actual Net Capex	1.7	1.0	0.8	0.4	0.8
Adjusted Net Capex	1.7	1.0	0.8	0.4	0.8
Adjustments for under-recovery of contributions	0.0	0.0	0.0	0.0	0.0
Efficient Net Capex	1.7	1.0	0.8	0.4	0.8
Actual Volume – No.	11	18	22	15	516
Efficient Unit cost - £/unit	152.7	54.3	36.7	25.6	1.5

Table 50

Analysis Summary – Governors All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07
Reported Net Investment	1.7	1.0	0.8	0.4	0.8
Wasteful/Unnecessary Expenditure	0.0	0.0	0.0	0.0	0.0
Allowed Workload	1.7	1.0	0.8	0.4	0.8
Additional Workload	0.0	0.0	0.0	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	0.0	0.0

Table 51

5.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

5.4.4.1 Analysis Process

The efficiency analysis process detailed in Section 5.3.3 is applied to assess efficient/adjusted unit costs. We recommend that forecast expenditure for 2007/08 reflects the historic efficient unit cost trend and we have adjusted the reported forecasts on this basis.

5.4.4.2 Workload Trend

Reinforcement Mains

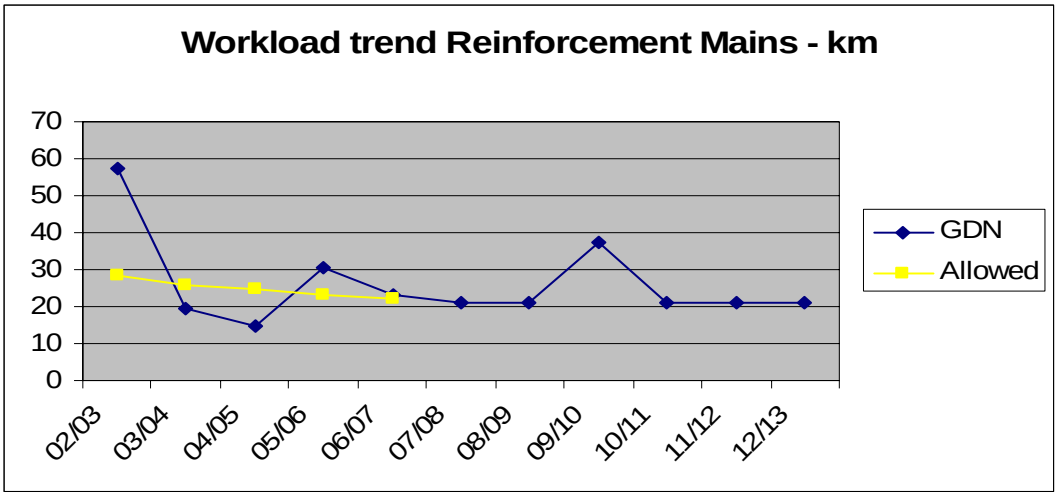


Figure 22

The 2007/08 workload is aligned with the historic trend and we have not identified any issues in this respect.

Governors

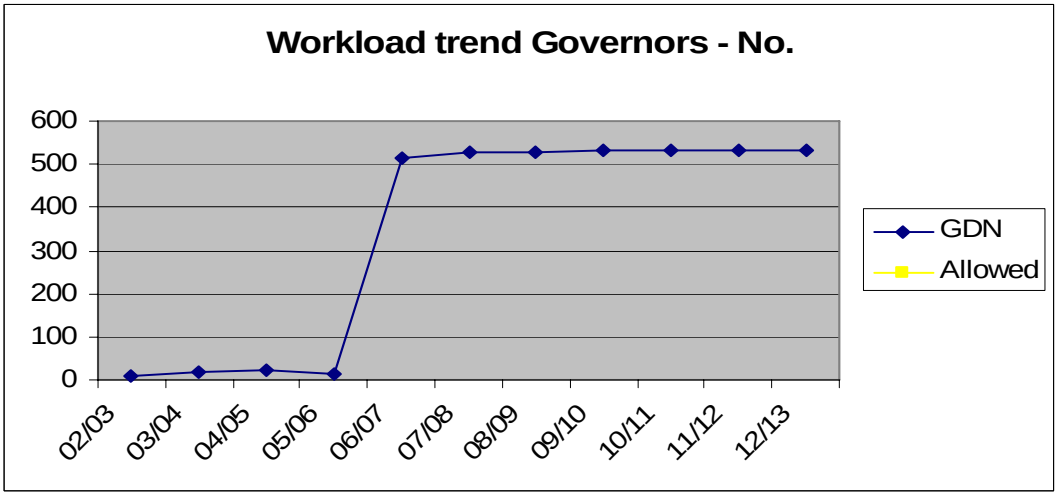


Figure 23

The workload increase in 2006/07 results from the inclusion of 500 service governors. We presume these are low cost domestic type installations as the governors unit cost reduces from £25.6k in 2005/06 to £1.5k in 2006/07.

WWU have included 500 service governors in their workload forecasts each year to 2012/13.

The main review BPQ has been amended to include additional governors categories to facilitate expenditure analysis and comparability.

5.4.4.3 Assessment of Forecast Capex

Reinforcement mains

The workload forecast for 2007/08 is aligned with historic trends and no issues are identified.

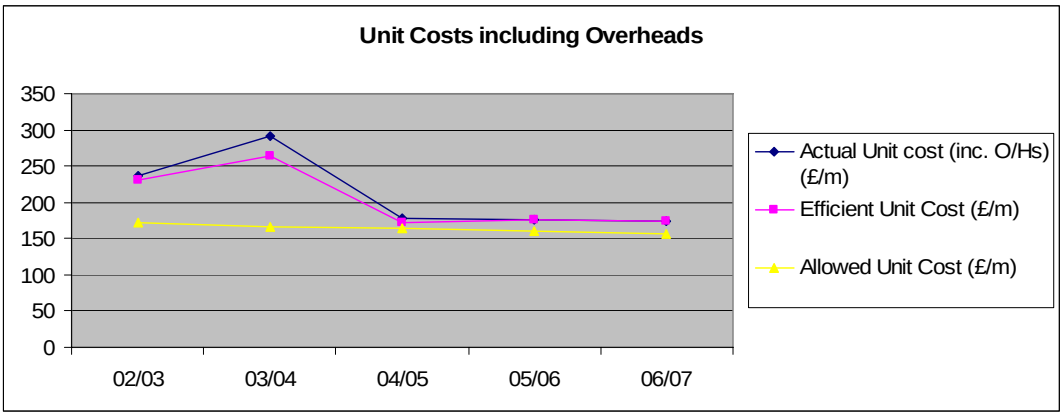


Figure 24

The workload balance does not provide any indication of the reason for the actual unit cost increase in 2003/04. This matter has been addressed in the analysis process by an adjustment to determine the efficient unit cost.

We recommend that forecast expenditure is based on the historic efficient unit cost trend. On this basis the unit cost inclusive of overheads will be in the range £165/m to £175/m. The mid-point unit cost of £170/m applied to the forecast workload at 21.04 km results in an indicative 2007/08 expenditure forecast of £3.6m, including overheads, for reinforcement mains. Compared to the reported forecast at £3.8m, the variance is -£0.2m.

Governors

Analysis of historic information to assess the efficient unit cost trend is distorted by inconsistent information, the significant cost difference between new and replacement activity and the inclusion of service governors (500 no.) from 2006/07.

The increase in replacement activity in 2007/08 has a significant influence on the expenditure forecast.

We recommend that the WWU reaffirms the workload and estimated unit cost of construction in each category to determine the expenditure forecast, currently at £2.4m.

5.4.4.4 Recommendations

- We recommend that no adjustment is applied to the reported workloads for reinforcement mains and governors.
- We recommend that WWU reaffirms the governors workload and estimated unit cost of construction in each category to determine the expenditure forecast, currently at £2.4m.
- Our recommendations regarding Gross Capex forecasts are summarised below:

Summary – Reinforcement mains & Governors Forecast 2007/08 All figures £m 2005/06 Prices	Reinforcement Mains	Governors
Reported Gross Investment Forecast	**3.8**	**2.4**
Ofgem Adjusted Gross Investment Forecast	**3.6**	**2.4****

Table 52

Note: ** Provisional pending review of forecast by WWU

5.5 FORECAST TRENDS (2002 TO 2013)

5.5.1 HIGH LEVEL TREND

Reinforcement Mains

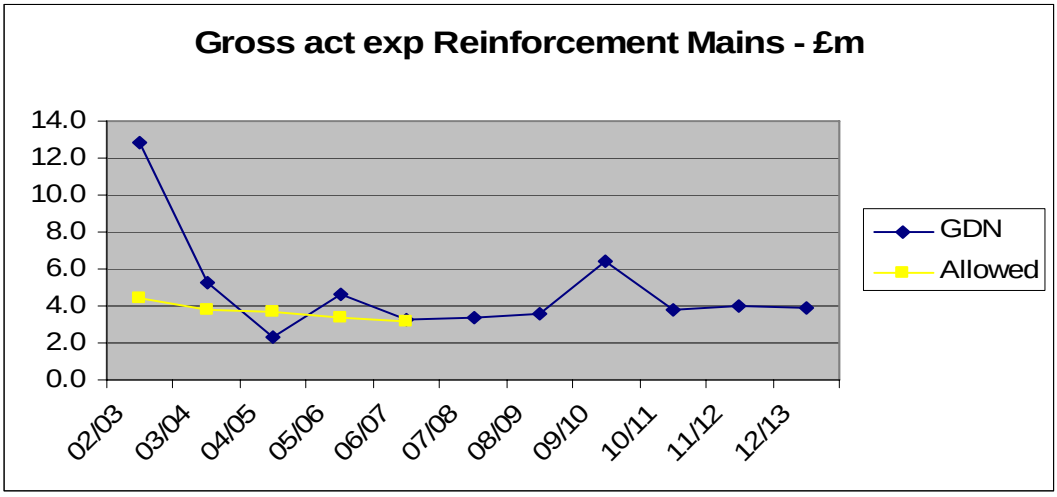


Figure 25

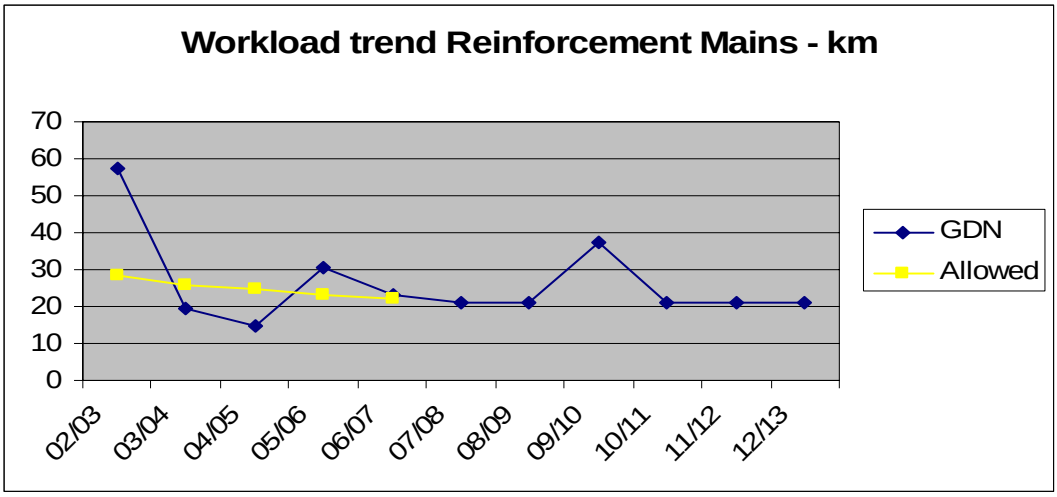


Figure 26

Governors

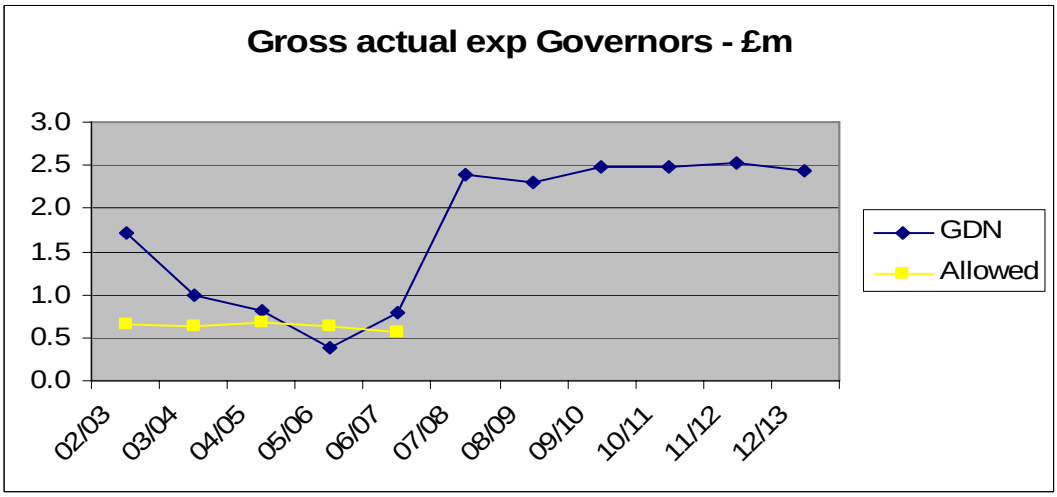


Figure 27

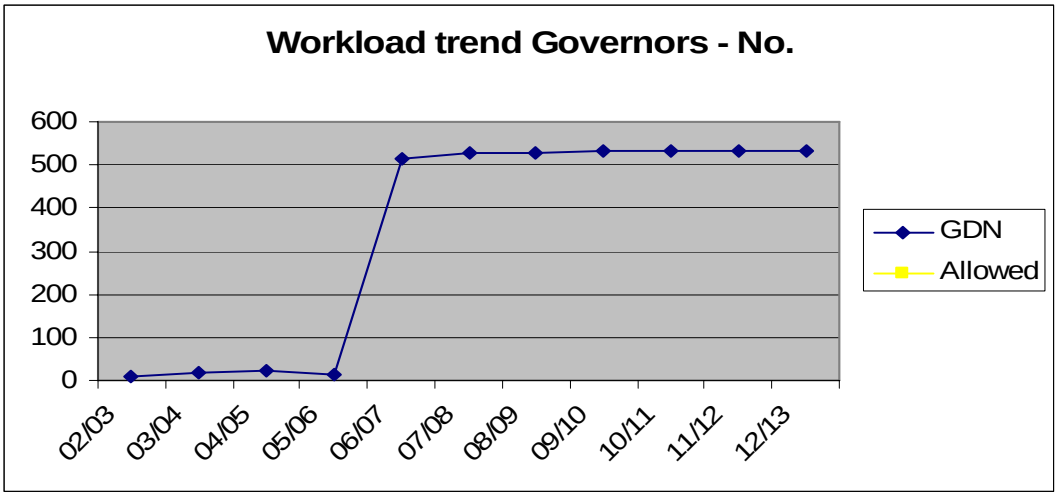


Figure 28

5.5.2 COMMENTS ON TREND

5.5.2.1 Reinforcement Mains

Expenditure and workload trends are generally aligned with historic performance and no issues have been identified. The increase in 2009/10 is due to an identified major project.

5.5.2.2 Governors

WWU forecasts include d 20 replacement governors each year for the period 2007/08 to 2012/13. These are high cost installations and account for the sustained increase in gross expenditure. Also, WWU have included 500 service governors in their workload forecasts each year to 2012/13.

The main review BPQ has been amended to include additional governors categories to facilitate expenditure analysis and comparability.

6 OTHER OPERATIONAL CAPEX

6.1 SUMMARY OF FINDINGS

This section considers the Other Operational Capex in the following two areas;

Plant & Equipment

Land & Buildings

6.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**27.1**	**4.0**	**31.1**
Wasteful/Unnecessary Expenditure	**0.0**	**0.0**	**0.0**
Ofgem Adjusted Net Investment	**27.1**	**4.0**	**31.1**

Table 53

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of processes to monitor and control expenditure & projects.
- Procurement policies and procedures.
- Trend analysis.
- No detailed analysis was possible for Land & Building due to lack of data

Key Issues

- Plant and Equipment expenditure does not include any allocation to Leakage Management P & E.
- The expenditure on land and buildings looks modest.

Categorisation of Incurred Expenditure

No wasteful or unnecessary expenditure has been identified and the total expenditure recommended to be allowed

6.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

Overspend

- The whole category is overspent by £0.3m (6%)

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of leakage management policies and procedures.
- Review of project management procedures, including examination of sample project documentation.
- Review of procurement policies and procedures
- There was no land and buildings data or commentary to support the submission

Key Issues

- Responses indicate that expenditure is appropriately managed to ensure investment efficiency.

Categorisation of Incurred Expenditure

- No wasteful or unnecessary expenditure has been identified and the total expenditure recommended to be allowed

Categorisation of Forecast Expenditure

- No adjustments have been identified and the total forecast expenditure recommended to be allowed

Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	1.0		1.0		1.1		1.1		1.0		5.3		
Total GDN Variance	0.8	78%	0.1	13%	-0.2	-15%	-0.2	-16%	-0.3	-33%	0.3	5%	
Reported Net Investment	1.8		1.2		0.9		0.9		0.7		5.5		1.6
Wasteful/Unnecessary Actual Expenditure	0.0		0.0		0.0						0.0		
Adjustments to Forecasts							0.0		0.0		0.0		0.0
Ofgem Adjusted Net Investment	1.8		1.2		0.9		0.9		0.7		5.5		1.6
Allowed Workload	1.3		1.1		0.8		0.9		0.7		4.8		
Additional Workload	0.4		0.0		0.0		0.0		0.0		0.4		
Deferrable/Unplanned but Predictable	0.2		0.1		0.1		0.0		0.0		0.4		

Table 54

6.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

6.2.1 REPORTED EXPENDITURE

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**27.1**	**4.0**	**31.1**
Plant & Equipment	14.1	3.3	17.5
Tools, Transport and other Mains	8.1	0.3	8.5
Buildings	2.7	0.0	2.7
Land	2.2	0.3	2.6

Table 55

The major component of expenditure in this category is on Plant and Equipment at £17.5m and the information reported does not include any allocation to Leakage Management. No explanation for the expenditure has been provided and we are unable to comment further.

The expenditure on Tools, Transport and other mains including in this category has been moved to the Non-Operational expenditure for reporting after March 2002.

There are no details of the expenditure on Land or Buildings available from the BPQ submissions.

6.2.2 EFFICIENCY ANALYSIS

Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**27.1**	**4.0**	**31.1**
Wasteful/Unnecessary Expenditure	**0.0**	**0.0**	**0.0**
Ofgem Adjusted Net Investment	**27.1**	**4.0**	**31.1**

Table 56

Given the limited information available about the nature and breakdown of these costs the only analysis which has been carried out are; a review of processes to monitor and control expenditure & projects, procurement policies and procedures for Plant & Equipment. In addition a high level trend analysis of the levels of expenditure has been carried out.

No wasteful or unnecessary expenditure has been identified and the total expenditure recommended to be allowed.

6.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

6.3.1 HIGH LEVEL VARIANCES ANALYSIS

Other Operational Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Plant & Equipment	Total Actual	1.2	0.8	0.6	2.7
	Allowance	0.9	0.9	1.0	2.9
	Variance	0.3	-0.1	-0.4	-0.2
Land & Buildings	Total Actual	0.7	0.3	0.3	1.3
	Allowance	0.1	0.1	0.1	0.3
	Variance	0.6	0.2	0.2	1.0
Total	Total Actual	1.8	1.2	0.9	3.9
	Allowance	1.0	1.0	1.1	3.2
	Variance	0.8	0.1	-0.2	0.8

Table 57

6.3.2 REASONS FOR VARIANCES

WWU has not provided any commentary on the reason for the variances in respect of Plant & Equipment and Land & Buildings.

6.3.3 EFFICIENCY ANALYSIS

Net Other Operational Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**1.8**	**1.2**	**0.9**	**3.9**
Wasteful/Unnecessary Expenditure	**0.0**	**0.0**	**0.0**	**0.0**
Plant & Equipment	0.0	0.0	0.0	0.0
Land & Buildings	0.0	0.0	0.0	0.0
Ofgem Adjusted Net Investment	**1.8**	**1.2**	**0.9**	**3.9**
Allowed Workload	**1.3**	**1.1**	**0.8**	**3.2**
Additional Workload	**0.4**	**0.0**	**0.0**	**0.4**
Deferrable/Unplanned but Predictable	**0.2**	**0.1**	**0.1**	**0.4**

Table 58

6.3.3.1 Plant & Equipment

Plant and Equipment expenditure is primarily associated with the installation of leakage management systems and replacement/acquisition of plant to support network operations and activities. Actual expenditure is below allowances for the period by £0.2m (-7%).

We have carried out various analyses to assess the efficiency of Plant and Equipment Gross Capex, including:

- Review of leakage management policies and procedures.
- Review of project management procedures, including examination of sample project documentation.
- Review of procurement policies and procedures

Policies and Procedures

WW has not changed its policies and procedures regarding leakage management since acquiring the network. Current policy is aligned with NGG and established practice, and is considered to be satisfactory.

Project Appraisal Processes

Proposals are assessed utilising a comprehensive financial model and those not meeting the specified economic criteria are rejected. Examination of sample project documentation confirms compliance with this process. All low pressure networks projects that met the economic criteria were completed by the end of 2002/03.

Project tabulations examined summarise expenditure and indicate the annual cost savings expected.

Procurement

Leakage management equipment and control systems are purchased from recognised specialist suppliers with limited scope for competitive pricing.

However, WW confirm that equipment, services and materials are obtained in accordance with company Procurement Procedures.

Summary

WWU plant and Equipment expenditure is minimal appropriately controlled and closely aligned with allowances.

6.3.3.2 Land and Buildings

Property Portfolio

Wales and West's property portfolio comprises multiple operational sites which are mainly freehold and small, depots which may be housed on these operational sites and depots, stores and offices on sites which are leasehold. A comprehensive list of all such sites was provided in the submission.

Some of their operational sites share boundaries with freehold sites which have transferred ownership to NG Property Holdings; these sites have potential development value. It is recognised that NGPH may wait to develop their part of the site until the WWU parcel is no longer operational; this will release additional marriage value from which both companies will benefit.

Land Sales Proceeds

WWU have sold no land or buildings since 1 June 2005 and NGG advise that 6 sites have been sold in the WW GDN area between April 2002 and March 2005 for an aggregate net income of £169k. They plan to sell a few sites which are no longer operational but it is expected that these will not yield any material positive value after remediation for contamination is undertaken. We agree with this view.

Property Costs

WWU has indicated a spend of £1.3m of direct land and buildings costs in the period. It is not stated what this was for. WWU has stated *"We do not anticipate making any significant investments in land and buildings over the period, apart from those in relation to our move to Celtic Springs"*. It is assumed that these costs will primarily be Opex.

Summary

The operational land and buildings issues in WWU are unexceptional and unlikely to move over the next control period. The majority of occupied property related costs sit in Opex. Decontamination liabilities, which may occur regardless of current land sales, are not mentioned in the submission; these may become an issue for the main review following recent legislation.

6.4 FORECAST EXPENDITURE

6.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

The tables below give the forecast expenditure, allowance and variance for each category of expenditure.

Other Operational Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Plant & Equipment	Total Actual	1.2	0.8	0.6	0.9	0.7	4.3
	Allowance	0.9	0.9	1.0	1.0	1.0	4.8
	Variance	0.3	-0.1	-0.4	-0.1	-0.3	-0.5
Land & Buildings	Total Actual	0.7	0.3	0.3	0.0	0.0	1.3
	Allowance	0.1	0.1	0.1	0.1	0.1	0.5
	Variance	0.6	0.2	0.2	-0.1	-0.1	0.8
Total	Total Actual	1.8	1.2	0.9	0.9	0.7	5.5
	Allowance	1.0	1.0	1.1	1.1	1.0	5.3
	Variance	0.8	0.1	-0.2	-0.2	-0.3	0.3

Table 59

6.4.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

Actual Plant and Equipment expenditure is below allowances for the 2 year period and the overall variance for the period is -20%.

WWU has not provided any commentary on the reason for the variances in respect of Plant and Equipment or Land and Buildings.

6.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

Net Other Operational Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	1.8	1.2	0.9	**0.9**	**0.7**	**5.5**	**1.6**
Adjustments	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	**0.0**
Plant & Equipment	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Land & Building	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ofgem Adjusted Forecast Net Investment	1.8	1.2	0.9	**0.9**	**0.7**	**5.5**	**1.6**
Allowed Workload	1.3	1.1	0.8	**0.9**	**0.7**	**4.8**	
Additional Workload	0.4	0.0	0.0	**0.0**	**0.0**	**0.4**	
Deferrable/Unplanned but Predictable	0.2	0.1	0.1	**0.0**	**0.0**	**0.4**	

Table 60

6.4.3.1 Plant & Equipment

The forecasts for the 2 year period are aligned with the historic trend and we have not identified any issues.

6.4.3.2 Land & Buildings

There is no expenditure indicated for this period. On this basis, WWU will underspend their allowance by £0.2m. Overall WWU will exceed their allowance for the five year period by £0.8m. In the absence of any firm data, this has been allocated as 50% additional workload and 50% deferrable.

6.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

Other Net Capex All figures £m 2005/06 Prices	2007/08
Plant & Equipment	0.8
Land & Buildings	0.8
Total	1.6

Table 61

6.4.4.1 Plant & Equipment

The Plant and Equipment forecast at £ 0.8m is aligned with Historic Expenditure (Apr 2002 to Mar 2005) and we have not identified any issues.

6.4.4.2 Land and Buildings

There is Land and Buildings expenditure shown in 2007/08 of £0.8m. There is no indication what this is for.

6.5 FORECAST TRENDS (2002 TO 2013)

6.5.1 HIGH LEVEL TREND

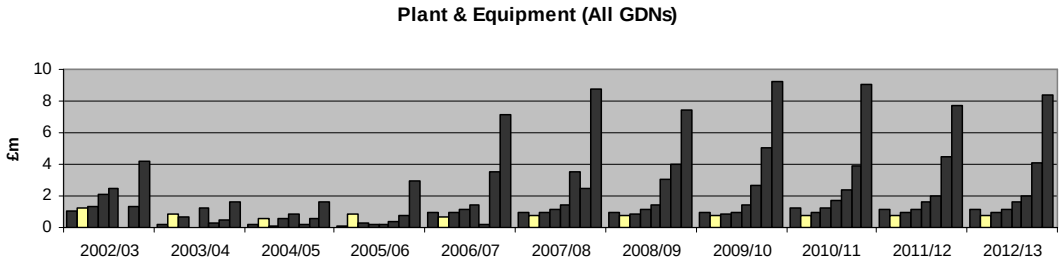


Figure 29

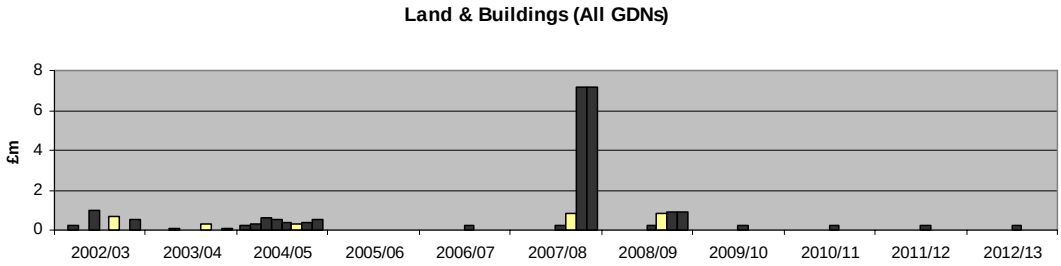


Figure 30

6.5.2 COMMENTS ON TREND

6.5.2.1 Plant & Equipment

The forecasts for the period to 20012/13 are flat which seems to indicate that detailed and accurate assessments have not been made. We have not identified any other issues.

6.5.2.2 Land & Buildings

The expenditure shown by WWU for Land and Buildings in Other Operational costs is £0.8m in 2008/09; after this it is zero. It is not stated what this is for.

7 NON-OPERATIONAL CAPEX

7.1 SUMMARY OF FINDINGS

This section covers all remaining Capex not already covered elsewhere in this review. This section considers the Non Operation Capex in Five areas;

v) Non-Operational Capex (Direct)

vi) System Operation

vii) IS

viii) xoserve

ix) Other Non-Operational Capex (Allocated).

7.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

Non Operational Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**92.7**	**13.6**	**106.3**
Wasteful/Unnecessary Expenditure	**6.6**	**4.4**	**11.0**
Ofgem Adjusted Net Investment	**86.1**	**9.2**	**95.3**

Table 62

The Capex summary figures are given in the table above. These show the starting Reported Net Investment from the last control, the Reported Net Investment as requested by WWU and finally PB Power's initial recommendation for Ofgem's adjusted Net Investment

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of processes to monitor and control expenditure & projects.
- Review of Large IS & System Control Projects

Key Issues

- Ulysses turnkey contract with [redacted] was terminated due to serious failings
- Quarterback programme incurred excessive initial investigation costs

Categorisation of Incurred Expenditure

- £6.5m of Ulysses expenditure was considered inefficient
- £4.5m of Quarterback expenditure was considered wasteful

7.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

Overspend

- A total of £35.0m overspend due mainly to the need to invest in new IS systems.

Analysis Carried Out

Various analyses have been carried out to assess investment efficiency taking into account.

- Review of processes to monitor and control expenditure & projects.
- Review of Large IS & System Control Projects
- Review of phasing on Vehicle expenditure
- Procurement policies and procedures.

Key Issues

- Large projects (Ulysses & Quarterback) have been associated with inefficient spend
- GEMINI costs have been incorrectly charged via Transco transaction model to GDNs
- Network sales has introduced the need to replace IS systems
- Speed of implementation of IS systems has eliminated investment analysis for these projects

Categorisation of Incurred Expenditure

- £1.8m of Ulysses expenditure has been assessed as inefficient
- £0.4m Quarterback programme Capex has been assessed as inefficient
- GEMINI costs have been incorrectly charged via Transco transaction model to North West network

Categorisation of Forecast Expenditure

- £14.4m of WWU IS implementation costs judged to be not allowed due to these being considered part of the network sales process and also £5.9m due to the higher premium to ensure such rapid implementation timescales
- £3.1m has not been allowed for 2007/08 due to lack of information about the purpose

Non Operational Net Capex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**11.6**		**10.1**		**5.7**		**7.0**		**7.5**		**41.9**		
Total GDN Variance	**-2.6**	**-22%**	**-3.7**	**-36%**	**0.6**	**10%**	**27.0**	**388%**	**13.8**	**184%**	**35.0**	**84%**	
Reported Net Investment	**9.0**		**6.4**		**6.3**		**33.9**		**21.3**		**76.9**		**16.5**
Wasteful/Unnecessary Actual Expenditure	**1.0**		**0.7**		**0.5**						**2.2**		
Adjustments to Forecasts							**14.3**		**6.1**		**20.3**		**3.1**
Ofgem Adjusted Net Investment	**8.0**		**5.8**		**5.8**		**19.6**		**15.2**		**54.4**		**13.4**
Allowed Workload	**4.0**		**4.2**		**4.8**		**10.5**		**11.6**		**35.0**		
Additional Workload	**4.0**		**1.6**		**0.9**		**8.0**		**3.2**		**17.7**		
Deferrable/Unplanned but Predictable	**0.0**		**0.0**		**0.0**		**1.2**		**0.5**		**1.8**		

Table 63

7.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

7.2.1 REPORTED EXPENDITURE

Non Operational Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**92.7**	**13.6**	**106.3**
Other	10.5	2.1	12.6
Telecoms, Office	9.9	2.2	12.1
Vehicles	42.2	0.0	42.2
IS (Distribution Costs only)	30.1	9.3	39.5

Table 64

7.2.1.1 Vehicles

Vehicles accounts for largest element of expenditure for this period. The large expenditure on vehicles in 2001 would reflect a five to seven year replacement of vehicles after the formation of Transco in 1994. No detailed explanation has been provided on this expenditure although commentary in some GDN submissions has suggested that they are attempted to phase future expenditure on vehicles away from concentrated peaks of expenditure.

7.2.1.2 System Operation

The Ulysses project was approved in 1999 as a turnkey project to undertake the complete replacement of Transco's System Operation's systems support suite. This included:-

i) Telemetry Outstations

ii) Communications network (for telemetry purposes)

iii) Control Systems (Both Transmission & Distribution)

iv) Decision Support Tools

v) Management Information

The total approved sum for the project was £70.4m, all Capex expenditure.

At the time of the last price review the Ulysses project was experiencing contractual difficulties between Transco and the main supplier [redacted] and it was clear in 2001 that the project would not deliver all of the components as originally specified in the approval,

We have had difficulty obtaining a definitive statement from NGG of the total project costs phased between January 2000 and March 2006. Together with TPA Solutions we have used the best costs available as the basis for our review. This review concludes that the total project expenditure in 2005/06 prices was £145.1m, of which £77.6m was the distribution element.

Our review concludes that there was inefficient expenditure associated with; the requirement to terminate the original [redacted] supply turnkey supply contract, abortive costs associated with a replacement distribution control system, telemetry design and site preparation costs and poor project management. These conclusions are made in full in Appendix 4.

7.2.1.3 IS

The figures provided by NGG for the 15 months to April 2002 were combined transmission and distribution figures. They also provided a total Distribution allocation of these costs. We have estimated the split between projects to provide comparisons. The projects have been split between Systems and Infrastructure projects.

IS Infrastructure Capex All Figures £m 2005/06 Prices		PB Power Estimates		
		2001	2002 Qtr1	Total
Systems Projects	Quarterback (QB)	2.8	4.5	7.3
	MINE	0.6	0.0	0.6
	Total	**3.3**	**4.5**	**7.8**
Infrastructure Projects	Servers	6.9	2.3	9.2
	Desktop	10.6	0.7	11.3
	Data Centre Storage	3.1	0.0	3.1
	Telecoms	1.0	0.0	1.0
	Office Equipment	2.3	0.9	3.2
	Email Upgrades	1.7	0.0	1.7
	SAP	1.2	0.7	1.9
	Other	0.0	0.3	0.3
	Total	**26.8**	**4.8**	**31.6**
Total		**30.1**	**9.3**	**39.4**

Table 65

7.2.2 EFFICIENCY ANALYSIS

Non Operational Net Capex All figures £m 2005/06 Prices	2001	Q1 2002	15 month Total
Reported Net Investment	**92.7**	**13.6**	**106.3**
Wasteful/Unnecessary Expenditure	**6.6**	**4.4**	**11.0**
System Operation	4.9	1.6	6.5
IS	1.7	2.8	4.5
Ofgem Adjusted Net Investment	**86.1**	**9.2**	**95.3**

Table 66

7.2.2.1 Systems Projects

The major element of expenditure is on the Quarterback Programme. We conclude that the expenditure incurred during this period was the initial investigations for the financial approval presented to the Lattice Executive in July 2002. We find the level of this expenditure excessive for this element of work. We therefore believe that 50% to 75% (£3.5m to £5.5m) of this expenditure was wasteful.

7.2.2.2 Infrastructure Projects

We note that during the separation of Transco from the gas supply & servicing parts of BG plc between 1994 and 1996, Transco put in place new desktop and server installations. The large expenditure to replace this infrastructure during 2001 would appear to reflect a reasonable life for this equipment. We have found no evidence of wasteful or unnecessary expenditure in this area.

7.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

7.3.1 HIGH LEVEL VARIANCES ANALYSIS

Non-Operational Net Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Non-Operational Direct	Furniture and fittings	0.0	0.1	0.0	0.1
	Meters	0.5	0.0	0.0	0.5
	Security	0.0	0.0	0.0	0.0
	Telecoms, Office	0.1	0.0	0.0	0.1
	Vehicles	1.4	0.0	0.1	1.5
	Wheeled plant	0.0	0.0	0.0	0.0
	Total Actual	2.1	0.1	0.1	2.3
	Allowance	2.9	3.0	3.0	8.8
	Variance	-0.8	-2.9	-2.8	-6.5
System Operation	Total Actual	0.0	1.4	1.2	2.6
	Allowance	0.9	0.1	0.3	1.4
	Variance	-0.9	1.2	0.9	1.2
IS	Total Actual	2.5	3.2	3.4	9.1
	Allowance	7.4	6.8	2.2	16.4
	Variance	-4.9	-3.6	1.2	-7.4
xoserve[2]	Total Actual	0.0	0.0	0.0	0.0
	Allowance	0.0	0.0	0.0	0.0
	Variance	0.0	0.0	0.0	0.0
Non-Operational (Allocated)	Allocation of accounting control	0.0	0.0	1.0	1.0
	Other charges<£0.5m	1.7	1.4	0.0	3.1
	Property	0.5	0.4	0.1	1.1
	Recharges LTS, P&M, Mains	0.0	0.0	0.4	0.4
	Vehicles (NS & ES)	1.3	0.0	0.0	1.3
	VESAS (Non-Ops)	0.9	0.0	0.0	0.9
	Total Actual	4.5	1.8	1.5	7.8
	Allowance	0.4	0.2	0.2	0.8
	Variance	4.0	1.6	1.3	7.0
Total	Total Actual	9.0	6.4	6.3	21.7
	Allowance	11.6	10.1	5.7	27.4
	Variance	-2.6	-3.7	0.6	-5.7

Table 67

[2] Note xoserve was not set-up until April 2005

7.3.2 REASONS FOR VARIANCES

WWU state that the principal areas of non operational Capex are IT, Vehicles and Land and Buildings.

Commercial vehicles have been replaced on a 5 year (light vehicle) or 7 year (heavy goods vehicle) cycle, although before the actual vehicle is replaced consideration is given to both the mileage and the running cost of the vehicle.

7.3.3 EFFICIENCY ANALYSIS

Non Operational Net Capex Operational Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**9.0**	**6.4**	**6.3**	**21.7**
Wasteful/Unnecessary Expenditure	**1.0**	**0.7**	**0.5**	**2.2**
Non-Operational Direct	0.0	0.0	0.0	0.0
System Operation	0.9	0.5	0.4	1.8
IS	0.1	0.2	0.1	0.4
xoserve[3]	0.0	0.0	0.0	0.0
Non-Operational Allocated	0.0	0.0	0.0	0.0
Ofgem Adjusted Net Investment	**8.0**	**5.8**	**5.8**	**19.5**
Allowed Workload	**4.0**	**4.2**	**4.8**	**13.0**
Additional Workload	**4.0**	**1.6**	**0.9**	**6.6**
Deferrable/Unplanned but Predictable	**0.0**	**0.0**	**0.0**	**0.0**

Table 68

Allocation of efficient overspend IS and System Operation costs into categories of expenditure (additional work or deferrable/reasonably predictable).

We have looked at the full 5 year allowance and where the phasing of the actual expenditure is out of line with the allowance the total allowed work has been adjusted to allow the GDN the full benefit of the total allowed expenditure for the full 5 year period. Where expenditure is over this total 5 year level we have to form a judgement as to whether the expenditure falls into the category additional work or deferrable/reasonably predictable work.

We have found very few situations where we believe the work should have been deferred as in most cases the work has an NPV and delivers (or intends to deliver) benefits. In the examples where we have classified expenditure as deferrable we have made the appropriate comments.

Unless there are exceptional circumstances we have not regarded the overspending of an IS or System Operation project as predictable. Further, particularly in the case of the Ulysses project, when expenditure has been disallowed as inefficient spending we have treated any subsequent expenditure to deliver the same functionality as additional work, so as not to penalise the Network twice. Should any expenditure which has been disallowed be subsequently re-classified, a review of the overspend should also be undertaken at the same time.

We have not discovered any material IS project which we believe had no forecast in the allowance and which should have been reasonably predicted.

[3] Note xoserve was not set up until April 2005

7.3.3.1 Non-Operational Capex (Direct)

The results are shown in the graph below and demonstrate that WWU's plans for vehicle replacement are closely aligned to the weighted average. They are slightly below the average spend in early years. As the expenditure is well below allowances for this area we recommend that the whole expenditure is allowed.

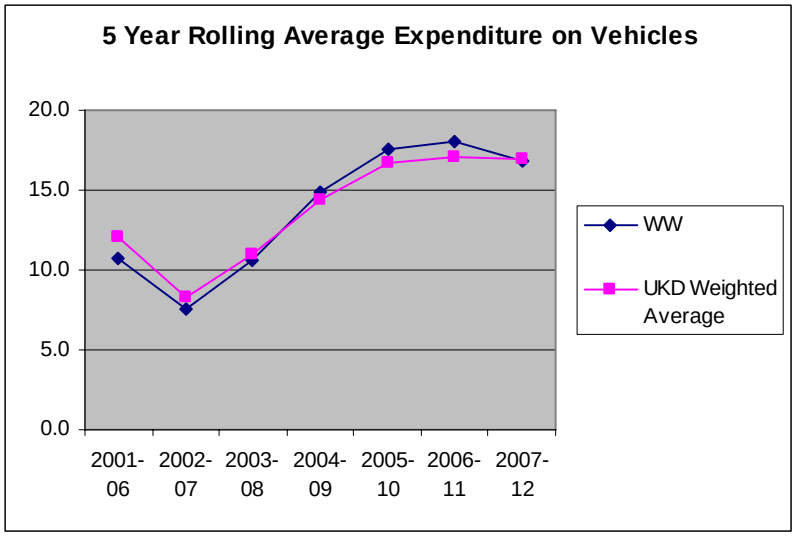


Figure 31

7.3.3.2 System Operation

We understand that the expenditure on System Operation during this period was associated with the Ulysses project. As a result of the management of the Ulysses project as discussed in section 1.2.1.2 we have concluded that during the period April 2002 to March 2005 WW networks' share of the inefficient spend was £1.8m.

7.3.3.3 IS

Until the sale of the network occurred in June 2005 IS services to the network were centrally provided by NGG. Appendix 4 gives the background to our analysis of the IS provision for this period.

The main conclusions drawn from our analysis are that NGG have an IS project control system in place which does provide an adequate element of control particularly for small projects. However, the larger projects (Ulysses & Quarterback) seem to suffer initial project under-estimates and large overspends to complete the project. We believe a major reason is the lack of a full understanding of the project scope and complexity at the outset.

There were significant delays between the time that potential for overspends were identified and the formal re-sanction being obtained. These delays reduced the options for the Executive to cancel or amend projects as expenditure was already committed.

A benchmarking exercise has been carried out by Compass for the provision of IS services to the whole NGG group for the financial year 2004/05.

The report concludes: *"The* sourcing *strategy of NG clearly delivers benefits in terms of reduced costs to the organisation. As with any organisation there are areas where performance could be improved, but the overall conclusion is that NG is doing the majority of things well. Compass considers that both the CSC contract and the selective sourcing of the ADSM services are consistent with leading practice in the sourcing of IT services."*

Based on the Compass report we conclude that in general the provision of IS services for the period to March 2005 does not have systemic inefficiency associated with IS provision.

We do, however, believe that in the large Quarterback Programme/Project (QB) there is inefficient expenditure. QB costs have been reported in both the Opex and Capex regulatory accounts. A total £51.3 million of software development costs for QB was classed as Opex in the regulatory accounts but has been reclassified as Capex for the purposes of the RAV roll forwards tables in the BPQ submission. In reviewing the project we have taken the total project costs into account. However, as this additional "Capex" has not been included in the non-operational Capex tables in the BPQ it does not form part of PB Power's adjustments to costs.

We have concluded that in outturn prices the project in total spent £76.8m, comprising £51.3m Opex and £25.5m Capex (charged to distribution). We believe there is inefficient expenditure included within this sum of between £8m and £26m. Taking the midpoint of this estimate, uplifting to 2005/06 prices and taking a pro-rata figure for just the reported Capex elements; we have deemed a total of £3.4m to have been inefficiently spent across all GDNs. The total value for the WW network on a percentage basis is therefore £0.4m.

Whilst we believe it is possible that further inefficiencies have occurred within other projects undertaken during the period we have not found sufficient reason to apply percentage inefficiencies across all projects.

7.3.3.4 xoserve

The company xoserve was not formed until May 2005. Therefore there was no xoserve expenditure during this period. Prior to xoserve being created the activities were carried out as part of NGG normal operations.

7.3.3.5 Non-Operational Allocated

The largest category of expenditure in this area is *Other charges <0.5m*. The information provided does not give further explanation of the items contained within this category. We have noted that the items contained within this area of expenditure include property, vehicles and other recharges. The overspend in this category is balance by an underspend in the *Non-Operational (Direct)* category. Please see our comments under forecast for a comment about the total 5 year position. We have therefore concluded that the 5 year overspend of £6.6m should by offset by the underspend in the *Non-Operational (Direct)* area of £4.5m giving a combined overspend of £2.1m.

7.4 FORECAST EXPENDITURE

7.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

Non-Operational Net Capex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Non-Operational Direct	Furniture and fittings	0.0	0.1	0.0	0.0	1.5	1.6
	Meters	0.5	0.0	0.0	0.0	0.0	0.5
	Security	0.0	0.0	0.0	0.0	0.1	0.1
	Telecoms, Office	0.1	0.0	0.0	0.0	0.0	0.1
	Vehicles	1.4	0.0	0.1	1.3	4.6	7.4
	Wheeled plant	0.0	0.0	0.0	0.0	0.8	0.8
	Total Actual	2.1	0.1	0.1	1.3	7.0	10.6
	Allowance	2.9	3.0	3.0	3.0	3.2	15.1
	Variance	-0.8	-2.9	-2.8	-1.7	3.8	-4.5
System Operation	Total Actual	0.0	1.4	1.2	0.0	0.0	2.6
	Allowance	0.9	0.1	0.3	1.0	0.9	3.3
	Variance	-0.9	1.2	0.9	-1.0	-0.9	-0.6
IS	Total Actual	2.5	3.2	3.4	32.6	14.2	55.9
	Allowance	7.4	6.8	2.2	2.7	3.2	22.3
	Variance	-4.9	-3.6	1.2	29.9	11.0	33.5
xoserve[4]	Total Actual	0.0	0.0	0.0	0.0	0.1	0.1
	Allowance	0.0	0.0	0.0	0.0	0.0	0.0
	Variance	0.0	0.0	0.0	0.0	0.1	0.1
Non-Operational (Allocated)	Allocation of accounting control	0.0	0.0	1.0	0.0	0.0	1.0
	Other charges<£0.5m	1.7	1.4	0.0	0.0	0.0	3.1
	Property	0.5	0.4	0.1	0.0	0.0	1.1
	Recharges LTS, P&M, Mains	0.0	0.0	0.4	0.0	0.0	0.4
	Vehicles (NS & ES)	1.3	0.0	0.0	0.0	0.0	1.3
	VESAS (Non-Ops)	0.9	0.0	0.0	0.0	0.0	0.9
	Total Actual	4.5	1.8	1.5	0.0	0.0	7.8
	Allowance	0.4	0.2	0.2	0.2	0.2	1.2
	Variance	4.0	1.6	1.3	-0.2	-0.2	6.6
Total	Total Actual	9.0	6.4	6.3	33.9	21.3	76.9
	Allowance	11.6	10.1	5.7	7.0	7.5	41.9
	Variance	-2.6	-3.7	0.6	27.0	13.8	35.0

Table 69

[4] Note xoserve was not set-up until April 2005

7.4.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

WWU state that they making substantial investments in IT during this period. They expect the expenditure will be concluded by the end of 2006/07 and that after that investment will be primarily on a care and maintenance basis, plus the replacement of equipment that is life expired. They state the one exception to this will the IT investment associated with SOMSA which will continue until 2009/10.

7.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

Non Operational Net Capex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	9.0	6.4	6.3	**33.9**	**21.3**	**76.9**	**16.5**
Adjustments	1.0	0.7	0.5	**14.3**	**6.1**	**22.5**	**3.1**
Non-Operational Direct	0.0	0.0	0.0	0.0	0.0	0.0	0.0
System Operation	0.9	0.5	0.4	0.0	0.0	1.8	0.0
IS	0.1	0.2	0.1	14.3	6.1	20.7	3.1
Xoserve	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-Operational Allocated	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ofgem Adjusted Forecast Net Investment	8.0	5.8	5.8	**19.6**	**15.2**	**54.4**	**13.4**
Allowed Workload	4.0	4.2	4.8	**10.5**	**11.6**	**35.0**	
Additional Workload	4.0	1.6	0.9	**8.0**	**3.2**	**17.7**	
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	**1.2**	**0.5**	**1.8**	

Table 70

7.4.3.1 Non-Operational Direct

As explained in section 7.2.3.1 the largest item of expenditure in the area is on vehicles. As explained previously we believe WWU forecast expenditure is in line with a weighted UKD average and we find no reason to adjust their forecast. The forecast 5 year variance gives an underspend of £4.5m.

7.4.3.2 System Operation

During 2005/06 expenditure was associated with the installation of telemetry by the Ulysses project. As a result of the management of the Ulysses project as discussed in section 7.2.1.2 we have concluded that during this year there was no additional inefficient spend in WW network.

The forecast expenditure for 2006/07 is associated with the replacement of GTMS system. We consider the estimates for this project to be reasonable and have therefore not made any adjustments to these forecasts.

7.4.3.3 IS

Background to IS Systems

As part of the sales process the systems supporting the Network was split between those labelled the “back office” systems and those labelled “front office” systems. Essentially the back office systems are those required to run any business such as financial accounting, payroll and general procurement. The front office systems are those systems which have over the years been created or procured by Transco for the specific purpose of managing activities associated with running a gas distribution business. In order to demonstrate the

operation of a new standalone business the back office systems were required to be put in place at the time of the sale process. Following the sale, the front office systems continued to be provided by National Grid to the sold networks on a contractual basis, under the Front Office Managed Service Agreement (FOMSA). Whilst the FOMSA systems continued past the network sales strong contractual terms required that the new owners migrated away from these services at least 18 months after the sale. WWU has commissioned a programme of activities aimed at migrating from the FOMSA suite of systems.

Systems Procurement and Approval Issues

In considering the options for the replacement of these systems WWU have concluded their submission, that the existing systems do not meet WWU's longer term business objectives:-

For a number of reasons, the NG systems do not provide the appropriate functionality to realise our model:

- *the sheer number of separate systems requires complex interfaces which are not flexible to further change;*
- *the systems do not appear to cope well with the requirements to have multi-skilled staff being allocated to a variety of work;*
- *furthermore, consistent with central control, the systems assume more than one business function allocating staff to jobs;*
- *whilst management information is delivered, it is often difficult to extract given the number of different systems providing elements of it. Specialised extraction routines can be written but this requires a high degree of technical skill and does not easily permit ad hoc extractions to investigate particular issues.*

Furthermore they have stated that they believe the National Grid systems to be either obsolete or approaching obsolescence:-

We know that in a number of cases NG systems are either obsolete or approaching obsolescence. The evidence for this includes:

- *technical discussions with NG that indicate in a number of areas the use of systems that are no longer fully supported, do not reflect recent technological advances or otherwise no longer appear fit for purpose. For example the network analysis tool GBNA was implemented in the early 90s and currently utilises unsupported technologies, such as its DecAlpha boxes and VMS operating system. We will replace this with the fully supported Advantica product Synergee.*
- *the relatively short life of IT systems generally, often five or ten years, and the fact that a number of NG systems have been in place beyond such lives. As noted earlier, for example, the Emergency and Meter Works System (EMW) is over 10 years old. This will be replaced within WWU by SAP.*
- *empirical evidence, discussed later, that NG has not fully spent the IT budget in our region. In effect, therefore, our plan delivers the investment that should already have taken place.*

Having reviewed the approval documentation for the IS projects it would appear that the urgent need to proceed to meet the requirements of separation and FOMSA exit has pushed the approval through with little of the normal financial rigor that would be expected of investment approval procedure.

WWU took a strategic decision to adopt an enterprise wide solution to their systems approach rather than procuring a collection of business area specific packages linked together. Having taken this decision they investigated the market and narrowed the selection from 5 potential products to a shortlist of two (SAP and Oracle). The final selection being

made for SAP. We have reviewed the MGM board paper for this decision and are surprised that the paper did not have supporting the decision any documentation regarding the cost impact of the strategy. This board approval for the strategy is then quoted in all subsequent approvals as giving the direction for investments. It is therefore difficult to conclude that WWU have demonstrated the best value route to their systems procurement. This concern is also highlighted by the high costs when compared to other GDNs for the review period (see section 7.5.1

We are also of the opinion that the speed by which WWU are planning to completely replace the FOMSA suite of systems will mean that a risk premium will have been built into the procurement costs both by suppliers and by their own internal project management and support costs being so much higher.

On a positive note if WWU successfully achieve the implementation of their plans with relatively small ongoing support costs (due to due to poor process/system match or process workarounds due to functionality gaps) they will position WWU with the potential for performance improvements post 2006/07 together with the opportunity for output/customer improvement.

We do note however that the speed required to press on with their plans and approvals is further evidenced by the fact that no business efficiency benefits have been associated with the investment in new IS systems. This is even more surprising given WWU's own admission that their own business model is quite different from to that employed previously by National Grid and the new systems are required to support this new model.

Categorisation of Projects

We do not fundamentally challenge either of the positions that the systems do not support business model aspirations or that the existing systems are variously approaching their natural life replacement window. However, other considerations need to be taken into account.

We note that WWU have categorised all of the expenditure between Replacement, Obsolescence and Enhancements. The replacement category, they claim, includes expenditure to achieve separation under the sales process, brought forward replacement of systems and offsetting costs reductions elsewhere. WWU admit that such allocation of costs between these categories is largely subjective and they state their estimates are indicative, estimated to the nearest 10% allocation. In addition the further split of the Replacement category has not been attempted. The total split between the categories proposed by WWU is given in the table below.

IS Expenditure Categories All figures £m 2005/06 Prices	Replacement	Obsolescence	Enhancement	Total
Total Expenditure	14.1	9.5	23.6	47.2

Table 71

In analysing the projects that have been submitted by WWU there seem to be inconsistencies in the way that the allocations have been made. For example the project to replace the Work Management Systems (Storms/Tear/MIMS) has been split 40% Replacement, 20% Obsolescence and 40% Enhancement; however the project to replace the Scheduling and Dispatch systems (JIS/Quarterback) is allocated 100% to Enhancement.

We believe the Enhancement Category deserves particular comment as this category should largely be justified on tangible business benefits. A simple NPV analysis of expenditure of the order of £24m over a seven year life would be expected to delivery year on year Opex savings of the order of £5m. WWU admit that they have not provided any cost benefit analysis to any of the £47m expenditure approvals, the approval being granted on the basis that the work is necessary to achieve separation and the new business model.

We have documented our conclusions on this categorisation at the end of this section.

Customer Outputs

WWU are planning to complete 39 IS projects prior to March 2007. The benefits targeted by these projects has been reviewed and below are listed those benefits which are targeting an improvement to the customer. No details of specific targets for these benefits have been found, therefore tracking the delivery of these customer improvements will be subjective.

Project	Benefit
SAP CRM	A system to allow the better tracking of customer complaints.
Connections	Improved quality of service and performance, Increased flexibility to suit Customer requirements, Improved customer and consumer satisfaction
Front Office – The Transform Programme	Improved standards of service by better scheduling and despatch, better customer appointment management, quicker response to emergencies
Front Office – Schedule and Dispatch	Scheduling and despatch would in future include appointment booking for customer complaints, site visits etc allowing for better use of staff time and fewer broken appointments.
Front Office – Back Office Integration	Sales and distribution: The solution will enable all accepted customer quotations to be used to generate pre-populated or automatic work orders which will improve the time taken between a customer placing an order and the work being initiated.

Table 72

Conclusions

We have considered the points made by WWU on the nature and causes for IS expenditure in 2005/06 and 2006/07. We would like to commend WWU for the presentation of information in this area. The allocation of expenditure, as WWU has commented, is complex and to a large degree subjective. We have, however, reached conclusions for how the expenditure should be categorised. We are of the opinion that a scheme of this scale complexity and timescales carries a premium relating to the risk of implementation in such a short timescale.

We have estimated that this premium is between 10% to 15% of the total project total. We have therefore excluded this element as wasteful as this timescales is imposed by the sales process. We have used a mid-point of this range which amounts to £5.9m.

We have concluded that the total amount of Back Office expenditure designated by WWU is sales related.

We believe the timing of the Infrastructure replacement is not significantly earlier than would have been required by the normal replacement process.

We have considered the Front Office systems and have concluded that the amount for designed by WWU for replacement should be increased for the following reasons:

i) The GIS has recently been upgrade by NGG

ii) The dispatch systems have recently been upgraded by NGG (Quarterback)

Given the amount of IS work being implement we believe the £2m allocation for unspecified projects could be deferred.

The table below documents our conclusions on how the expenditure should be treated.

IS Expenditure Categorisation All figures £m 2005/06 Prices	Back Office	Infrastructure	Front Office	Other	Inefficient	Totals
Sales	4.1	0.0	10.3	0.0	0.0	14.4
Inefficient	0.0	0.0	0.0	0.0	5.9	5.9
Allowed	4.5	4.7	6.4	0.0	0.0	15.6
Additional	0.0	0.0	6.4	3.0	0.0	9.4
Deferrable	0.0	0.0	0.0	1.8	0.0	1.8
Total	8.6	4.7	23.1	4.8	5.9	47.1

Table 73

7.4.3.4 xoserve

The company xoserve provides transactional services, information system (IS) support and change management on behalf of the GDNs and the NTS. The company was formed in May 2005. The primary recipients of xoserve's services are the networks customers, the gas shippers. WWU has a 10.03% shareholding in xoserve. During the period to March 2007 xoserve will be preparing detailed expenditure plans to replace the technology which their systems are running. This technology refresh, as it is termed, is aimed at minimising the possibility of serious performance and storage issues impacting the competitive gas market. We consider these plans to be necessary and appropriate. We have no adjustments to propose for the xoserve forecasts in North West's Capex plans. Further details are given in Appendix 6.

7.4.3.5 Non-Operational Allocated

Whilst the total 5 year Non-Operational Capex expenditure shows an overspend of £6.6m against the allowances, when offset against the underspend of £4.5m in the Non-Operational (Direct) category the overspend is £2.1m.

7.4.3.6 Summary

The 5 year total non-operational Capex is forecast to overspend by £35.0m. The largest element of this overspend is associated with the IS replacement of the FOMSA systems.

7.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

Non-Operational Net Capex All figures £m 2005/06 Prices	2007/08
Non-Operational Capex Other (Direct)	8.3
System Operation	1.0
IS	6.6
Xoserve	0.6
Non-Operational Capex Other (Allocated)	0.0
Total	16.5

Table 74

We recommend that for 2007/08 the categories of Non-Operational Direct and Allocated (other) are combined into a single category Non Operational (Other)

7.4.4.1 Non-Operational (Other)

As explained in section 7.3.3.1 the largest item of expenditure in the area is on vehicles. As explained previously we believe WWU forecast expenditure is in line with a weighted UKD average and we find no reason to adjust their forecast. Other items in this category are Wheeled Plant, Telemetry and Mobile Vehicles. We believe as part of the five year review these items should possibly be re-assigned to other categories of expenditure.

7.4.4.2 System Operation

The forecast expenditure for 2007/08 is associated with the replacement of GTMS system. We consider the estimates for this project to be reasonable and have therefore not made any adjustments to these forecasts.

7.4.4.3 IS

WWU have not provided details on the expenditure plans for £6.6m on IS in 2007/08. In the absence of details we will recommend an adjustment to bring this expenditure to £3.5m which is the average forecast expenditure for GDNs for the years 2008/09 to 2010/11.

7.4.4.4 xoserve

As we have explained in section 7.4.3.4 above we consider the plans for this period to be appropriate and make no adjustments.

7.4.4.5 Non-Operational Allocated

There is no expenditure forecast in 2007/08 in this category

7.5 FORECAST TRENDS (2002 TO 2013)

7.5.1 HIGH LEVEL TREND

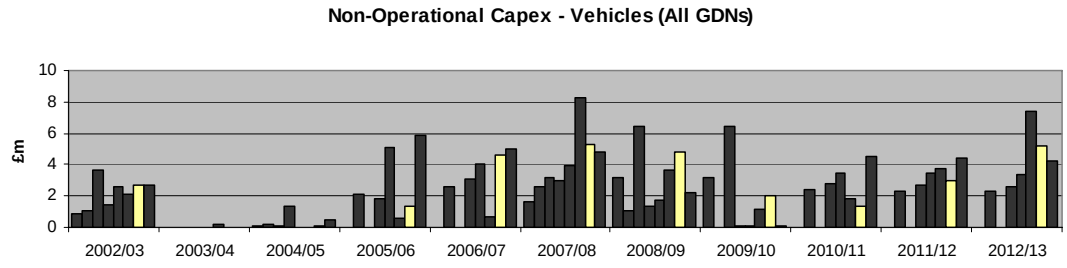


Figure 32

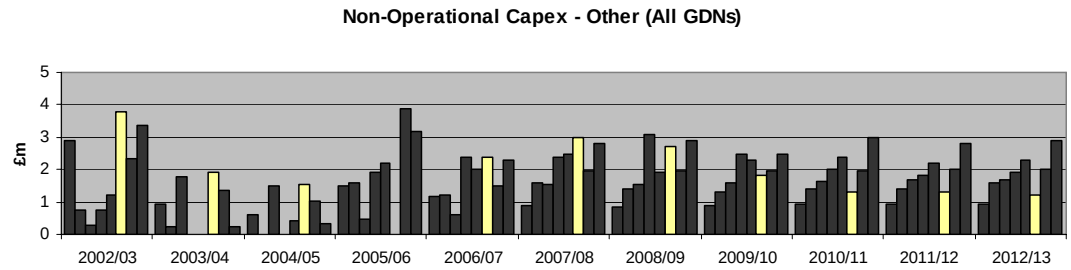


Figure 33

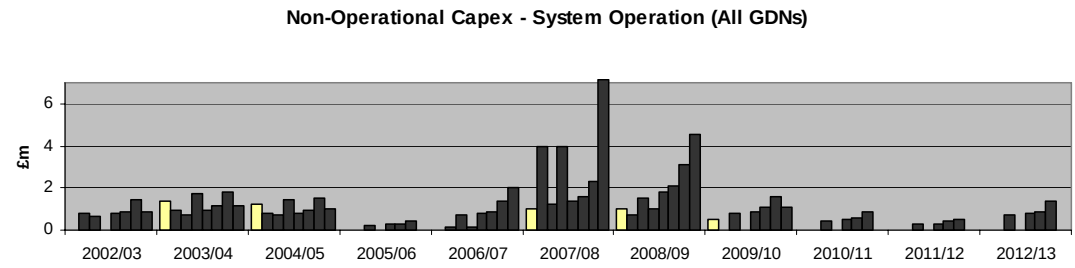


Figure 34

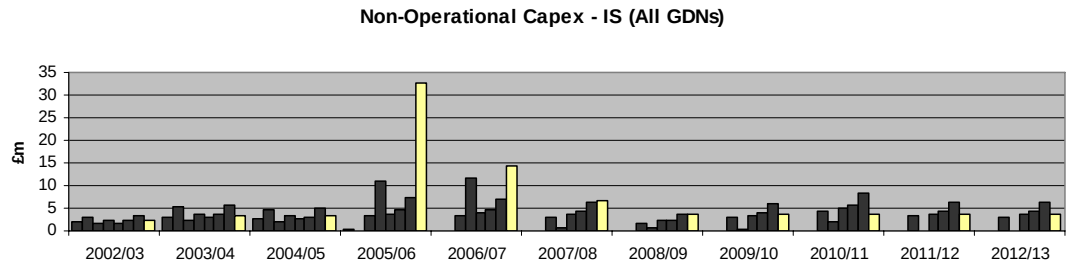


Figure 35

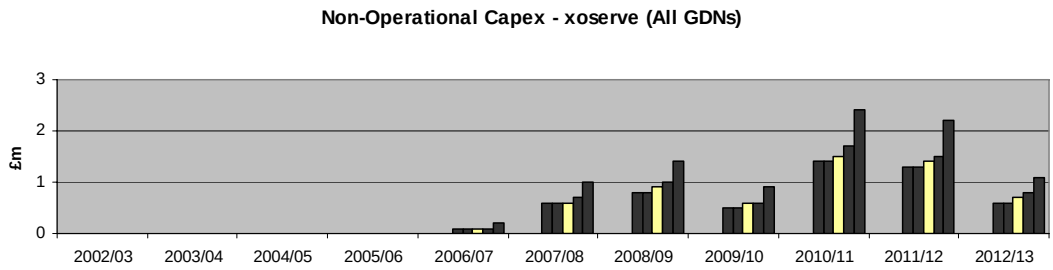


Figure 36

7.5.2 COMMENTS ON TREND

7.5.2.1 Vehicles

The plans would suggest after a period (2003-2005) of very little expenditure on vehicles the GDN is returning a cycle of 5 yearly replacement of the vehicle fleet. This area has not been investigated further although it is recommended that vehicles become a defined area of expenditure in the 5 year review.

7.5.2.2 Non-Operational Other

In order to help understand further the expenditure which has been included within this category a breakdown of the total expenditure for the 5 years 2002/03 to 2006/07 and the 6 years 20007/08 to 2012/13 has been given in the table below.

Non-Operational Other Capex Breakdown of Items All figures £m 2005/06 Prices	2002/03 - 2006/07	2007/08 - 2012/13	Total
Allocation of accounting control	1.0	0.0	1.0
Furniture and fittings	1.6	0.0	1.6
Meters	0.5	0.0	0.5
Mobile vehicles	0.0	2.1	2.1
Other charges<£0.5m	3.1	0.0	3.1
Property	1.1	0.0	1.1
Recharges LTS, P&M, Mains	0.4	0.0	0.4
Security	0.1	2.3	2.4
Telecoms, Office	0.1	0.0	0.1
Tools & Equipment	0.0	3.0	3.0
VESAS	0.9	0.0	0.9
Wheeled plant	0.8	3.9	4.7
Totals	**9.6**	**11.3**	**20.9**

Table 75

7.5.2.3 System Operation

The forecast reflect a peak of expenditure around 2007/08 associated with the planned replacement of the GTMS system.

7.5.2.4 IS

The chart above shows the IS expenditure actual and planned for the years 2002/03 through to 2012/13. The chart clearly shows the level of expenditure concentrated on the years 2005/06 and 2006/07. The issues surrounding these plans have been covered in the preceding paragraphs. The detail for plans post 2008/09 through to 2012/13 is limited and the forecast is a constant level for these years. It is recommended that more attention is given to reviewing the likely expenditure for these years in the 5 year review, when more information will be available about the progress with implementing the FOMSA replacement systems

7.5.2.5 xoserve

As we have commented in Appendix 6 we believe the forecasts for xoserve funding requirements for the rewrite of the UK Link systems should be reviewed during the main 5 year control review.

8 MAINS AND SERVICES REPEX

8.1 SUMMARY OF FINDINGS

8.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

The period was unusual in that Transco, (under an Improvement Order from the HSE) was engaged on the medium pressure ductile iron replacement programme to be completed by the end of 2002. Mains within the programme included larger diameter pipes in urban situations.

Mains unit costs increased by about 30% as Transco ramped-up production from around 1750km of mostly small diameter main (2000) to 2000km (2001) including about 1000km of larger diameter ductile iron. Cost increases will reflect the nature of the work (larger diameters, medium pressure, urban and often in main thoroughfares rather than side streets) and the urgency to complete the programme on time.

Domestic services costs, largely unaffected by the MPDI programme, remained steady. The volume of non-domestic service replacement increased with little change in cost over the period.

Overall, costs are consistent with the reported workload.

8.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

Replacement Mains and Services

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Allowed Net Investment	**40.3**	**34.0**	**41.8**	**40.7**	**37.7**	**194.5**
Total GDN Variance	7.8 +19%	7.1 +21%	8.5 +20%	13.1 +32%	16.6 +44%	53.1 +27%
Reported Net Investment	**48.2**	**41.1**	**50.3**	**53.8**	**54.3**	**247.7**

Table 76

8.1.2.1 Mains Workload

Accepted GDN Programme

WWU is following a programme approved by the HSE. The programme started in 2002 and aims to de-commission all iron mains within 30m of property over the 30 years to 2032. They are currently raising de-commissioning rates to 353km of iron mains/year to achieve this. The need to replace other mains (usually steel) as part of iron mains projects raises the total level of de-commissioning to 397km/yr

HSE requirement was separately defined for the Wales & West Network as follows:

Iron Mains to be De-commissioned	2004/05	2005/06
HSE Requirement (km decommissioned)	303	333
GDN actual (Policy)	304	330
GDN total decommissioned (includes some PE & protected steel; Excludes re-chargeable mains relays.)	354	383

Table 77

The programme for earlier years was agreed at national level. The GDN met the HSE requirement in 2004/05 & 2005/06, but also decommissioned a significant length of other associated main, mostly small diameter unprotected steel. At the time the Price Control was set, these associated mains were replaced on a condition basis, but a change to the GDN's policy & procedures in October 2003 required unprotected steel mains <=2" to be routinely replaced as part of iron mains projects.

The volume of associated main has thus grown, and since the Network must comply with its Safety Case, and defined policies and procedures, such replacement is now unavoidable in so far as it is associated with the de-commissioning of iron mains under the HSE programme.

The mains workload allowance will be exceeded by around 7% over the five years.

8.1.2.2 Services Workload

With the exception of 02/03, when the MP DI programme was active, there were significant and growing Repex services variances in terms of both volume and unit cost. Volumes are driven by the growing mains workload and in particular the inclusion of small diameter steel mains, which tend to have high service connection densities. Because of changes to the GDN's Policy & Procedures this workload is now unavoidable without reference back to the HSE.

The services workload allowance will be exceeded by around 32% over the five years.

8.1.2.3 Mains Costs

Reported mains costs are broadly within the allowance. A feature of the control is that the replacement mains price control allowance is re-calculated each year under the Supplementary Incentive Mechanism. This offers an incentive to the GDN for meeting or beating a forecast cost developed from the mains actually de-commissioned in year. Under the mechanism the GDN also bears half the cost any overspend.

The Supplementary Incentive Mechanism has caused the GDN to secure its position on mains costs, which are depressed, at the expense of services costs.

The mains allowance (not re-calculated) will be exceeded by around £26m (17%) over the five years, after the re-allocation of costs from services.

8.1.2.4 Services Costs

Services costs are consistently high; over twice the allowance taken over five years. Increased volume accounts for about a quarter of the variance and increased costs the remainder. Some of these costs, we believe, arise from mains and have thus been re-

allocated. It is worth noting here that services unit costs are sensitive to any transfer from mains – at an average of one service every 10m of main, a reduction of £1.00/m in mains unit cost will add £10.00 to the service unit cost.

The services allowance (after reallocation of costs to mains) will be exceeded by around £27m (66%) over the five years.

8.1.2.5 Allowances

In forming a view on the efficient level of unit costs we have examined the assumptions made in the control and find that features within the mains and services allowances, (distorted by disaggregation) such as the EfV reduction (mains; -5% each year), the EPC reduction (mains and services; increasing reductions after 03/04 reaching -7.9% in 2006) and the effect of reducing real price effects (added in anticipation of costs rising above RPI during the "ramp-up" phase) combine to produce unit costs that are challenging for the Network in the current economic environment.

8.1.2.6 Completed Years

To address the distortion of mains and services costs, a proportion of services costs have been re-allocated to mains and the Supplementary Incentive Mechanism.

Adjustments are recommended in respect of direct and contract costs.

8.1.2.7 Future Years

Re-allocations from services to mains continue to the end of 2006/07.

There is no reallocation in 2007/08, assuming the review of the Supplementary Incentive Mechanism and allowing a return to appropriate cost allocation.

There are continuing adjustments to services reflecting on-going contract and direct labour inefficiencies under the current arrangements. A 2007/08 adjustment reflects the removal of TMA costs and anticipated efficiency improvements of 1.4%.

8.1.2.8 Re-chargeable Diversions

For clarity re-chargeable diversions are omitted from the tables.

The net costs arising from this work are not material and we recommend that these are categorised as allowed workload.

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03		2003/04		2004/05		2005/06		2006/07		5 year Total		2007/08
Allowed Net Investment	**40.3**		**34.0**		**41.8**		**40.7**		**37.7**		**194.5**		
Total GDN Variance	**7.8**	**+19%**	**7.1**	**+21%**	**8.5**	**+20%**	**13.1**	**+32%**	**16.6**	**+44%**	**53.1**	**+27%**	
Mains (as reported)	2.7	+8%	-2.3	-9%	-0.3	-1%	0.3	+1%	2.4	+8%	2.7	+2%	
Services (as reported)	5.2	+93%	9.4	+129%	8.8	+89%	12.8	+127%	14.2	+160%	50.4	+121%	
Reported Net Investment	**48.2**		**41.1**		**50.3**		**53.8**		**54.3**		**247.7**		**59.7**
Total GDN Variance (after re-allocation by PB Power) 2.3.1.3	**7.8**	**+19%**	**7.1**	**+20%**	**8.5**	**+20%**	**13.1**	**+31%**	**16.6**	**+43%**	**53.1**	**+27%**	
Mains (after re-allocation)	5.0	+14%	1.6	+6%	4.2	+13%	6.2	+20%	8.7	+30%	25.7	+17%	
Services (after re-allocation)	2.8	+51%	5.5	+75%	4.3	+43%	6.9	+69%	7.9	+89%	27.4	+66%	
Restated Net Investment (after re-allocation)	**48.2**		**41.1**		**50.3**		**53.8**		**54.3**		**247.7**		**59.7**
Wasteful/Unnecessary Actual/Forecast Expenditure	**0.2**		**0.4**		**0.4**						**1.0**		
Adjustments to Actual/Forecast							**0.6**		**0.7**		**1.3**		**5.4**
Mains	0.0		0.0		0.0		0.0		0.0		0.0		2.7
Services	0.2		0.4		0.4		0.6		0.7		2.3		2.8
Ofgem Adjusted Net Investment	**47.9**		**40.7**		**49.9**		**53.2**		**53.6**		**245.3**		**54.3**
Mains	39.8		28.3		36.1		36.8		37.5		178.5		
Services	8.1		12.4		13.8		16.4		16.1		66.8		
Allowed Workload	**8.1**		**10.1**		**10.2**		**11.8**		**10.0**		**50.2**		
Additional Workload	**0.0**		**2.3**		**3.6**		**4.6**		**6.1**		**16.6**		
Deferrable/Unplanned but Predictable	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		

Table 78

8.2 BACKGROUND

The replacement of metallic mains and services is an essential part of the GDN's strategy for controlling the risk arising from the network. The rate of replacement and the procedures associated with the selection of pipes and development of projects are regulated by the HSE using the Gas Safety (Management) Regulations and the Pipelines Safety Regulations to enforce its policy. Ofgem's role is to ensure that the GDN can fund the programme and that it is efficiently executed.

During the period under review HSE requirements and Transco policy and procedures have changed, and the key events are listed below.

Changes to HSE and other requirements

Time Line	
2000	HSE issues an Improvement Notice in September 2000 requiring 2360 km of MP DI main within 30m of premises to be de-commissioned by 31.12.2002.
2001	HSE publishes its Enforcement Policy for the replacement of iron gas mains. 91,000km of cast and ductile mains believed to be within 30m of premises. Note that the policy does not include steel mains or service pipes. Ofgem increases mains and services Repex allowances to accommodate the HSE requirement.
2002	Transco introduces T/PR/REP2 policy and procedure for replacement. REP2 requires steel services to be replaced irrespective of condition (previously PE clad steel services could be transferred if in satisfactory condition) and unprotected steel <=2" to be replaced in the course of routine replacement work. >2" steel subject to risk assessment. Previously these pipes replaced on a condition basis. Initial (20/70/10) policy introduced (supported by "Smallworld")
2003	Pipeline Safety Regulations amended to require GDN's to submit a replacement programme for approval. Physical survey reveals that actual population of iron mains was 101,000km at 01.04.02 requiring a 10% increase in production to complete the programme within 30 years. Transco submit an amended 20/70/10 policy (supported by MRDST) to HSE for approval. Agreed providing an equivalent amount of risk is removed from the system each year, and requiring an additional 10% of mains to be de-commissioned. HSE requires a minimum national rate of 3,500km/yr de-commissioned mains (an increase from 3,240km) from 06/07 to meet the 30 yr programme.
2004	Steel pipe included in the risk model.

Table 79

8.3 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

Workload and costs for the 15 months to March 2002 have been examined. The period was unusual in that Transco, (under an Improvement Order from the HSE) was engaged on the medium pressure ductile iron replacement programme to be completed by the end of 2002. Mains within the programme included larger diameter pipes in urban situations.

Mains unit costs increased by about 30% as Transco ramped-up production from around 1750km of mostly small diameter main (2000) to 2000km (2001) including about 1000km of larger diameter ductile iron. Cost increases will reflect the nature of the work (larger

diameters, medium pressure, urban and often in main thoroughfares rather than side streets) and the urgency to complete the programme on time.

Domestic services costs, largely unaffected by the MPDI programme, remained steady. The volume of non-domestic service replacement increased with little change in cost over the period.

Overall, costs are consistent with the reported workload.

8.4 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

8.4.1 HIGH LEVEL VARIANCES ANALYSIS

8.4.1.1 Mains Volumes

Length of mains abandoned All figures km	2002/03	2003/04	2004/05
Ofgem Allowance	258.0	308.6	347.3
GDN Actual	303.0	308.0	354.3
Variance	45.0	-0.6	7.0

Table 80

There is a significant variance in 02/03 due to the effects of the national MPDI replacement programme.

Broadly neutral variances in 03/04 & 04/05 are followed by increasingly large variances driven by:

- The ramp-up of the Network programme
- The discovery of additional mains within 30m of property following survey.
- The HSE requirement that GDN's increase production by 10% on introduction of the 20/70/10 policy.
- The re-classification by GDNs of unprotected (without cathodic protection) steel mains as non-standard and the routine inclusion of smaller diameters within replacement projects where associated with CI or DI mains. (Not part of the HSE's iron pipe programme)

Overall WW's forecast mains Repex will be around 117km (7%) above the allowance over five years.

8.4.1.2 Services Volumes

Services Replaced or Transferred	2002/03	2003/04	2004/05
Ofgem Allowance	25,589	30,276	33,645
GDN Actual	23,383	37,084	45,449
Variance	-2,206	6,808	11,804

Table 81

The variance in 02/03 is due to the effects of the national MPDI replacement programme.

There are increasing variances from 03/04 driven by:

- The ramp-up of the GDN mains programme.
- An insufficient allocation within the allowance.
- Additional mains replacement (over and above the allowance) to deal with steel mains as described above.

Overall the WW Network is forecast to be around 50,000 services jobs (32%) above the allowance over five years.

8.4.1.3 Mains Costs

Mains Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Mains (as reported)	37.5	24.4	31.6	93.5
Re-allocation from Services	2.4	3.9	4.5	10.8
Total Mains	**39.8**	**28.3**	**36.1**	**104.2**
Allowance	34.8	26.7	31.9	93.4
Variance	5.0	1.6	4.2	10.8

Table 82

Mains expenditure is £10.8m above the allowance due to the re-allocation from services and increased mains and services volumes and costs.

Over five years the GDN is expected to be £26m (17%) above the allowance after the re-allocation of costs from services.

8.4.1.4 Services Costs

Services Repex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Services (actual)	10.7	16.7	18.8	46.1
Re-allocation to Mains	2.4	3.9	4.5	10.8
Total Services	**8.3**	**12.8**	**14.2**	**35.3**
Allowance	5.5	7.3	9.9	22.7
Variance	2.8	5.5	4.3	12.6

Table 83

Services expenditure is £12.6m above the allowance after the re-allocation

There are significant and increasing variances driven by the volumes variances detailed in above and:

- A rate of price inflation within the construction sector that is significantly higher than RPI.
- The re-classification by GDNs of unprotected (without cathodic protection) steel services as non-standard and their subsequent policy replacement, rather than retention and transfer, when discovered. The re-classification by GDNs of unprotected (without cathodic protection) steel services as non-standard and their subsequent policy replacement, rather than retention and transfer, when discovered.
- A distortion of the unit costs within the allowance caused at separation.

Over five years the GDN is expected to be £27m (66%) above the allowance after the re-allocation of costs to mains.

8.4.2 REASONS FOR VARIANCES

Key points raised by WWU in their submission are:

8.4.2.1 Services volumes are much higher than allowance.

GDN volumes are significantly greater than those allowed at separation of the price control. We have found no evidence that any of the work in the period 02/03 – 04/05 was unnecessary or avoidable and therefore we recommend that these volumes be allowed as additional workload. (Note that Transco services forecasts were scaled-back at the last review.)

The cost allowed for domestic and non-domestic services was inadequate.

8.4.2.2 Allowed Costs

Allowed services costs were developed from the Transco submissions at the 2001 price control review. We understand that these submissions reflected contemporary costs but note the adjustments made for anticipated efficiencies (replacement by the servi-flex method and EPC cost reductions) combined to exert a downward pressure on costs.

8.4.2.3 The changing relationship between mains and services costs

At the time of Transco's submissions to Ofgem the EPC contracts were operated on a target cost basis, designed to exert downward pressure on costs; this was changed to a fixed price basis, with annual review, at around the end of 2001. This change, which limited mains and services costs to RPI-2% whilst allowing individual rates to be reviewed, has inevitably skewed the relationship between mains and services costs. For this reason we have considered mains and services Repex expenditure and allowances as a whole in our analysis.

8.4.2.4 Construction price inflation is higher than that measured by RPI.

We acknowledge this to be the case, but the gap between WW Network's actual services costs and the allowance is much higher than can be explained by application of a construction cost index.

8.4.3 EFFICIENCY ANALYSIS

8.4.3.1 Project Review

A mains and services replacement project was reviewed and from the information supplied we can confirm that the selection of pipes for replacement, the design and project costing substantially followed the required processes. The project was authorised under the delegated authority of the Head of Network.

The degree of completion of the project and/or the currency of the mains information displayed on the MAPS print supplied is in doubt, and further information has been requested from the WWU.

A short report of the project is attached as appendix 8.

8.4.3.2 Unit Costs

The real relationship between mains and services costs in some GDNs is uncertain and the use of bundled rates introduces further uncertainties unless these costs are properly allocated,

Comparative analysis of unit costs has thus proved difficult as within WW Network there are significant year to year unit cost variances; there are also significant (within year) variances between the unit costs of similar jobs. Similar issues exist in other GDNs and it would be unsafe at present to draw conclusions about efficiency from inter-GDN unit cost comparisons.

Long term, after appropriate cost reporting arrangements have been introduced to remove these anomalies, cost comparison between GDNs will become a key part of efficiency assessment.

8.4.3.3 Construction Contracts

Most of the Network's Repex work is carried out by contractor via EPC contracts. Initially of the target price format with efficiency sharing incentives, these contracts were changed in April 2002 to a fixed price format through re-tender by the incumbents and subsequent negotiation.

The EPC contracts in place at this time were of five year duration, but were approaching their three year anniversary and possible termination under the contract terms. If the Network wished to move to a new form of contract then an open market re-tender, rather than re-negotiation of the contracts, would have been appropriate.

The format of the revised contracts is unusual, with the replacement mains & services schedule linked to RPI–2%, and other schedules linked to RPI, and all subject to regular rate review. It is likely that the Network accepted increased overall costs in exchange for fixed (RPI-2%) replacement rates and more certain financial performance relative to the Supplementary Incentive Mechanism.

We judge the increase relative to the move to fixed rates likely to be in the range 0 – 10% and have applied an adjustment of -5% to services to reflect this. Note that we have not applied this adjustment to mains because the Supplementary Incentive Mechanism deals with variances within the control.

Another effect of the contract arrangements (and the Supplementary Incentive Mechanism) has been to distort the allocation of costs to mains and services. On a unit costs basis services are significantly more than the allowance and we estimate that up to 42% of services costs may have been re-allocated from mains by the contract arrangements. However, in recognition of the often subjective nature of contract pricing, we have re-allocated 30% of services costs to mains each year.

8.4.3.4 Direct Employees

A small proportion of Repex work is carried out by direct employees, often when emergency work levels are low. Personal/crew productivity is no longer recorded and managers have to rely on proxy measures when undertaking performance reviews. We acknowledge that direct employees may be disrupted by emergency work or other duties, and in some circumstances may not appear to be efficient, however we believe it fundamental to the management of this resource that individual or team achievement is recorded and available to managers on a weekly basis. In respect of this we regard up to 15% of production to have been at risk and have adjusted costs by 7.5% to reflect this.

8.4.3.5 Materials Procurement & Wastage

Procurement processes have been reviewed and there is no evidence of inefficiency or excessive wastage of materials

8.4.3.6 Capitalised Overheads

The cost of overheads is clear and we have made a comparison between the GDNs (04/05), comparing gross mains and services expenditure and the associated overhead. Overheads form a significant part of the GDN's costs – 16% in 2004/05 compared with an average for all GDNs of 14% in the same year. Overheads are driven by a mixture of semi-fixed (e.g. project preparation and design) and variable costs (e.g. Employee Related Overheads in so much that the proportions of direct labour working on Repex projects may change) and are not therefore meaningfully compared at this level. However we recommend that overhead allocation is included as part of the forthcoming five year review.

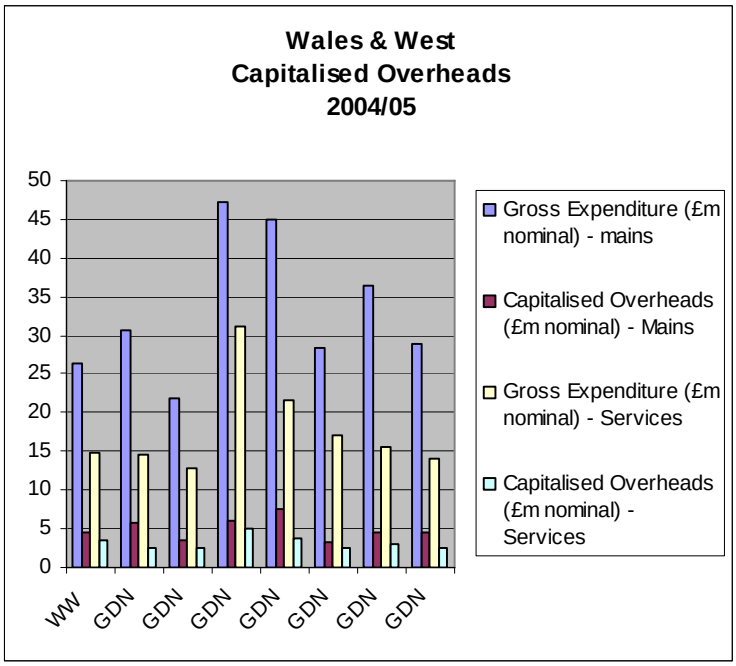


Figure 37

8.4.3.7 Allocation of Costs

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**48.2**	**41.1**	**50.3**	**139.6**
Mains (as reported) 2.3.1.3	37.5	24.4	31.6	93.5
Re-allocation from Services 2.3.1.3	2.4	3.9	4.5	10.8
Total Mains	**39.8**	**28.3**	**36.1**	**104.2**
Services Net Investment	**8.3**	**12.8**	**14.2**	**35.3**
Wasteful/Unnecessary	**0.2**	**0.4**	**0.4**	**1.0**
Mains 2.3.1.3				
Services 2.3.1.3	0.2	0.4	0.4	1.0
Ofgem Adjusted Net Investment	**8.1**	**12.4**	**13.8**	**34.3**
Allowed Workload	**8.1**	**10.1**	**10.2**	**28.5**
Additional Workload	**0.0**	**2.3**	**3.6**	**5.9**
Deferrable/Unplanned but Predictable	**0.0**	**0.0**	**0.0**	**0.0**

Table 84

8.5 FORECAST EXPENDITURE

8.5.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

Mains Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total
Mains (as reported)	37.5	24.4	31.6	30.9	31.2	155.5
Re-allocation from Services	2.4	3.9	4.5	5.9	6.3	23.0
Total Mains	**39.8**	**28.3**	**36.1**	**36.8**	**37.5**	**178.5**
Allowance	**34.8**	**26.7**	**31.9**	**30.6**	**28.8**	**152.8**
Variance	**5.0**	**1.6**	**4.2**	**6.2**	**8.7**	**25.7**

Table 85

Replacement mains trends are expected to continue much as in the first three years of the control period with variances increased by re-allocation from services.

Services Repex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total
Services (as reported)	10.7	16.7	18.8	22.9	23.1	92.1
Re-allocation to Mains	2.4	3.9	4.5	5.9	6.3	23.0
Total Services	**8.3**	**12.8**	**14.2**	**17.0**	**16.8**	**69.1**
Allowance	**5.5**	**7.3**	**9.9**	**10.1**	**8.9**	**41.7**
Variance	**2.8**	**5.5**	**4.3**	**6.9**	**7.9**	**27.4**

Table 86

Services variance is driven by both higher volumes and higher unit costs than those within the allowance.

8.5.2 REASONS FOR VARIANCES (APR 2005 TO MAR 2007)

Reasons for the variance are unchanged from 2002/03 – 2004/05.

8.5.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

Net Repex (Excluding Re-chargeable Mains Diversions) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
Reported Net Investment	**48.2**	**41.1**	**50.3**	**53.8**	**54.3**	**247.7**	**59.7**
Mains (as reported) 2.3.1.3	37.5	24.4	31.6	30.9	31.2	**155.5**	
Re-allocation from Services 2.3.1.3	2.4	3.9	4.5	5.9	6.3	**23.0**	
Total Mains	**39.8**	**28.3**	**36.1**	**36.8**	**37.5**	**178.5**	**34.9**
Services Forecast Net Investment	**8.3**	**12.8**	**14.2**	**17.0**	**16.8**	**69.1**	**24.8**
Adjustments	**0.2**	**0.4**	**0.4**	**0.6**	**0.7**	**2.3**	**5.4**
Mains 2.3.1.3	0.0	0.0	0.0	0.0	0.0	**0.0**	2.7
Services 2.3.1.3	0.2	0.4	0.4	0.6	0.7	**2.3**	2.8
Ofgem Adjusted Forecast	**8.1**	**12.4**	**13.8**	**16.4**	**16.1**	**66.8**	**54.3**
Allowed Workload	**8.1**	**10.1**	**10.2**	**11.8**	**10.0**	**50.2**	
Additional Workload	**0.0**	**2.3**	**3.6**	**4.6**	**6.1**	**16.6**	
Deferrable/Unplanned but Predictable	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	

Table 87

Reallocations from services to mains continue to the end of 2006/07.

There is no reallocation in 2007/08, assuming the review of the Supplementary Incentive Mechanism and allowing a return to appropriate cost allocation.

There are continuing adjustments to services reflecting on-going contract and direct labour inefficiencies under the current arrangements. The 2007/08 adjustment reflects the removal of TMA costs, workload adjustments and anticipated efficiency savings of 1.4%.

8.5.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

8.5.4.1 Adjustments

Volumes

For mains we have accepted the forecast volumes.

For services the GDN is forecasting 117 service jobs (relays or transfers) per km of de-commissioned main in 2007/08. This has been adjusted to 110 jobs/km which we understand to be the current situation in the GDN. A minor adjustment has been made to match the number of "purge and relight" to services jobs.

Costs

We have considered and tested various forms of analysis to assess the efficiency of the proposed expenditure.

Direct inter-GDN comparison is unreliable because the real relationship between mains and services costs in some GDNs is uncertain. The use of bundled mains rates introduces another uncertainty, as does the contract position of each GDN, with some at the end of long contracts and others entering or in the early stages of new arrangements.

To take an overview of efficiency, the GDN workloads for the year have been re-costed using the unit costs (unadjusted) provided by Transco at the last review. This is the best information available to us and there is some confidence that the relationship between the unit costs is representative. The purpose is to apply a common yardstick to the volumes and assess, after adjustments for regional cost differences, the relative positions of the GDNs.

Because of the uncertainties involved, and because this is a comparison of forecasts rather than actual costs, we suggest that GDNs above a benchmark: the 4th most efficient in cost terms, should close 1/3 of the gap between GDN and benchmark; in this case a reduction of 1.4%.

For reasons described above unit costs are as presented and, where anomalies existed, these remain.

Mains (excluding re-chargeable diversions)	As Presented				Proposed inc O/H		
	Vol	Unit Cost	Total	O/H	Vol	Unit Cost	Total
	km	£m	£m	£m	km	£m	£m
<=75mm	266.6	72.4	19.3	0.70	266.6	69.3	18.5
>75mm to 125mm	78.6	75.1	5.9	0.20	78.6	71.7	5.6
>125mm to 180mm	25.8	73.7	1.9	0.10	25.8	71.7	1.8
>180mm to 250mm	13.5	237.3	3.2	0.10	13.5	226.1	3.0
>250mm to 355mm	13.5	244.5	3.3	0.10	13.5	232.7	3.1
>355mm to 500mm	0.0	2222.2	0.1	0.00	0.0	2053.5	0.1
>500mm to 630mm	0.0	0.0	0.0	0.00	0.0	0.0	0.0
>630mm	0.0	0.0	0.0	0.00	0.0	0.0	0.0
Total all sizes	398.0		**33.7**	**1.20**	398.0		**32.2**

Table 88

Replacement Services Domestic	As Presented				Proposed inc O/H		
	Vol	Unit Cost	Total	O/H	Vol	Unit Cost	Total
	Units	£/m	£m	£m	Units	£/m	£m
Relaid services associated with mains replacement	24,746	456.6	11.3	1.00	23,261	461.7	10.7
Relaid services not associated with Mains replacement (bulk relays)	350		0.00	0.00	350	0.0	0.0
Services relaid after escape	3,575	475.5	1.7	0.20	3,575	491.1	1.8
Service test & transfer to new or other main	23,472	272.7	6.4	0.60	22,064	277.1	6.1
Reposition domestic meter - service relays		0		0.00		0.0	0.0
Purge & relight after domestic service work	53,987	25.9	1.4	0.10	51,094	25.8	1.3
Service relay domestic meterwork		0		0.00		0.0	0.0
Other domestic services	1,844	867.7	1.6	0.10	1,844	851.9	1.6
Total domestic services			**22.4**	**2.00**			**21.5**

Table 89

Replacement Services Non Domestic	As Presented				Proposed inc O/H		
	Vol	Unit Cost	Total	O/H	Vol	Unit Cost	Total
	Services	£/service	£m	£m	Services	£/service	£m
Non-domestic service replacement	526	760.5	0.4	0	526	702.7	**0.4**
Non-domestic meterwork associated with mains replacement	0						
Other non-domestic service work	0						
Total non domestic services			**0.4**	**0**			**0.4**

Table 90

8.5.4.2 Supplementary Incentive Mechanism

The Supplementary Incentive Mechanism was introduced to address the "diameter effect" where a workload of smaller diameter mains (than forecast) could produce savings for the GDNs. The scheme also focuses on mains de-commissioned, rather than new main laid, and rewards efficiency in mains replacement.

During the operation of the scheme a number of issues have arisen:

i) Contract rates are skewed in favour of mains and cost transparency of mains and services has been lost.

ii) The correlation between the matrix allowance and actual cost of abandonment is suspect.

iii) The matrix has had an untoward influence on the design of replacement schemes; for example we have heard of instances where one of a pair of mains in a street has been de-commissioned, causing the services to be transferred/relaid to the new main on the other side, when the optimum solution would have been to replace both mains and transfer/relay to the existing mains position.

iv) Replacement projects are being supported by reinforcement mains (Capex) and the true cost of the programme is obscured. "Capitalisation" rules have been changed to include a formula for the situation where a single main replaces two existing mains in a street.

v) In certain circumstances mains may be cut-off e.g. demolition sites and charged to Opex.

In view of the above our recommendation is that the scheme should be reviewed. Mains volumes are reasonably certain through the programme accepted by the HSE, although gaming with the diameter effect remains possible, and could be addressed with a matrix for new rather than de-commissioned pipe. But this is likely to perpetuate the current price distortion. The inclusion of services is another option, but most of the issues above would remain unaddressed and we think it more appropriate that the GDN is rewarded for accurate forecasting of Repex as a whole, perhaps by comparing the forecast volumes and costs with actuals at each year end.

8.6 FORECAST TRENDS (2002 TO 2013)

8.6.1 HIGH LEVEL TREND

8.6.1.1 Mains Activity

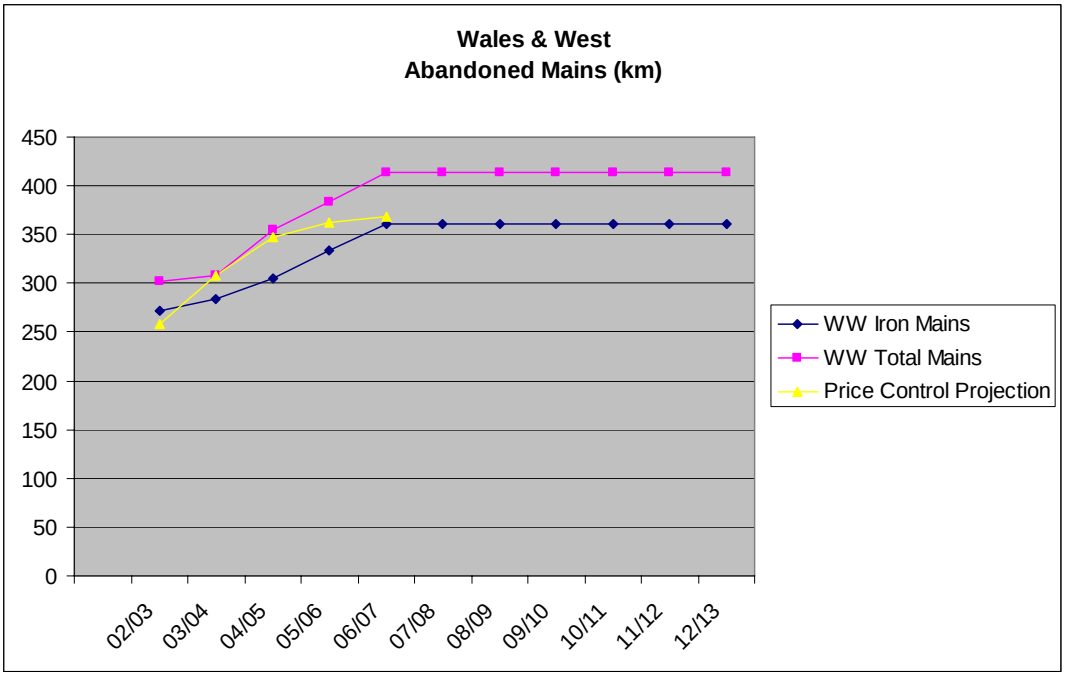


Figure 38

The price control assumed the HSE requirement plus about 12% condition replacement based on historical volumes.

WWU agreed with the HSE to increase the rate of de-commissioning of iron mains by 10% and so total mains de-commissioning is now forecast to run at 414km/yr from 06/07. Given that the condition element of the workload is forecast to run at historical proportions we regard the forecast as accurate.

8.6.1.2 Services Activity

Services estimates within the price control were based on historical ratios with mains de-commissioned. WWU has experienced higher services densities and this, combined with the increase in mains de-commissioned, has led to a significant variance.

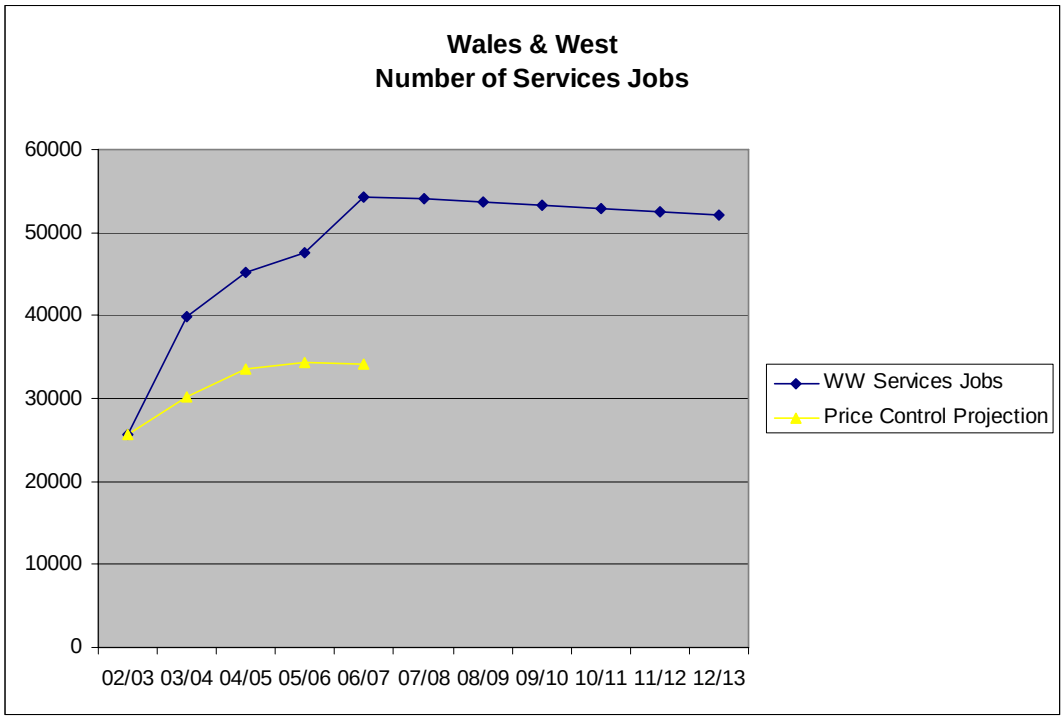


Figure 39

8.6.1.3 Forecasting Issues

Workload

The ramping-up of de-commissioned mains is completed in 2006/07 and the GDN then has to retain, rather than increase its workforce each year. This should help to mitigate cost pressures, although a greater proportion of larger diameter pipes (and human effort) will need to be included as the programme progresses.

The removal of the highest risk pipes is progressing and GDNs have the opportunity to move towards larger projects, subject to acceptance of revised procedures by the HSE. As well as the benefits of scale, these larger projects offer opportunities for innovative management, improved techniques and further (albeit modest) cost reduction. Consumers should also benefit from a more carefully planned and managed operations.

Contracts

WWU is entering into new contracts that are the key to efficient investment. We would expect market testing, new forms of contract, improved processes and larger projects to lead to cost reductions.

Large Diameter Pipes

The size for size replacement of large diameter pipes is expensive and we would expect to see a strategy for each mains network that identified the large diameter mains in the programme and considered alternatives to size for size replacement.

System Condition

The replacement programme is focussed on reducing risk, but as it progresses the network should respond to the investment made. The Network has reported on a number of indicators of network condition e.g. the number of instances of gas in buildings; the number of public reports of escapes received; tonnes of methane lost through leakage etc. Six of the seven indicators are reacting as expected and responding to the investment, but public reports of escapes are predicted to rise. We are surprised at this and recommend that the matter is investigated further at the five year review.

Further details of the indicators and their behaviour are attached at Appendix 9

8.6.2 COMMENTS ON TREND

Disaggregation of the price control allowances, and events since the control was set, has led to a poor match between allowances and actual workload and cost. Volume and cost trends are now clearer although further work is required to give good cost visibility to activity level.

9 LTS REPEX

9.1 SUMMARY OF FINDINGS

9.1.1 15 MONTH PERIOD (JAN 2001 TO MAR 2002)

The Gross Repex spend for all GDNs for the 15 month period was £6.7m with contributions of £4.4m giving a net UK total of £2.3m. There is no specific detail as there is no single project above £0.5m. This expenditure is therefore deemed efficient and allowable. There are no Repex allowances given for this period.

9.1.2 5 YEAR PERIOD (APR 2002 TO MAR 2007)

WWU's BPQ submission listed 5 named projects on which there will be expenditure in the current review period. Four of these are rechargeable and will accrue a net cost of £0.5m over the period. One project is not rechargeable and represents a like for like relay of a pipeline section endangered by river bank erosion; this has a gross cost of £1m.

Net Repex All figures £m 2005/06 prices	2002/03		2003/04		2004/05		2005/06		2006/07	5 year Total		2007/08
Allowed Net Investment	**1.4**		**1.0**		**1.2**		**1.0**		**0.5**	**5.1**		
Total GDN Variance[5]	**-1.4**	**-100%**	**-0.3**	**-30%**	**-1.2**	**-100%**	**-1.0**	**-100%**	**0.0**	**-3.9**	-76%	
Reported Net Investment	**0.0**		**0.8**		**0.0**		**0.0**		**0.4**	**1.1**		**0.0**
Wasteful/Unnecessary Actual Expenditure	0.0		0.0		0.0					**0.0**		
Adjustments to Forecasts							0.0		0.0	0.0		0.0
Ofgem Adjusted Net Investment	**0.0**		**0.8**		**0.0**		**0.0**		**0.4**	**1.1**		**0.0**
Allowed Workload	0.0		0.8		0.0		0.0		0.4	1.1		
Additional Workload	0.0		0.0		0.0		0.0		0.0	0.0		
Deferrable/Unplanned but Predictable	0.0		0.0		0.0		0.0		0.0	0.0		

Table 91

[5] Variance percentage values not included where allowance or actual expenditure values are zero

9.2 HISTORIC EXPENDITURE (JAN 2001 TO MAR 2002)

The RAV adjustment for the period 1 Jan 2001 to 31 March 2002 was not included in the previous review. The LTS Repex expenditure for this period has been submitted by NGG only as a UKD total.

The Gross Repex spend for all GDNs for the 15 month period was £6.7m with contributions of £4.4m giving a net UK total of £2.3m. There is no specific detail as there is no single project above £0.5m. This expenditure is therefore deemed efficient and allowable. There are no Repex allowances given for this period.

9.3 HISTORIC EXPENDITURE (APR 2002 TO MAR 2005)

9.3.1 HIGH LEVEL VARIANCES ANALYSIS

LTS Repex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	3 year Total
Gross	Actual	0.8	0.8	1.8	**3.4**
	Allowance	1.4	1.1	1.1	**3.6**
	Variance	-0.6	-0.3	0.7	**-0.2**
Contributions	Actual	0.8	0.1	1.8	**2.7**
	Allowance	0.0	0.0	0.0	**0.0**
	Variance	0.8	0.1	1.8	**2.7**
Net	Actual	0.0	0.8	0.0	**0.8**
	Allowance	1.4	1.0	1.2	**3.6**
	Variance	-1.4	-0.3	-1.2	**-2.9**

Table 92

9.3.2 REASONS FOR VARIANCES

In the first three years of the period, the actuals exceed the contributions by £0.7m mainly due to the one non rechargeable project. However the allowances were overstated and this has resulted in an underspend against the allowances for the period.

9.3.3 EFFICIENCY ANALYSIS

LTS and Storage Repex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 Year Total
Reported Net Investment	**0.0**	**0.8**	**0.0**	**0.8**
Wasteful/Unnecessary Expenditure	0.0	0.0	0.0	0.0
Ofgem Adjusted Net Investment	**0.0**	**0.8**	**0.0**	**0.8**
Allowed Workload	0.0	0.8	0.0	0.8
Additional Workload	0.0	0.0	0.0	0.0
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	0.0

Table 93

9.3.3.1 Project Review

There were no Repex projects reviewed in this period.

9.4 FORECAST EXPENDITURE

9.4.1 HIGH LEVEL VARIANCES ANALYSIS (APR 2005 TO MAR 2007)

LTS and Storage Repex All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	2005/06	2006/07	5 Year Total	2007/08
GDN Forecast Net Investment	0.0	0.8	0.0	**0.0**	**0.4**	**1.1**	**0.0**
Adjustments	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	**0.0**
Ofgem Adjusted Forecast Net Investment	0.0	0.8	0.0	**0.0**	**0.4**	**1.1**	**0.0**
Allowed Workload	0.0	0.8	0.0	**0.0**	**0.4**	**1.1**	
Additional Workload	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	
Deferrable/Unplanned but Predictable	0.0	0.0	0.0	**0.0**	**0.0**	**0.0**	

Table 94

LTS Repex All figures £m 2005/06 Prices		2002/03	2003/04	2004/05	2005/06	2006/07	5 year Total
Gross	Actual	0.8	0.8	1.8	0.8	2.6	6.8
	Allowance	1.4	1.1	1.1	1.0	0.5	5.1
	Variance	-0.6	-0.3	0.7	-0.2	2.1	1.7
Contributions	Actual	0.8	0.1	1.8	0.8	2.2	5.7
	Allowance	0.0	0.0	0.0	0.0	0.0	0.0
	Variance	0.8	0.1	1.8	0.8	2.2	5.7
Net	Actual	0.0	0.8	0.0	0.0	0.4	1.1
	Allowance	1.4	1.0	1.2	1.0	0.5	5.1
	Variance	-1.4	-0.3	-1.2	-1.0	0.0	-3.9

Table 95

WWU will underspend their allowance by £1.0m in this period.

9.4.2 REASONS FOR VARIANCES

In these two years the gross actual spend closely follows the contributions whilst the allowances exceed the net expenditure. Accordingly the underspend increases by a further £1.0m to £3.9m.

9.4.3 REVIEW OF FORECAST (APR 2005 TO MAR 2007)

WWU will underspend their allowance and the work is deemed to be efficient and necessary.

9.4.4 REVIEW OF FORECAST (APR 2007 TO MAR 2008)

There is LTS Repex expenditure of £0.8m shown in 2007/08. This is matched by a planned contribution of £0.8m. This is deemed to be allowable.

9.5 FORECAST TRENDS (2002 TO 2013)

9.5.1 HIGH LEVEL TREND

Pipeline replacement is nearly always rechargeable. Planning and budgeting for these projects is always difficult as the requirements and especially the timings are driven by third parties; e.g. local authorities, Highways Agency, Network Rail. The policy is to recover the true uplifted costs of the work.

9.5.2 COMMENTS ON TREND

The replacement expenditure shown beyond 2008/09 is under £1m per annum and is matched year on year by contributions. This implies that there is no planned non-rechargeable replacement work.

10 INVESTMENT POLICIES AND PROCEDURES

10.1 REVIEW OF INVESTMENT POLICIES AND PROCEDURES

Expenditure incurred in the years to 2004/05 will have resulted from the Investment Policies and Procedures under NGT and NGG. Much of the expenditure in 2005/06 and possibly 2006/07 will also have been committed under the same processes.

Indeed, some of the longer term project commitments up to 2012/13 showing in WWU's current plans will have carried forward from the NGG era. WWU has been through a transitional phase of managing legacy commitments whilst making a start on implementing its own business plans.

In some areas, WWU has moved quickly to make policy changes in its investment plans. Unless these are underpinned by calculated and auditable logic, it could lead to a disconnect between the investment itself and the trackable benefits accruing from that investment. This could potentially disadvantage WWU in the determination of its regulatory allowances and the ROI it is permitted to earn.

For example, WWU's longer term plan for LTS investment includes an aggressive programme of pipeline construction from 2008/09 to achieve their stated policy of becoming independent from NTS for diurnal storage. This new policy does not affect the expenditure plans up 2007/08 and will be revisited under the main review and after the proposals for the new NTS offtake arrangements are known and a methodology exists for understanding the economics of buying NTS storage versus building LTS linepack.

10.2 CRITERIA USED FOR INVESTMENT DECISIONS

WWU is changing the processes for making these decisions from those 'inherited' from NGG. This is most apparent in the area of their I.T. investment programme. However, its impact on other parts of the business is not yet clear.

For LTS investment decisions the processes and the criteria are much the same as under NGG where there are two primary sources of data. Firstly the network planning models (Falcon for >7 bar) will identify capacity shortfalls in the network and will validate potential solutions. However, the model will only be as good as the data fed into it. The Network Design and Planning Report for WWU identified some weaknesses in this respect (see Appendix 1)

There is no stated intention by WWU to move policy away from the current criteria as these are of course a licence obligation; the issue is how efficiently their procedures deliver that policy.

The second criterion for investment decisions derives from asset condition and the balancing of capital or replacement expenditure against ongoing increasing Opex (and increased risk of failure). WWU gave a comprehensive response to this in their submission.

10.2.1 PROJECT APPROVAL PROCESSES

There is no evidence that WWU is moving away from the legacy process on which its current investment will have been authorised.

10.2.2 CONTROLLING COSTS

Some weaknesses were identified in the collection and sharing of management information relating to expenditure control in the field. These are being addressed.

10.2.3 MANAGEMENT OF INVESTMENT TRADE-OFFS

WWU gave a comprehensive response to managing lifetime costs for operation and maintenance:

"Investment in plant and equipment related to gas transportation is based on two criteria – condition and gas transportation capacity. All relevant plant is condition monitored at relevant intervals and all faults identified are classified and repaired if necessary. When faults are identified on above ground installations requiring repairs, a full installation review is instigated. This review can also be instigated should network modelling systems highlight a potential capacity constraint.

The installation review assesses the gas transportation capacity of all components on the site via a design study, normally carried out by specialist service providers. Also assessed is each component's condition via the condition monitoring reports, maintenance history and operational costs including call-out information. Investment decisions take account of each of these parameters, the prime parameter being gas transportation capacity."

This gives confidence that looking at trade offs in general terms is embedded in their processes.

However, in one respect there is an indication that they may be prepared to deviate from this where there is a compelling reason. This relates to their decision to implement a major pipeline storage programme from 2008/09 forwards to provide additional storage which may not be available from the NTS. At this stage the new NTS offtake rules are unknown and therefore the cost and availability of NTS storage are also unknown. These would need to be known to make an accurate assessment of the economics of buying NTS storage versus building LTS linepack.

This will be revisited in the Main Review.

10.2.4 ENVIRONMENTAL AND SAFETY OBLIGATIONS

WWU has given a comprehensive response to the safety and environmental questions in the BPQ. They have a comprehensive suite of safety and environmental standards and there is no indication that these are any less than those previously implemented under the NG regime. They have not indicated an intention to change any policies. For example, in LTS terms, environmental issues feature heavily in cross country pipeline work; indeed it would not be possible to obtain the necessary consents without a very comprehensive review (Environmental Impact Assessment) well ahead of the works. Without these processes in place, projects can be delayed or disrupted, leading to inefficient expenditure. There is no indication that WWU intends to lessen this obligation. The same commitment applies to low pressure gas holder sites and the containment and treatment of contaminated water and land.

APPENDIX 1 NETWORK PLANNING AND DESIGN

A1.1 TASK DESCRIPTION / PROCESS

In the one year price control review, Ofgem called for information from the GDNs on the different elements which comprise the network planning procedure. The information requested included numerical data regarding network analysis and storage simulation as well as qualitative explanations of a number of factors.

The information provided has been studied in order to evaluate the overall network planning process carried out for each GDN. This has principally related to local transmission and storage systems. Diurnal storage requirement and availability as well as transmission capacity evaluations have been carried out since these must be taken together. Additionally load forecasting and demand allocation processes have been examined. The validity of the simulated networks and their appropriateness for use as definitive planning aids have been examined and a view arrived at as to the robustness of the actual networks and plans for their reinforcement to meet future requirements.

For each GDN there is a separate LTS report which looks at the overall spend, the summary data for all the projects and the detailed report(s) on the selected projects, plus generic data from narrative answers.

A1.2 PLANNING PROCESS REVIEW: WALES AND WEST UTILITIES

A1.2.1 SUMMARY OF DATA SUPPLIED

Although replies have been provided for all questions, many of the answers are phrased in general terms rather than specifics and the answers are sometimes minimal rather than expansive.

A1.2.2 SUMMARY OF FINDINGS

Having examined the data provided by the Wales and West Utilities GDN, and taking into account the limitations expressed in the previous section about the depth of coverage, we are unable to confirm that there is evidence that planning work for development of the Wales and West Utilities GDN is carried out in a wholly satisfactory manner. Conversely there is no specific evidence that this is not the case.

A1.2.3 PROCESS REVIEW

i) Additional narrative questions relating to LTS and Storage Capacity

Diagrams in JPEG format were provided giving details of the Local Transmission System (LTS). These appeared to be comprehensive and current.

ii) System flow study report.

Information relating to forecast system flows for the 1 in 20 condition and actual system peak days for each year from 2002/03 to 2005/06 were provided. These gave the minimum information required to allow identification of entry and exit flows and pressures at key points on the three networks (LDZs) comprising WWU. The information provided was logical.

iii) LTS network capacity report at 1 in 20 peak day demand for each year.

A brief comment and limited information in tabular form was provided on network capacity and a validation procedure was referred to but no further information was provided. We are therefore unable to comment on the accuracy of the models or any of the conclusions reached by the GDN.

iv) Provide a summary report highlighting any problem areas for networks other than the LTS

Limited general information was provided but no specific information on network problem areas was provided. The global statements made provide no clues as to the planning process used or the reasoning being used.

v) Describe how load forecasts are derived and what level of load disaggregation is used.

A brief overview of the process used was given.

vi) Identify any significant changes, if any, in demand and supply forecasts, or forecasting methods, since the last published ten-year statement.

The response contains a statement to the effect that no changes in forecasts or the methodology had taken place. This is satisfactory.

vii) Describe how the total GDN peak day forecast and the LP network pk6 demands are reconciled with each other.

This was answered satisfactorily.

viii) Is the demand forecasting methodology likely to change in the forecast period? If so please describe the changes.

No changes to the methodology have been identified. This is satisfactory.

ix) Describe the trends in the GDN's demand forecasting performance over the reporting period.

An adequate description of demand forecasting trends was provided and the reasoning is sound although further detail would have allowed greater insight.

x) Explain the basis for estimating future large customer connections and the contributions receivable.

A brief description of the process involved in allowing for load growth from new large consumers was provided. No reference to determining the contributions required was made.

xi) Explain how diurnal storage requirements are determined.

An adequate description of the process was provided to allow assessment of the GDN's understanding of the process. We found the process to be satisfactory.

xii) Describe any network analysis programmes used and the network validation process

A description of the programmes and processes utilised was provided along with reasons for planned changes in the software to be used for future analysis of below 7 bar systems. The information provided gave a satisfactory explanation of the process.

The GDN follows the same procedures as for Transco which gives some confidence that networks should be valid. However, no documentary evidence of model validation other than a basic comparison between recorded and forecast flows for the LTS was provided. We found that there was reasonable correlation at most points between recorded and predicted data but that there was insufficient evidence to provide total confidence that the GDN was capable of drawing sustainable inferences from these or that the network analysis models which resulted were as representative of reality as possible.

xiii) Provide details of the maximum volume of diurnal storage required and express this as a percentage of the 1 in 20 peak day demand in each year. Give reasons for any trends.

The information and a brief explanation of anticipated future trends were provided. We found the information produced to be satisfactory.

A1.2.4 MISCELLANEOUS COMMENTS

At least one project (Maelor) appears to have been missed as part of the normal planning cycle but was identified late and acted upon. We see that the reporting of this was open and responsible and recognise that appropriate action was taken.

APPENDIX 2 REPORT ON PROCUREMENT & LOGISTICS

A2.1 INTRODUCTION

Procurement can influence the costs of a business significantly. The review of the procurement and logistics operation within WWU was done to ascertain whether or not the strategic approach and process is robust and effective in minimizing costs whilst maintaining security of supply.

A2.2 SOURCING STRATEGY

The sourcing strategy is comprehensive and recognizes the need for Procurement and Logistics to support the business in achieving its goals. It focuses on their key business drivers: service and cost.

The strategy considers risk evaluation, the procurement process itself, monitoring and control, supporting the community and supporting the supply chain. The end users are involved in the process from the start enabling the end result to meet the business needs.

Their approach to continuous improvement and contract management will allow costs to be managed and increases kept to a minimum.

WWU have a good proactive workable strategy that should lead to cost efficiencies across the supply chain.

A2.3 POLICIES AND PROCEDURES

The policies and procedures are very comprehensive and cover all aspects of the Procurement process. The current documents being used are ones originally written by Transco. Unfortunately, these are out of date and refer to the Lattice Group and Transco.

The European thresholds which must be adhered to under the European Utilities Directive are out of date.

If the principles and processes as described in this document are being followed then they will have a robust process, although an updated version would be advisable.

A2.4 STRATEGIC PURCHASES

Currently have contracts in place for PE pipe and fittings that were novated by National Grid. They have demonstrated a comprehensive understanding of the market and the factors that will influence prices.

This market place has limited suppliers and one of which has a large market share in the UK. Security of supply and costs must be considered for future agreements.

[redacted]

All of the strategic purchases identified in this process are currently being purchased through previously novated contracts from NG. These contracts will have had the benefit of being tendered with large volumes (all gas utility requirements); future contracts will need to ensure that mechanisms are in place to minimize cost increases.

A2.5 PROCUREMENT PROCESS

The following areas were questioned to gain an understanding of how robust and effective the processes being used in WWU are and how they support the sourcing strategy.

i) Cost Effectiveness
ii) Total Cost of Acquisition
iii) Security of Supply
iv) Health Safety and Environment
v) Specifications
vi) Cost Reduction
vii) Spend data
viii) Provision of Labour
ix) Stock Levels
x) Warehousing
xi) Emergency Stocks

The responses provided for the above areas are comprehensive. They demonstrate a robust process for awarding and managing contracts which cover all of the areas listed above.

A2.6 MAINS AND SERVICE REPLACEMENT

The contracts in place are those which were novated from NG. The current contracts were established as a result of a major sourcing strategy initiative which changed the approach to contracting with engineering contractors. The main objective was to minimize the costs of purchased products and services whilst improving quality and service.

The emphasis was on stronger more strategically focused relationships with key suppliers and contractors.

WWU took the opportunity to test the market once the contracts were novated from NG in June/July 2003. By using unbundled rates and a separate fixed management fee they were able to make savings. The contractors were given more replacement work using the same fixed management cost rate which enabled WWU to take the connections work in house providing further savings.

The responses provided on the EPC contracts have demonstrated that throughout the life of the agreements changes have been made to address inefficiencies in the contracts and the original strategy. WWU have been proactive in trying to address these issues and have made further changes to try to take out costs once the contracts were novated from NG.

Their future strategy demonstrates their proactive approach to reducing costs and willingness to try alternative strategies to achieve this.

A2.7 MATERIAL COSTS

Material costs have generally risen over the period 2001/02005. Fixed priced contracts have resulted in supplier's margins being squeezed.

Considering market factors that have influenced and will continue to influence the cost of materials WWU expect to see material price increases above inflation levels for the period leading up to 2013.

A2.8 CONNECTIONS

WWU terminated their agreement with Fulcrum at the earliest opportunity and started providing the service in-house from September 2005.

Following discussions, at the meetings held with WWU and their subsequent responses to the supplementary questions they state that the primary concerns of the Network Management Team when making their decision revolved around Fulcrums' ability to achieve standards of service and the consequential loss effect on WWUs' reputation. There were also major concerns regarding the impacts of TUPE.

Potential cost savings and the effect on customer contributions have been provided, but in overall terms they have stated that the cost of connections between 2005/2006 and 2006/2007 has been reduced in the BPQ.

A2.8.1 KEY POINTS MADE BY WWU

WWU have made the following points in a report submitted as part of this review

In 1999 an enforcement order was placed on Transco and connections activities had to be separated out from other activities. In July 2001 all the connection activities within each LDZ were merged into one organisation - Fulcrum Connections. The contract was made up of two key elements; a management fee and works costs billed on a monthly basis.

During 2000 Fulcrum tendered for engineering period contracts, specifically for connections work. These were split into three LDZs: North Wales, South Wales and South West. Particular contracting difficulties were experienced in North Wales due to the low workload volumes and sparsely populated rural area and lack of good road infrastructure.

The split of connections and replacements activities also made the tenders unattractive to potential contractors. As a result of this, a number of contractors withdrew from the North Wales contract. Performance and safety issues were experienced in the South West which led to a number of changes in the EPC.

A2.8.2 CONSTRAINTS THAT IMPACT ON THE COST OF CONNECTIONS

Overheads are affected and cannot be managed as efficiently as other parts of the business due to certain constraints:

i) Separation of the connections activities - meaning that no other work can be carried out at the same time therefore not allowing efficiencies in labour, travel etc.

ii) Penalties associated with failures to perform mean high costs of compliance to meet performance targets and complex business systems to monitor and track this performance.

iii) Rules on supplier competition - numerous quotations must be provided

iv) Complex quotations due to safety reasons, e.g. temporary disconnection of gas supply pipes, to facilitate building works, which require complex tracking processes

A2.8.3 FUTURE STRATEGIES

WWU have taken the connections activity in-house.

Future strategies for EPC contracts are being developed and the combination of connections and replacement activities will enable benefits to be realized as they will allow for reduced contract management and the potential for site work activities.

A2.8.4 EPC RATE INCREASES

WWU provide three main reasons for the increases in rates.

i) Five different changes of EPC contractors due to performance and safety issues.

ii) Increases in replacement workload in 2003, which forced up the market rate for experienced gas workers and demand in the UK market was difficult to meet from the labour available.

iii) The Enforcement Order requiring activities to be separate rather than in a bundled contract.

A2.9 LTS

LTS procurement has been carried out to date using the established Transco/NG procedures. From the investigations made there are no issues with the way in which the procurement has been completed to achieve cost effective results. However, subsequent contract management has not been so successful and has led to contractual claims.

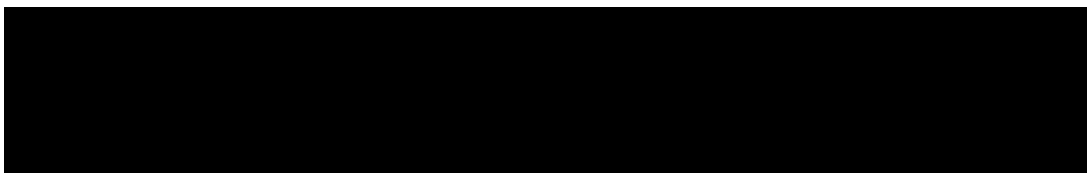
As long as there are multiple suppliers of materials and specialized labour contracts and time is allowed in the project planning processes to procure these without duress, this will achieve true market tested prices.

Along with other GDNs, WWU will need to consider how their future position as a smaller buyer in what is already a specialist materials market, will affect security of supply of such materials and services and the prices to be paid. This will be revisited in the main price control review.

A2.10 SUMMARY

WWU have demonstrated that they have an established procurement department that is working with the business to reduce costs and improve service levels.

They are still using contracts that were novated from National Grid and therefore have not yet used the process and procedures that they have in place to award any new contracts. However, their sourcing strategy and procedures are robust and should if followed, produce cost effective results.



APPENDIX 3 FULCRUM CONNECTIONS

A3.1 INTRODUCTION

The purpose of this appendix is to provide information regarding GDN connections business processes and Fulcrum Connections (FC) relevant to expenditure on connections activities.

The Service Provider Contract (SPC) forms the basis for the contractual relationship between the Networks and FC. NGG managed the contractual interface on behalf of all networks, including those sold in 2005, until the new owners took these activities back in-house. WWU transferred their connections activities back in-house on 8 September 2005. As appropriate, information obtained from NGG or FC and included in this appendix has been used to consider and analyse connections expenditure for all GDNs.

A3.2 BACKGROUND TO THE ESTABLISHMENT OF FC AS A SEPARATED BUSINESS

The Regulator (Ofgas/Ofgem) instigated an investigation into Transco performance on connections activities in the late 1990s. This resulted in the issue of the Enforcement Order in 1999, which was intended to improve Transco's connections performance and encourage competition in the connections market.

Ofgas found Transco to be in breach of section 9 (2) (a) of the Gas Act due to failing to avoid undue discrimination towards an independent connection provider (ICP) by over quoting for a quotation it offered that company whilst not over quoting other companies for the same connection. Also, Ofgas found Transco to be in breach of standard condition 11(1) of its licence for failing to conduct its transportation business in a manner best calculated to secure that neither Transco nor any person related to it, nor any shipper, obtains a commercial advantage.

To prevent the breaches from re-occurring Ofgas imposed an enforcement order against Transco under section 28 of the Gas Act. The Order obliged Transco to amongst other things:

- obtain ISO 9001 certification for its connections operations;
- introduce a compensation arrangements for parties receiving late or incorrect quotations;
- introduce arrangements for the audit of its performance; and
- publish a connection charging methodology.

Transco were required to implement comprehensive management systems and a compensation payments scheme for failure to meet Standards of Service. The management systems and processes were required to meet the requirements for ISO 9001 accreditation supported by quarterly audits to monitor compliance. Audit reports were to be shared with the Regulator.

The establishment of a separate business organisation was encouraged and development of Transco's proposals was shared with Ofgas. Separation was considered necessary in order to demonstrate that connections activities were not cross subsidised by transportation income and were not given unfair advantage by being part of the monopoly GT activity. It is understood that FC 'start up' total costs were incurred prior to July 2001 and no costs have carried over into the current PCR period.

The Gas Act Enforcement Order was revoked in 2005 and obligations with respect to connections were incorporated within a standard special licence condition on all Gas Distribution Network licensees.

We conclude that the creation of FC as a separate business was an outcome of the issue of the Enforcement Order and that this was discussed and shared with the Regulator. It is understood that Transco did not provide a cost analysis to quantify the effects of separation but, nonetheless, it seems reasonable to presume that both parties were aware, and accepted, that overheads on connections activities would increase as a consequence.

A3.3 SPC PERFORMANCE MANAGEMENT

A3.3.1 PERFORMANCE REVIEW

Under the terms of the SPC, FC is required to comply with all NGG policies and procedures.

Bi-monthly performance management interface meetings are held between NGG and FC. These meetings comprise the following:

i) Operational Performance Meeting

ii) Financial Interface Meeting

iii) Credit and Risk Forum

iv) Engineering Consistency Forum

A3.3.2 AUDIT

FC has implemented and maintains an Integrated Management System (IMS) to ensure effective management of risk, processes and resources. The audit framework is specified in the IMS and covers a comprehensive range of business processes and systems. Generally, audit reports are appropriately shared with NGG particularly where the actions identified impact on the GDNs.

The 1999 Enforcement Order specified the requirement for an Audits regime which was carried by external auditors appointed by NGG at quarterly intervals until April 2005. Audit findings were briefed to NGG and FC, and action plans were produced. Final Reports were shared with Ofgem. External audits ceased with the cancellation of the Enforcement Order and the Fulcrum Data Integrity Manual now incorporates quotation accuracy.

The SPC requires FC to maintain compliance with appropriate and recognised standards, in particular ISO 9001 which is subject to compliance audit by Lloyds Register.

A3.3.3 PAYMENTS PROCESS

FC invoices to the GDNs include:

i) Management Fee

ii) Work execution costs – schedule of SPC rates claimed per job completed – validated by Networks.

iii) Employer Ordered Works (EOW)

EOW are essential works additional to the customer quotation scope of work and are subject to authorisation by GDNs before work is undertaken and payment is made. Associated costs are controlled by NGG via the Connections Invoices File Validation System (CIFVS) which was introduced in 2004. An equivalent manual system was used prior to that date.

A3.3.4 EXPENDITURE CONTROL AND MONITORING BY NGG

NGG indicated that control over FC expenditure is achieved as follows:

- Compliance
  - Compliance with relevant NGG policies and procedures leads to economic and efficient connections designs and their construction.
  - NGG Framework Responsible Businesses - sound & efficient financial control is a key underpinning principle
  - Fulcrum Integrated Management System (IMS)
- SPC Management
  - Ensures that correct drivers exist within FC to manage and control expenditure
  - Ensures that only the costs that are reasonably incurred in discharging the obligations under the SPC are passed on to NGGD
- Financial Control
  - Invoice approval
  - Approval process for EOW
  - Expenditure approval levels

Connections expenditure and income is monitored at Distribution Review Committee (DRC) level within NGG. The management information utilised for this purpose essentially comprises high level Capex, Repex and Opex information to compare actual cost with budget and forecast. In terms of connections activities, the expenditure information is disaggregated to some degree, particularly for services. We have found no evidence of information to monitor activity expenditure efficiency and performance improvement at DRC or any other level within NGG, e.g. activity unit costs. This observation is further supported by the inaccuracy of NGG's initial submissions on Capex activity expenditure and workload information as requested in the BPQ.

Connections related projects are managed in accordance with NGG policies and procedures. NGG's Distribution Project Sanctioning Committee is required to approve all connections related projects, and/or authority to quote the customer, above £250k. All other projects are approved under delegated authority.

A3.3.5 EXPENDITURE CONTROL AND MONITORING BY FC

Expenditure control within FC is at the level of each connection and is based on direct reference to work activities undertaken as specified in the job pack and work instructions relating to the original quotation design, EOW and any subsequent customer variations. Inconsistencies are investigated to determine the cause, initiate adjustments to payments and identify appropriate actions to feed back into business processes.

FC target and monitor engineering period contract (EPC) productivity levels at GDN and individual contractor level in terms of the average number of jobs completed per day by each team. The information is cascaded down to Operations Manager level in the organisation and is discussed with contractors at monthly review meetings. The definition of a job covers all activities and ranges from one-off domestic services to mains projects. The effectiveness of the productivity measure is, therefore, sensitive to the workload mix which FC judge to be reasonably stable and comparable across networks, but no evidence to confirm this view has been provided. [redacted].

The productivity management process outlined supports achievement of improved performance through effective deployment and management of resources but has limitations without information to confirm the effects on expenditure. We have found no evidence of information to monitor activity expenditure efficiency at any level within FC, e.g. activity unit costs.

We conclude that the information systems employed by NGG and FC do not adequately monitor and manage the efficiency of connections expenditure and performance improvement. It is difficult to assess the degree of efficiency benefit from improved MI systems but, nonetheless, it is considered reasonable to set expectations at an achievable level. **Therefore it is recommended that a 3% adjustment be applied to costs and this adjustment has been incorporated in the detailed analyses.**

A3.4 MANAGEMENT FEE

The Management Fee (MF) is determined in accordance with the terms specified in the SPC and is subject to challenge and review by NGG. Approximately 60% of the MF reflects costs that are directly attributable to the GDNs. Other charges are apportioned to GDNs using drivers such as manpower, quotation volumes and workload. The MF includes a profit element and is substantially recovered via uplifts applied to customer quotations.

The terms of the 2004 SPC Performance Measurement Framework provide an incentive mechanism by adjustment of the MF taking into account performance against a range of KPIs, substantially based on Standards of Service, and 20% of direct personnel costs are at risk in this process. The current Performance Management Framework was introduced in January 2004. Prior to that date performance was assessed against an Efficiency Incentive Matrix that resulted in adjustments to FC Management Costs.

[redacted]:

It is presumed that the increase in the level of adjustment from 2003/04 reflects failure to achieve satisfactory Standards of Service performance.

The MF is allocated to activities by the GDNs pro rata to expenditure.

We conclude that the MF charges in accordance with the SPC have been effectively managed by NGG on behalf of the GDNs.

A3.5 PROFIT

Fulcrum profit uplifts are specified on the SPC and have been established with the intent to provide a reasonable overall level of profit at predicted levels of activity. The following table demonstrates the build-up based on costs for a typical GDN.

A3.6 CONNECTIONS NET CAPEX

Connections Net Capex comprises the effects of several factors that influence the recovery of gross expenditure via customer contributions. The effect of allowances is the primary influence, particularly the Domestic Load Connection Allowance (DLCA), but other factors also result in costs that are not recovered. The impact of these factors on Net Capex is considered in the following sub-sections.

A3.6.1 DOMESTIC LOAD CONNECTION ALLOWANCE

The Domestic Load Connection Allowance (DLCA) is subject to periodic review in conjunction with review of standard charges. The allowance is assessed as follows:

i) Relevant contractor cost items are identified from the schedule of rates. (i.e. specific rate items from for connection and <= 10m pipelay in public highway).

ii) Usage probability factors are derived from historical workload analysis.

iii) Usage factors are applied to cost items to derive the weighted average contractor cost.

iv) Overheads are applied.

v) Materials items are included with the appropriate materials uplift applied.

vi) Values are aggregated to GDN level from contractor level.

The DLCA was originally established as a national cost but was subsequently built up for each GDN as indicated above. Mains records are examined in the quotation process to determine eligibility and NGG analysis of quotations has indicated that 97% of new services to existing housing meet the criteria.

The value (£ nominal) of the DLCA by formula year has been confirmed by NGG as follows:

Note 1 - Allowance costs comprise contractor costs, materials and uplifts on a basis consistent with the standard charges. The formula year values are a straight average of the values for the two relevant price periods for each formula year. No assumption has been made re price changes in 2006/07

Note 2 - Changes to contractor pricing agreed when rates are reviewed may be focused on certain sub-sets of rates within the relevant contract schedules. Therefore, year-on-year changes to contract pricing overall will not match the changes for a particular sub-set such as that relating to domestic one-off connections.

A3.6.2 NON DOMESTIC CONNECTIONS ALLOWANCES

During the period up to October 2005, allowances were applied to non-domestic connections. However, the effect of these allowances carries over from that date, to some degree, due to the time lag between quotation and execution of the work.

NGG analysis of quotations has indicated the application of the allowances as follows:

- The proportion of non-domestic quotations attracting an allowance is 65%.
- The proportion of non-domestic quotations attracting the Standard Allowance (@ £89) is 57%.
- The proportion of non-domestic quotations attracting a Bespoke Allowance (average value [redacted]) is 8%

A3.6.3 SPECIFIC REINFORCEMENT

The cost of network reinforcement operations necessitated by a specific connection is subject to the Economic Test (ET) based on the demand specified by the customer.

It is understood that virtually all specific reinforcement workload/projects satisfy the Economic Test and do not result in a contribution.

Specific reinforcement workload and expenditure that has not been separately allocated to connections has been included in Mains Reinforcement and other <7 bar build by the GDNs. In these cases, assessment of the effect of specific reinforcement costs on connections Net Capex is not possible.

A3.6.4 EMPLOYER ORDERED WORKS

Employer ordered works (EOW) are essential works additional to the customer quotation scope of work (e.g. mains upsizing, costs resulting from inaccurate records) and are subject to authorisation by GDNs. Analysis by NGG indicates that EOW are associated with all categories of connections, i.e. new housing, existing housing and non-domestic.

EOW costs are not recovered from customers and therefore pass into Net Capex.

A3.6.5 TIME LAG

A significant proportion of Net Capex results from work in progress, i.e. work that was quoted before a price increase but executed after the price change. Connection charges are based on current costs at the time of quotation and, therefore, when costs are increasing under recovery occurs.

Actual direct costs are higher than quoted costs due to the time lag between quotation and construction. FC charges to the GDNs are based on prices current at the time construction work is completed and the cost associated with time lag passes through into activity net expenditure. NGG has indicated that a 1% increase in direct costs, e.g as a result of an EPC rates review, results in a net expenditure increase of £0.25m.

There is no evidence of routine management information to monitor the costs of time lag and initiate timely action to reduce. NGG has provided a detailed assessment of the retained networks costs associated with time lag for the period 2002/03 to 2005/06. The total costs are as follows:

i) [redacted].

ii) [redacted].

iii) [redacted].

iv) [redacted].

The costs in the earlier years reflect the higher workload volumes.

During 2006/07 NGG intend to base quotations on anticipated costs and introduce changes to siteworks terms in order to minimise Net Capex due to time lag. Prior to 2006/07 no action has been taken in the quotation processes to mitigate the cost implications of time lag, although it is presumed that the issue has been apparent as the costs are significant.

A3.6.6 OVERHEADS ASSOCIATED WITH UNACCEPTED QUOTATIONS

NGG has indicated that the domestic quotations acceptance rate has reduced by 5% for the period Jan 04 to Mar 06 and requests are down by broadly the same proportion. Over the same period the I & C and new housing acceptance rate is down by 20% and requests for quotations are increasing. In 2006/07 NGG intend to introduce payment in advance charges for designs and quotations for competitive activities only, i.e. new housing and I & C activities, for the retained networks. This should discourage requests that are for comparison purposes only and will reduce Net Capex in future.

The charging principle is that the overheads associated with providing connections should be recovered from those customers accepting quotations. However, the consequence of consistently high quotation levels and a reducing acceptance rate is that a proportion of overhead is not recovered through charges against the decreasing workload. This cost passes through into Net Capex.

FC has indicated that 29% of the MF relates to the design and quote activity, and the cost of unaccepted quotations equates to 15% of the MF. NGG has provided an assessment of the overheads attributable to unaccepted quotations for the four retained networks and the years 2002/03 to 2005/06, as follows:

i) [redacted].

ii) [redacted].

iii) [redacted].

iv) [redacted].

A proportion of this sum is not recovered via overheads applied to charges.

A3.6.7 REMAINING NET CAPEX (UNDER RECOVERY)

The foregoing components of Net Capex do not account for the total and NGG has indicated that the balance is due to inherent under recovery of costs. NGG suggests that this under recovery results from a cautious/conservative approach to charging which has the effect of ensuring that customers are not overcharged. However, NGG does not indicate that this is a matter of policy and intent.

There is no evidence of routine management information to monitor and control the costs of under recovery. NGG has assessed the total retained networks cost of under recovery at [redacted] for the period 2002/03 to 2005/06. No action has been taken to mitigate this cost in the quotation process. It is acknowledged that the degree of any such action should take into account and offset the risk of over charging.

A3.6.8 SUMMARY

The net cost of connections activities incorporates the effects of the factors identified. NGG has provided a detailed analysis of the retained networks connections Net Capex for the period 2002/03 to 2005/06. These figures provided by NGG are combined totals for mains and services which give a reasonable indication of the proportional effect of the factors.

Having reviewed the information provided by NGG and taking account of representations made by GDNs, we have adjusted the proportions for time lag, unaccepted quotations and under recovery. Also, we have taken account of evidence presented which suggests that the balance between mains and services should be amended to reflect the impact of allowances more accurately. In adjusting the values we have ensured that, taking account of relative Net Capex for mains and services, the resulting effect is consistent with the original information provided by NGG.

	Combined %	Adjusted combined %	Estimated mains %	Estimated services %
Allowances	59.6%	59.6%	37.3%	74.0%
Time Lag	16.3%	15.0%	15.0%	15.0%
EOW	6.8%	6.8%	12.7%	3.0%
Unaccepted quotations	0.5%	7.0%	7.0%	7.0%
Underrecovery	16.8%	11.6%	28.0%	1.0%

Table 3A - 1

A3.6.9 CONCLUSIONS

i) Time lag - We conclude that action should have been taken with effect from 2002/03 to mitigate the cost consequences of time lag and the resultant expenditure is therefore inefficient. A 15% adjustment to mains and services Net Capex has been applied in the analysis process.

ii) Under recovery - We conclude that action should have been taken with effect from 2002/03 to mitigate the consequences of under recovery of costs in the customer quotation process and the resultant expenditure is therefore inefficient. A 28.0% adjustment to mains Net Capex and a 1.0% adjustment to services Net Capex has been applied in the analysis process.

A3.7 PROCUREMENT – FC EPC ARRANGEMENTS

Separation of connections activities had a direct impact on FC's competitively tendered EPC arrangements and their ability to obtain the best market rates comparable to the rates for this work type prior to separation. Connections work is geographically spread, low volume and is driven by Standards of Service performance. These factors combine to inhibit operational flexibility in terms of forward planning and work scheduling, and hence reduce efficiency. It is to be expected that a premium will have to be paid in order to attract contractors to this work, particularly in periods when contractors are in demand to meet generally high workloads in other gas and utilities activities which would be more profitable.

FC's EPC rates are routinely reviewed yearly in July to take into account general issues, e.g. industry price rises as indicated by Baxter indices and other impacts on the cost of connections activities. Routine indexation is not incorporated into contract terms and conditions but is used as a benchmark in these review negotiations. Additional reviews may be triggered by specific changes in circumstances not foreseen at the routine review.

The cost effectiveness of EPC operations is highly sensitive to work mix, work volume and the demand for competent labour in the utilities contracting market. Any significant and ongoing change in these respects affects profitability and has generated requests for a review of rates to take account of the circumstances and to ensure that continuity of EPC services is not disrupted. The decision by the new owners of the sold networks to take connections activities back 'in house' will address these issues to some degree and should alleviate the upward pressure on costs in due course. In the interim however, the transition is highly disruptive to FC's EPC arrangements as evidenced by rate reviews in July 2005, ranging from [redacted] for the networks retained by NGG, triggered by the changed circumstances.

These consequences of the separation of connections activities on the associated EPC rates were not foreseen when the allowances were set and contribute to the increases reflected in unit costs and the overall variances.

We conclude that separation of connections activities and the establishment of 'stand alone' EPC arrangements has had the effect of increasing costs to a degree not anticipated when the allowances were set.

A3.8 FC CLIENT BASE

In 2002 FC established a subsidiary business, Fulcrum Connections Direct (FCD), on a trial basis to undertake connections work for clients other than NGG, substantially independent Gas Transporters. FCD business activities were separated from and not cross-subsidised from NGG connections activities. The trial was eventually abandoned. Costs incurred by FCD in 2002/03 and 2003/04 were £63k and £83k respectively.

FC's only client to date has been NGG with the exception that FC provided services to the new owners of the sold networks between the sale in 2005 and the transfer of these services in-house by the respective network owners.

A3.9 NGG COSTS

NGG evaluates the cost of NGG employees involved in managing the connections process at less than £0.5m p.a. This cost is not capitalised and is not recovered via connections charges.

A3.10 FC RE-STRUCTURING COSTS

NGG has confirmed that all costs associated with restructuring within FC are charged against FC profit and are not passed to NGG in any way. In the year 2002/03, exceptional costs of £11.7m were incurred by FC wholly related to a reorganisation undertaken by the company. These costs were charged against FC profit in that year.

APPENDIX 4 SYSTEM OPERATIONS EXPENDITURE

A4.1 INTRODUCTION

The purpose of this appendix is to provide information regarding NGG Capex expenditure on System Operation between January 2001 and March 2005. During this period all eight GDNs were in the ownership of what was then Transco. During this period the majority of System Operation Capex expenditure within Transco was associated with the Ulysses Project

This appendix also considers the main elements of the forecast Capex April 2005 to March 2013. During this period the main elements are the replacement of the GTMS and the exit of the SOMSA contract for the sold networks.

A4.2 CONTEXT

This appendix has been written specifically for the purpose of being included as a standard appendix supporting each GDN report. It therefore considers the expenditure across all networks on the Ulysses, GTMS replacement & SOMSA Exit projects. If there are specific points to be made for individual GDNs these points are made in the main body of that Network report in section 7.

As expenditure of the Ulysses project covered both Transmission and Distribution we have liaised with TPA Solutions, the consultants acting on the Transmission Price Control Review. Our conclusions present the views of PB Power and are still subject to review by Ofgem.

A4.3 CAPITALISATION POLICY

All of the GDNs are working on the basis that the full project costs will normally be capitalised into the replacement asset. For System Operation these assets are telemetry outstations, communications and control system. Specific comments which apply to these general capitalisation principles are addressed in the main body of the Network reports.

A4.4 SYSTEM OPERATION CAPEX

The table below gives the total reported expenditure on System Operation Capex for all 8 GDNs.

System Operation (All GDNs) All figures £m 2005/06 Prices	2002/03	2003/04	2004/05	3 year Total	forecast values 2005/06	2006/07	5 year Total
Total Actual	5.3	9.8	8.5	23.6	1.2	6.0	30.8
Allowance	5.7	1.0	2.2	8.9	6.4	5.7	21.0
Variance	-0.4	8.8	6.2	14.7	-5.2	0.3	9.8

Table A4 - 1

When reviewing the total reported expenditure on System Operation Capex it can be seen that over the five year period there has been an overspend of £9.8m (43%). This must be viewed in the context that a distribution control system has not been provided by the Ulysses project which was intended under the original project when the allowances were set. The issues impacting this overspend are considered below in relation to the Ulysses project.

A4.5 ULYSSES PROJECT

The Ulysses project was approved in 1999 as a turnkey project to undertake the complete replacement of Transco's System Operation's systems support suite. This included:

vi) Telemetry Outstations

vii) Communications Network (for telemetry purposes)

viii) Control Systems (Both Transmission & Distribution)

ix) Decision Support Tools

x) Management Information

The total approved sum for the project was £70.4m, all Capex expenditure.

At the time of the last price review the Ulysses project was experiencing contractual difficulties between Transco and the main supplier [redacted] and it was clear in 2001 that the project would not deliver all of the components as originally specified in the approval.

A4.5.1 RE-SANCTION JULY 2001

In July 2001, following a review of the project and the termination of the original supply contract a re-sanction was approved by the Transco Executive Committee.

The key features of this re-sanction were that the project would be spilt into two main components, the telemetry outstations/ associated communications and the control systems.

The telemetry/communications elements were awarded via a new contract to [redacted], whilst the control systems would be delivered by a combination of in-house project management of software development provided by [redacted](offshore development contract).

At this stage the scope of the project remained un-changed although the focus of the control system elements of the project was on the delivery of a replacement control system for Transmission.

The re-sanction approved additional costs of £10m. These revised costs are shown in the table below.

Ulysses Capex Forecast (July 2001) All Figures £m (nominal prices)	2000	2001	2002	2003	Total
[redacted] Telemetry	9.4	10.9	8.8	0.0	29.0
Transco Telemetry	0.1	0.8	4.1	0.0	4.9
[redacted] non-Telemetry	14.4	1.2	0.0	0.0	15.6
[redacted] rebate	0.0	-3.7	-5.3	0.0	-9.0
Control Systems	0.1	1.3	15.3	23.2	40.0
Totals	23.9	10.4	22.8	23.2	80.4

Table A4 - 2

The re-sanction also included a sum of £8.4m for capitalised overheads, which is additional to the sums shown in the table above.

We have not been able to investigate the full details of contractual dispute between Transco and [redacted]. However, it must be assumed that a level of inefficiency of expenditure was associated with the need to cancel the first contract and re-organise the structure/contracts of the project.

A4.5.2 TELEMETRY PROJECT RE-SANCTION MARCH 2003

By March 2003, due to delays from [redacted], poor project management and unforeseeable site specific technical issues, the costs for the telemetry elements of Ulysses had increased by £12.4m (excluding overheads) from £39.0m to £51.4m.

It must therefore be assumed that an element of these cost increases should be attributable to inefficient project management. In the re-sanction £5.9m has been attributed to "cost increases".

A4.5.3 CONTROL SYSTEM RE-SANCTION MAY 2003

In May 2003 it was necessary to obtain approval for a further sum of money in order to complete the control system element of Ulysses. The Re-sanction paper requests an additional £20.9m taking the total to £70.4m.

At this time the plan would still seem to deliver the full scope of the original system control elements which included a GTMS replacement. However, £3.1m cost of work on the Simulator was written off, and this element of the project was de-scoped.

A4.5.4 CONTROL SYSTEM RE-SANCTION JANUARY 2005

This re-sanction reduces the scope of the delivery of the project to only the transmission control system and a reduced scope of the SC95. Although the complication of the network sales process is quoted as a reason for removing the Area GTMS from scope, it is clear the fundamental design of certain elements of the proposed system would not scale without risk to the requirements of a distribution control system. The effect of the re-sanction approval is to reduce the total approved sum to £69.0m (which included an element of £22.7m associated with the abortive work to replace the distribution control system) thus leaving a net Transmission Control System cost of £43.9m(Capex), £1.0m start-up provision for GTMS replacement and £1.4m Opex costs.

A4.5.5 TOTAL PROJECT OUTTURN COSTS

We have had difficulty obtaining a definitive statement from NGG of the total project costs phased between January 2000 and March 2006. Together with TPA solutions we have used the costs outlined in the tables below as the basis for our review.

Ulysses Project Costs All Figures £m 2005/06 Prices		2000	2001	2002 Qtr1	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Telemetry	Distribution	9.2	10.1	2.6	14.1	8.8	7.2	0.6	0.0	52.5
	Transmission	2.3	3.6	0.7	1.1	1.9	2.9	0.8	0.0	13.3
	Project Total	***11.5***	***13.7***	***3.2***	***15.1***	***10.7***	***10.1***	***1.4***	***0.0***	***65.8***
Control System	Distribution	14.8	3.8	1.9	4.1	0.3	0.2	0.1	0.0	25.1
	Transmission	*3.1*	*3.3*	*1.6*	*13.9*	*8.3*	*11.1*	*9.3*	*3.7*	*54.3*
	Project Total	***17.9***	***7.1***	***3.5***	***18.0***	***8.6***	***11.3***	***9.4***	***3.7***	***79.3***
Project Total		***29.4***	***20.8***	***6.7***	***33.1***	***19.3***	***21.4***	***10.8***	***3.7***	***145.1***

Table A4 - 3

A4.5.6 PROJECT INEFFICIENT COSTS

We have analysed the various project approvals and re-sanctions in order to assess the performance of the project. We conclude that the original Ulysses project was not sufficiently well scoped and understood at the outset. This lack of clarity continued into the [redacted] contract and this led to significant inefficiency in their early work and contributed to the difficulties in the relationship with [redacted]. The delivery of the distribution control system elements were finally removed from scope. The replacement of the telemetry communications infrastructure appears to have been successful.

From the documentation we have reviewed we have formed opinions about elements of inefficient spending which occurred within the project. Our conclusions are tabulated below.

Inefficiency	Commentary	Range £m Nominal Prices
[redacted] Assets & Documentation	As part of the agreement with [redacted] to terminate the original Ulysses contract NGG effectively agreed to purchase from [redacted] a number of hardware items, documentation and licences at a total cost of £6.4m. We have concluded that this purchase did not provide value for money for these items, further we to not believe the have been effectively put to use in delivering the subsequent project.	6.4
[redacted] Contract Closure	NGG state in the re-sanction paper of 2001 that there was a further £100,000 cost to obtaining the contract closure agreement.	0.1
Telemetry Outstation Design, Documentation & Approval	The March 2003 re-sanction paper for the telemetry elements of the project states that due to incomplete and inaccurate site survey data a major exercise was required to gather further information from telemetry sites. We believe this exercise was required very quickly and thus these additional costs were incurred at a further premium to a timely and accurate once off gathering of the appropriate data and designs. The paper states that the total cost for this additional work was £2.7m. We have assessed the inefficiency as a range and used the mid value in our conclusions	0.5 – 2.7
Inefficient Project Management	We believe the chain of re-sanctions (4) associated with this project and associated increasing costs demonstrates poor project management. We believe this is largely due to the complex nature of the project which attempted at the outset to be too wide ranging given the large number of aspirational objectives which were not fully scoped and documented prior to the award of contract.	2.5 – 5.0

Table A4 - 4

We note that the whole of the expenditure (£22.4 nominal) by distribution on the iGMS system must be considered inefficient as the project did not deliver a control system for distribution. We also conclude that a proportion (40%- £1.5m nominal) the inefficient project manage costs together with a proportion (80% - £1.3m nominal) of the inefficient telemetry are associated with distribution activities. Taking all three elements together makes a total of £25.2m (£27.6 at 2005/06 prices).

In the table below we have documented our conclusions for the project using the mid-range value of our figures where appropriate. All figures in this table have been inflated to 2005/06 prices.

Efficient / Inefficient Ulysses Expenditure	£ m 2005/06 Prices
Distribution – Efficient Expenditure	***50.0***
Procurement & Installation of Telemetry Outstations & Communications Systems	50.0
Distribution – Inefficient Expenditure	***27.6***
Terminated work to deliver distribution control system	24.6
Inefficient telemetry design & site preparations, & associated project management	3.0
Total Distribution - Expenditure	***77.6***
Total NTS –Expenditure	***67.5***
Total Project Expenditure	***145.1***

Table A4 - 5

We have no way of accurately apportioning the inefficient expenditure across the years. We have therefore concluded that the most appropriate way is to phase this expenditure in line with project expenditure in each year see table A4-6.

Allocation of Ulysses (Distribution) Inefficient Expenditure £ m 2005/06 Prices	Pre 2001	2001	2002Q1	2002/03	2003/04	2004/05	2005/06	2006/07	Total
Network									
WW				0.9	0.5	0.4	0.0		1.8
No				0.7	0.4	0.3	0.0		1.4
Sc				0.6	0.3	0.3	0.0		1.2
So				1.1	0.5	0.4	0.0		2.1
EoE				1.2	0.6	0.5	0.1		2.3
Lon				0.6	0.3	0.3	0.1		1.3
NW				0.7	0.4	0.3	0.1		1.4
WM				0.5	0.2	0.2	0.0		1.0
UKD	8.5	4.9	1.6						15.0
Total	**8.5**	**4.9**	**1.6**	**6.5**	**3.2**	**2.6**	**0.2**		**27.6**

Table A4 - 6

A4.6 GTMS REPLACEMENT PROJECT

The GTMS replacement project is currently proposed to be a centrally co-ordinated project by NGG on behalf of all GDNs. This proposed project arrangement is covered by a memorandum of understanding between the Network owners and is dependent on the successful tendering of a suitable replacement system acceptable to all parties. Tenders are due back towards the end of June 2006 and these replies together with discussions with the potential suppliers will firm up the nature and cost of the replacement project.

This project is required because the current systems work on obsolete technology with software that was modified to meet the original Transco requirement and has since been modified to meet further requirements. We endorse the view that the system is due for replacement.

The principle currently being adopted given the complex arrangements with the 4 GDN owners is to procure a “like for like” system to match the currently functionality of GTMS using current technology.

Given the previous history of the Ulysses project and other replacement control systems in the former British Gas Corporation/British Gas plc it is clear that such projects can encounter difficulties, particularly when they have to meet the requirements of a number of separate customers.

We believe that the approach of the project to replicating the current functionality will be a good risk management strategy. However, we have concerns that the current collaborative venture whilst potentially minimizing the development costs will certainly increase the project management costs and could increase the delivery risks.

A4.6.1 FORECAST COSTS

The table below shows the total cost forecast for the 8 GDNs for the replacement of the GTMS replacement project. We do not consider the total cost of £16.8m unreasonable for a project of this size. We note that such estimates will be reviewed following the receipt of the tenders currently being prepared by potential contractors.

GTMS Replacement Forecast All Figures £m	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Opex Ongoing Costs	0.0	0.0	1.0	2.0	2.0	2.0	2.0	2.0	**11.0**
Opex One Off Costs	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	**1.6**
Capex Costs	1.2	7.6	7.7	0.3	0.0	0.0	0.0	0.0	**16.8**

Table A4 - 7

A4.7 SOMSA EXIT PROJECT

A4.7.1 FORECAST COSTS

We have not had the opportunity within the timescales of this review to investigate fully the plans for SOMSA exit.

We were concerned that the NGG decision to centralise the distribution control operations in the Midlands may have increased costs and risks when the sold networks exit from the SOMSA agreement. We have therefore requested information from NGG regarding the timing of the decision. Having reviewed the reply, we take issue with some aspects of the information presented. Namely NGG claim that the locations of the previous control rooms were not aligned to the geographic areas associated with the sold networks. We believe this argument is not totally valid as the key skills and knowledge of control room staff could more easily be transferred to cover another geographical area than could new recruits in the market place. On balance, however, we do not believe there is evidence that NGG deliberately took the decision to relocate the control rooms knowing the present likely outcome of the SOMSA exit arrangement. We do believe therefore that NGG took these decisions in good faith and took reasonable steps to attempt to minimise the future costs to the gas consumer.

We are of the opinion that the costs of exiting the managed service agreement with NGG are directly related to the sales process and therefore these costs should be considered unnecessary in relation to the price control review. We have therefore adjusted the forecasts to exclude these SOMSA exit costs.

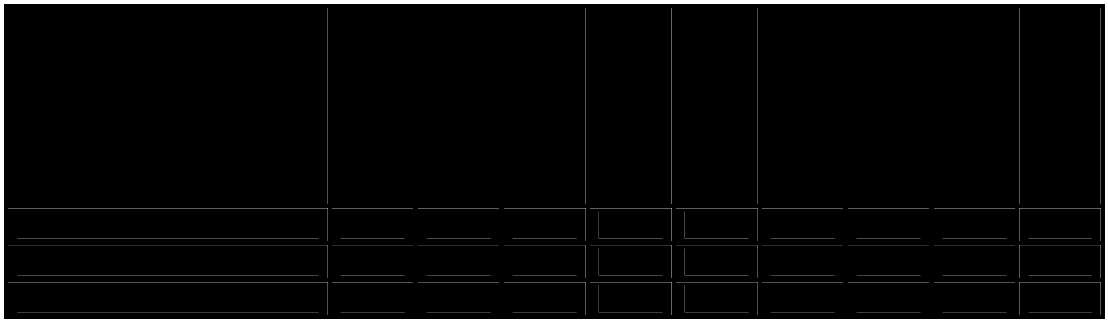


Table A4 - 8

A4.8 RECONCILIATION OF BPQ AND OTHER SUPPLIED FIGURES

We have attempted to reconcile the Capex figures given in the BPQ with the answers given to various supplementary questions. Table A4-9 attempts to show this reconciliation. However as can be seen we have not made a good match in most years.

System Ops All Figures £m Nominal prices	2001	2001Q1	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
BPQ Total	?	?	5.3	9.8	8.5	1.2	6.0	22.3	15.6	5.9	2.4	1.5	3.8
Ulysses Telemetry	8.1	9.1	2.3	12.9	8.3	7.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Ulysses Control System	13.1	3.4	1.7	3.8	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
GTMS Replacement Project	0.0	0.0	0.0	0.0	0.0	1.2	7.6	7.7	0.3	0.0	0.0	0.0	0.0
SOMSA Exit	0.0	0.0	0.0	0.0	0.0	0.0	3.2	13.2	9.2	2.4	0.2	0.2	0.2
Other Systems	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Balance	?	?	-1.3	6.9	0.1	7.2	5.7	-1.3	-6.0	-3.4	-2.1	-1.2	-3.5

Table A4 - 9

APPENDIX 5 IS CAPEX (JAN 2001 – MARCH 2005)

A5.1 INTRODUCTION

The purpose of this appendix is to provide information regarding NGG expenditure on IS between January 2001 and March 2005. During this period all eight GDNs were in the ownership of what was then Transco. During this period the majority of IS expenditure within Transco was associated with the central development of software applications and infrastructure.

A5.2 CONTEXT

This appendix has been written specifically for the purpose of being included as a standard appendix supporting each GDN report. It therefore considers the expenditure across all networks on IS systems. If there are specific points to be made for individual Networks these points are made in the main body of that Network report in section 7

A5.3 CAPITALISATION POLICY

Following the merger with National Grid, Transco changed its capitalisation policy to capitalise software development costs.

"Following the Merger with National Grid in October 2003, NGG changed its capitalisation policy in respect of software development costs to capitalise all major projects of this type.

Prior to harmonisation of accounting policies of the former National Grid and Transco businesses, it was policy to capitalise the cost of hardware and associated operating software but not the cost of internal application software development or any purchased software licences, which were treated as operating expenditure. The exception to this was any instance where a 'turnkey' solution was provided by a third party supplier".

This change makes the trending of IS expenditure is the period Jan 2001 to Mar 2005 difficult. Figures are reported in this appendix as declared in the BPQ. Where comments can be made on the impact of this change of capitalisation such comments will be made on particular projects concerned.

A5.4 IS EXPENDITURE

The table below gives the total expenditure on IS for all 8 GDNs. It has not been possible to obtain from NGG a full breakdown of the expenditure for 2001 and 2002Q1 into projects charged to Distribution. We have therefore used the full project costs to provide an estimate of this project breakdown. The totals sum to the full value for these periods as declared by NGG.

IS Capex All Figures £m	PB Power Estimates 2001	2002 Qtr1	2002/03	2003/04	2004/05 *forecast values*	Total
Systems Projects	3.3	4.5	8.3	22.2	13.9	52.3
Infrastructure Projects	26.8	4.8	8.1	8.8	9.2	57.7
Balancing Item BPQs to NGG Data	0.0	0.0	2.0	-1.1	3.2	4.1
Totals	30.1	9.3	18.4	29.9	26.3	114.1

Table A5 - 1

A5.4.1 SYSTEMS PROJECTS

The table below gives the IS systems projects expenditure for all 8 GDNs. It has not been possible to obtain from NGG a full breakdown of the expenditure for 2001 and 2002Q1 into projects charged to Distribution. We have therefore used the full project costs to provide an estimate of this project breakdown. The totals sum to the full value for these periods as declared by NGG.

The main item of expenditure in this category is the expenditure on the Quarterback Programme (QB). QB is considered in more detail in section A5.6.

However is worth noting at this stage that QB costs have been reported in both the Opex and Capex regulatory accounts. A total £51.3 million of software development costs for QB was classed as Opex in the regulatory accounts but has been reclassified as Capex for the purposes of the RAV roll forwards tables in the BPQ submission. We have concluded that in outturn prices the project in total spent £76.8m (£81.7m at 2005/06 prices), comprising £51.3m Opex and £25.5m Capex (those figures charged to Distribution at outturn prices). In reviewing the project we have taken the total project costs into account. However, as this additional "Capex" has not been included in the non-operational Capex tables in the BPQ it does not form part of PB Power's adjustments to costs.

Within the time available it has not possible to explore fully the expenditure for the Gemini Project or Transformation Programme.

We have noted, however, that GEMINI costs are not intended to be charged to the Distribution control. NGG state that this is due to the original Transco transaction model and adjustments are required to the RAV roll forward. We recommend that this issue is investigated further.

The table below shows the IS expenditure reported by NGG that has been charged to the Capex regulatory accounts

IS Systems Capex All figures £m 2005/06 Prices	PB Power Estimates 2001	2002 Qtr1	2002/03	2003/04	2004/05 *forecast values*	Total
GEMINI	0.0	0.0	0.0	4.9	7.0	11.8
JIS Upgrade	0.0	0.0	0.0	0.0	0.8	0.8
QB (Capex Only)	2.8	4.5	5.9	14.3	0.0	27.5
PMR	0.0	0.0	1.7	0.4	0.0	2.2
DRS Replacement	0.0	0.0	0.0	0.5	0.0	0.5
Total Other less than £500k	0.0	0.0	0.7	0.7	1.1	2.5
MINE	0.6	0.0	0.0	0.0	0.0	0.6
Transformation Programme	0.0	0.0	0.0	1.4	5.0	6.4
Totals	3.3	4.5	8.3	22.2	13.9	52.3

Table A5 - 2

A5.4.2 INFRASTRUCTURE PROJECTS

The table below gives the IS infrastructure projects expenditure for all 8 GDNs. It has not been possible to obtain from NGG a full breakdown of the expenditure for 2001 and 2002Q1 into projects charged to Distribution. We have therefore used the full project costs to provide an estimate of this project breakdown. The totals sum to the full value for these periods as declared by NGG.

We are aware that Ofgem have commissioned a review of National Grid's IT expenditure by Compass. We are of the opinion that this review and its conclusions will provide the best statement of NGG's efficiency for expenditure on infrastructure items. At the time of writing we do not have access to the final report from Compass and therefore have not reached a final position on the efficiency of this area of expenditure.

We do note that during the separation of Transco from the gas supply & servicing businesses in BG plc between 1994 and 1996, Transco put in place new desktop and server installations. The large expenditure to replace this infrastructure during 2001 would appear to reflect a reasonable life for this equipment. We should therefore expect a cycle of replacement costs for this equipment again in the period 2006/08.

IS Infrastructure Capex All figures £m 2005/06 Prices	PB Power Estimates 2001	2002 Qtr1	2002/03	2003/04	2004/05 *forecast values*	Total
Servers	6.9	2.3	2.3	2.4	0.8	14.7
Desktop	10.6	0.7	1.5	1.5	1.5	15.8
Data Centre Storage	3.1	0.0	0.0	0.0	0.0	3.1
Telecoms	1.0	0.0	0.0	0.0	0.0	1.0
Office Equipment	2.3	0.9	0.0	0.0	0.0	3.2
Network	0.0	0.0	2.3	2.4	4.0	8.7
Email Upgrades	1.7	0.0	0.0	0.0	0.0	1.7
SAP	1.2	0.7	0.0	0.0	0.0	1.8
Other	0.0	0.3	2.1	2.4	2.9	7.7
Totals	26.8	4.8	8.1	8.8	9.2	57.7

Table A5 - 3

A5.5 IS PROJECT MANAGEMENT AND CONTROL

A5.5.1 GENERAL SUMMARY

We have formed our views on NGG's project management systems from the following sources.

xi) The BPQ Submission

xii) Supplementary Question Replies

xiii) Presentation to Ofgem/PB Power

xiv) Compass IS Review

In general NGG has in place robust project management controls primarily based on industry standard PRINCE2 methodology. These general project management principles were in place throughout the period being considered. They had a re-launch in 2003 by a new programme called Delivery Excellence (DE). The use of such controls means that in no way can NGG's IS projects be considered 'out of control'. However we are concerned that after reviewing the documentation provided by NGG, there are elements of the control process which are being followed by rote rather than informed use of the methodology techniques: examples of this are given later in this section.

We have found examples, particularly in QB, that issues have caused a change scope/cost for the project. Whilst the formal documentation has been provided for these changes to the appropriate authorising body, there is such a delay to these being processed that a decision to stop or modify the project becomes impossible because expenditure has continued for months before the formal re-sanction has been obtained.

During the presentation by NGG it was explained that formal post investment appraisals (PIA) are no longer normally carried out. Only in exceptional cases would the authorising body request a PIA. It was explained that any Opex savings would be factored into appropriate department's budget forecasts and the accountable manager would be expected to manage within the new forecasts. We consider this practice unsound in that there is no closure of the cause/effect of productivity improvements as part of the regular review process. We are also concerned that the measurement of the performance of a project is tracked against the last

re-sanction, rather than the original approval. Such practices do not impress on the organisation the need to invest in the preparation of the initial business case. Examples we have been given of the Project Exit Reports do not allay our concerns.

The papers provided by NGG are either sanction papers or exit reports and there is nothing in between. It is difficult to say if projects were managed efficiently, however, conclusion can be drawn that NGG do follow a tried and test methodology but that the application of the methodology and principles could be improved. No actual evidence was provided on how they managed success against the original scope, objectives and deliverables and the only evidence on sanction was that they were going back for more money on a regular basis, this suggests that the scoping at the outset was not well founded, due to a continually changing business environment or inefficient project management.

A5.5.2 PROJECT EXIT REPORT (NEXUS SPECIALIST INFRASTRUCTURE)

The Nexus project scope was to move certain core distribution support activities to a new site in Northampton. Included in these activities is a call centre and associated equipment. We were given the exit report for this project as a sample of the documentation they complete at the end of a project.

We have summarised our views on this document below, however, a general comment is that the bulk of the document is based on documentation prepared earlier in the project and cut/pasted into this document with very little added value.

i) Project deliverables are listed, and stated delivered to the required quality but there was no evidence of what the quality was and how it was measured and who accepted the results.

ii) Milestone Acceptance Forms used to sign-off milestones contained no view of the expected versus the actual.

iii) Independent Quality assurance – we would expect to see input from that team.

iv) Terms of References included the roles and responsibilities of project members but are not considered relevant for this document.

v) The scoping sections state what had to be done and the and how it was done, but contained nothing about results, i.e. how many people were trained, training material, how it was tested as a success.

vi) Analysis of team performance is a subjective view, no metrics and no negative comments were present.

vii) Detailed lessons learnt are statements of what happened, not what went well, what didn't go so well to inform the next set of projects.

viii) There were no details of any lessons learnt from previous projects and how they were implemented and if they worked.

ix) Cost benefit analyses only breaks down the cost at the total project level, and that was delivered under a total budget, a further breakdown for cost areas would be required (Capex v Opex performance against the original budget).

x) Benefits are stated to be being tracked as part of a larger project. However this project has still claimed the benefits with no formal checks that they have been delivered.

xi) QA commentary is the best part of the document but could go into more detail about the quality reviews and evidence of the different documents used

xii) Copies of the baseline plan and the end delivered plan should be included in appendices.

xiii) The exit report doesn't refer back to a sanctioning paper. The only paper we have been provided covers all of project Nexus whereas the exit report cover one element, we find it difficult therefore to fully review the exit report.

The sanctioning paper states a key lesson learnt is that these types of projects go through lots of changes which eventually lead to an overspend of 15% due to the business requested changes against assumptions. The answer has been to add a 15% contingency to the project submission rather than investigating how the project budgeting/scoping processes can be improved.

Overall the majority of the Project Exit Report is a statement of what was required and how the project team went about it, not how the project performed against the baseline with the relevant evidence.

A5.5.3 PROJECT EXIT REPORT (JIS PROJECT)

The JIS project scope was to replace the hardware of the systems which receive and hold the emergency job records prior to the job being closed when the emergency has been "made safe". We were passed the exit report for this project as a further sample of the documentation they complete at the end of a project.

The JIS exit report follows same pattern and most of the comments made above are valid. This suggests that NGG are following a set template for this document and a set process of generating this documentation with very little attention to the purpose or benefit.

A5.6 QB (PROGRAMME)

QB is a software application suite which manages the issue and return of work between the office and the field. The project has a number of benefits;

i) Passing accurate and up to date information to the field

ii) Managing the work and field teams effectively

iii) Capturing work records at source, saving clerical effort improving accuracy and reducing the time taken for updates to return

We support the general principles which the project aims to address and believe that a well structured and efficient project of this nature can increase the efficiency of the organisation and provide enhanced service to customers. We have not been given an exit report or PIA for this project and therefore cannot comment on the final outcome. However the analysis given below will shows that we believe the project may well not have been completely efficient and not all of the benefits may yet have been realised.

QB analysis is made difficult because whilst QB is really a programme of projects, the reporting has been summarised at the programme level. We have not been given split expenditure statements for the individual projects within the programme.

The following statement was provided by NGG in their BPQ submission.

> *"The software development costs associated with QB field system incurred early in the current price control period were not charged to Capex in the regulatory accounts. However, as this expenditure lead to creation of an asset that facilitates a core regulated service and was a direct substitute for the replacement Private Mobile Radio (PMR) system for which £68m was included in the Final Proposals Capex allowances, this expenditure has been included in our RAV roll forward calculation in the BPQ. The table below quantifies the differences between the regulatory accounts and BPQ RAV roll-forward tables A7.1 and A7.2. (positive values indicate higher values in BPQ RAV tables)."*

As Stated by NGG All Figures £m Nominal	2002/03	2003/04	2004/05 *forecast values*	Total
QB field system	14.3	23.8	13.2	57.7

Table A5 - 4

We understand that the above costs relate to Opex expenditure incurred on QB which NGG now wish to capitalise. We cannot support the statement by NGG

"*QB is a direct substitute for the replacement Private Mobile Radio (PMR) system."*

The mobile radio system replacement project essentially provided the communication path for both voice and data transmission between the office and the field. This communication path would be privately provided and would be independent of normal public mobile communications systems. QB is essentially an IS system project which provides systems support to field based staff. In order to work, QB system uses public mobile communications services to pass data between the office and the field. Voice communications are provided again by public services.

A key aspect of a PMR system is the separation from public telephone services. The importance of this separation is that at times of major incident public telephone services can become congested or suspended. At such times it is essential that emergency gas staffs are able to effectively communicate as they may have a part to play in dealing with the incident. NGG have provided a management paper which outlines its decision not to proceed with a scheme independent of the public systems. This paper states that the government has put in place a new national system to provide the emergency services (fire, police, ambulance) with an emergency mobile communications system (Airwave) based on a new form of PMR technology. The government also, after representations were made, allowed certain non emergency organisations to make use of the Airwave system. Transco made a case to government setting out the special needs of the gas emergency service and obtained government approval for Transco to use the Airwave system.

The management paper does not set out the reasons why it was important for the gas emergency service to have access to the Airwave system or the implications of not having such access. It merely states that commercial difficulties prevented Transco reaching agreement with Airwave and that experiences using the public services were good. The management forum or date of such forum receiving the executive report is not known.

The following extract from the 7 July 2005 Report from the London Assembly is a timely reminder of the importance of independent mobile communications.

> *"It ought to have been predictable that in the event of a major incident in London, mobile telephone networks would become congested and it would become difficult to make or receive telephone calls. It happens every year on New Year's Eve. It happened on a larger scale after the 11 September attacks in New York. London's emergency services nevertheless relied to varying extents on mobile phones to communicate internally among their senior officers. This led to some major communications problems on 7 July."*

A5.7 QB (NETWORKS)

QB (Networks) is aimed at distribution teams carrying out both planned and unplanned (emergency) work. The scope of the project includes job details and plans timesheets and work records.

A5.7.1 ORIGINAL APPROVAL JULY 2002

We have not been provided with the original approval and cannot therefore confirm the scope of this approval. We do know from subsequent approvals that the original approved sum was £20.4m. We note from the additional information that by March 2002 (4 months prior to the project approval) £6.7m had already been charged to the Capex account for this project.

Original Case All Figures £m Nominal	One Off Costs
Consultancy	3.9
Contractors	3.0
Transco Business	1.9
Transco IS	1.1
IS Non Specific (including Managed Services)	1.2
Overheads	1.5
Licences	4.6
Capex	3.4
Total One-off Costs	20.6

Table A5 - 5

Whilst the title of this project is "Project QB" we believe that the project scope/costs only relate to the implementation of the systems to support the network distribution teams. Later in the project lifecycle this element of QB is annotated 'QB (Networks)'.

A5.7.2 RE-SANCTION JANUARY 2003

Although the Lattice Executive Committee approved the original request in July 2002, Transco Executive approved a change of scope to the revised strategic solution in August and September 2002. This revised scope was due to the tactical solution not proving workable. This followed a trial of field systems carried out in July (the same month at the main approval). The trial proved the basic concept, although it didn't meet wider business strategic requirements. At the same time, consultants (PwC Consulting) concluded that the tactical solution wouldn't work, so a move to the strategic option was required.

Whilst the Transco Executive (we haven't been provided with the approval paper) approved a change of scope in August/September 2002 this re-sanction paper was not formally approved until January 2003, therefore project expenditure was continuing from August until January on the basis of the revised scope, making it far more difficult for the Executive to cancel the project as more expenditure had been committed. It can only be assumed that Executive approval was almost a process step rather than the true decision making step.

At the time of the January paper it was claimed that to stop project would cost £17.6m. The paper makes no mention of the costs incurred in 2001 (£2.8m) and states that the project will spend £2m Capex in 2002 whereas the NGG information is that £4.5m was spent in 2002Q1. Given that the System design would still not be finalised until March 2003 and the first implementation would not start until August 2003 it is our opinion that these levels of expenditure are above the levels of an efficient project.

The revised costs are shown in Table A5 - 6. These show that the total costs have risen to £38m although revised benefit forecasts claim that conservative estimates will deliver an increased NPV of £20.2m.

The strategic impact refers to UMS, Network Services and EMS but doesn't then follow through in costs and benefits. The costs do not include the above and it states they would be subject to separate paper.

The options presented in the paper are not considered to give the Executive a real option

i) Continue with the increased costs and benefits

ii) Cancel/ write-off £17.6m

iii) De-scope - wouldn't reduce costs, lose benefits – not costed

Benefits were to be tracked by putting them into performance contracts. No benefits tracking of loss of FTEs or the benefits was delivered as part of the business improvements.

Original Case All Figures £m Nominal	Original One Off Costs	Revised One Off Costs
Consultancy	3.9	5.7
Contractors	3.0	7.3
Transco Business	1.9	1.2
Transco IS	1.1	1.9
IS Non Specific (including Managed Services)	1.2	3.6
Overheads	1.5	3.3
Licences	4.6	6.9
Further Provision (Opex)		0.5
Capex	3.4	7.5
Further Provision (Capex)		0.2
Total One-off Costs	20.6	38.0

Table A5 - 6

A5.7.3 RE-SANCTION APRIL 2004

We note that yet again the main elements of this re-sanction have been presented to DISSG 6 months before the formal re-sanctioning paper has been presented for approval.

This submission asks for an extra £1.9m and to extend the delivery from January to August 2004 and notes that the delivery of the revised maps software would follow after the delivery of the last software release planned in August 2004. This additional maps software would be delivered as a separate IS project in September. It is not clear if this maps software has been implemented. This suggests that planning was not carried out using forward planning and that dependency on other parts of the business and suppliers were not built into the planning process.

Much of the text of the paper is written in the future tense but should be in the past. The paper talks about having a planned end date of November 2003 when the paper was presented in April 2004. This suggests the text was taken from the paper the DISSG in October 2003 and not put into context. This could mean that most of the money (£1.9m) requested over and above the original sanction would have been spent before approval was given.

A5.7.4 SUMMARY

The project will appear to come in on budget and plan because it was measured against the last sanctioned approved spend and delivery as opposed to the first. Reference was made to original business case but only in terms of being a positive NPV, and doesn't review or say what impact the changes actually have. This is a culture of re-baselining.

Formal decisions to approve a re-sanction based on a change of scope or monies are taken months prior to the paper being submitted to the approval body, by which time it can be assumed that the majority of the request has already been spent and the approval body can only approve the latest paper or stop the projects. Only in extreme circumstances could a close down decision be taken.

Documents provided show that a programme/project methodology is being followed and that all of the documentation is being controlled in a change control framework and has a process for approval; however, the documents provided have some flaws.

A number of re-sanctions together with upward spiralling of costs, suggest that the scope control is weak or the original scoping and design was not sufficient to meet the business requirements or that the business requirements were developing during the project. Whichever the case, the project development cycle seems to be inefficient.

Only two options were put forward as part of the re-sanction, which are either 'do nothing' or 'do the recommended option'. The costs associated with doing nothing are not explained in any of the papers submitted.

A5.8 QB (MARS)

QB (MARS) project is aimed at maintenance staff carrying out both planned and unplanned work. The scope of the project includes job details and work records. The system interfaces with the maintenance records and job scheduling system (MIMS).

A5.8.1 APPROVAL FEBRUARY 2003

The paper was submitted in February 2003 and combines 3 previous papers, although it doesn't say what these papers were or what they requested. References to changes in delivery of scope by combining elements together suggest that not enough effort was employed up front to identify and develop the right strategic solution.

The reasons for scope change are tenuous, and use phrases such as "*delivering an 'out of the box solution"* which do not communicate in plain language to the approving body. A fundamental requirement was recognised during the design phase *'Scope now includes maps and site drawings ('redlining -, a critical safety requirement)'*. We are surprised that this fundamental requirement was not identified at a very early stage. There is no mention that a change of HSE or legislative requirement had forced this change in requirement.

(There was a combined implementation approach which reduces costs but was not shown in the financial analysis.)

We would have expected further options to have been offered in order to deliver the business benefits. This would have demonstrated better that the recommended option using the strategic QB solution provided the best value. The only options considered in the paper were based around versions of the same technology or the timing of the implementation, more wide ranging options do not seem to have been considered

The sanctioning committee was asked to approve the full £16.6m against the £13.1m previously approved. We have not been given the original approval.

The lessons learned listed in the re-sanction are a combination of assumptions, statements of intent, and lessons learned. Where the latter have been identified, the paper does not state how these lessons will be incorporated into the project.

A5.8.2 MARS APPROVAL 2

This re-sanction requests approval for an increase £4.5m up to £23.1m.

The reason for the additional expenditure are:

i) An FDCS (definition not known) scope for results and reading

ii) Compliance with Blackwater

We consider that this rework, particularly for the 'Results and Reading' functionality may well result from a lack of detailed understanding of the requirements at the project initiation stage which delayed the project and hence caused a review of the scope due to the network sales process.

We believe the correct decision was to continue with the project at this stage as to stop the project at this point would have involved a considerable write-off of the expenditure to date.

The need to go back for more money of which £1.9m is programme management and system integration, suggests that the project was probably not be managed efficiently. We believe that not sufficient thought had been given as to how the systems would need to be integrated.

A5.9 PROJECT INEFFICIENT COSTS

We have analysed the various project approvals and re-sanctions in order to assess the performance of the project. We conclude that the original project spent a considerably sum of money investigating the project, however, this seems to have led to an initial widening of scope rather than producing a clear set of deliverables for early implementation.

From the documentation we have reviewed we have formed opinions about elements of inefficient spending which occurred within the project. Our conclusions are tabulated below.

Additionally we have analysed all of the project approvals we have been given to reconcile with the reported expenditure amount. Our reconciliation leaves £8.3m unaccounted. We can not determine if this is wholly efficient or inefficient. We have therefore recorded this expenditure as being inefficient within the range £0m - £8.3m.

Inefficiency	Commentary	Range £m Nominal Prices
Initial Investigations	We conclude that the expenditure incurred during this period was the initial investigations for the financial approval presented to the Lattice Executive in July 2002. We find the level of this expenditure excessive for this element of work	3.5 – 5.5
QB Networks Preparations/Approval/ Design	We are unable to account for the expenditure during this period which seems to be further project definition/approval and a small trial in the West Midlands	4 - 12
QB Mars Design Changes	Increased spending due to changes to the scope and design of the proposed QB MARS system	4 – 6
QB Undefined	We have not been able to reconcile the reported expenditure against the project approval sums provided. We are therefore unable to confirm if this expenditure is efficient or inefficient. We have therefore used a mid-point value for this expenditure	0 - 8.3

Table A5 - 7

In the table below we have documented our conclusions for the project using the mid-range value of our figures where appropriate. All figures in this table have been inflated to 2005/06 prices.

QB Efficient/Inefficient Expenditure (Distribution)	£ m 2005/06 Prices
Efficient Expenditure	**58.9**
QB Networks	40.0
QB MARS	14.8
QB Undefined	4.1
Inefficient Expenditure	**22.8**
Total Project Expenditure	**81.7**

Table A5 - 8

The total QB inefficiency has then been pro-rata applied for the Capex elements to a total of £7.9m. For the period April 2002 to March 2005 these figures have been applied to the GDN reported expenditure as a percentage of there total IS expenditure.

Allocation of QB (Capex) Inefficient Expenditure £ m 2005/06 Prices	2001	2002Q1	2002/03	2003/04	2004/05	Total
Network						
EoE			0.2	0.3	0.1	0.6
Lon			0.1	0.2	0.1	0.3
NGN			0.1	0.2	0.1	0.4
NW			0.1	0.2	0.1	0.4
Scot			0.1	0.2	0.1	0.3
South			0.2	0.3	0.1	0.6
WM			0.1	0.1	0.1	0.3
WWU			0.1	0.2	0.1	0.4
UKD	1.7	2.8				4.5
Total	1.7	2.8	0.9	1.7	0.7	7.9

Table A5 - 9

APPENDIX 6 XOSERVE

A6.1 INTRODUCTION

The purpose of this appendix is to provide information regarding the funding by the GDNs of the xoserve one-off expenditure. The majority of this expenditure is required for changes to the IS systems run by xoserve.

A6.2 CONTEXT

This appendix has been written specifically for the purpose of being included as a standard appendix supporting each GDN report. It therefore considers the expenditure across all networks on the xoserve systems.

The company xoserve provides transactional services, information system (IS) support and change management on behalf of the GDNs and the NTS. The primary recipients of xoserve's services are the Networks' customers, the gas shippers. The core services provided by xoserve are delivered mainly through a suite of integrated information systems collectively known as UK Link.

The shareholders in xoserve are a combination of the gas transporters for which xoserve delivers services. The percentage shareholdings were determined by assigning National Grid Transmission an 11% shareholding and then dividing the remaining shareholding amongst GDNs by reference to the share of the total supply points in each network.

The current holdings are given in the table below.

xoserve Shareholders	Holding
National Grid	56.57%
Scotia Gas Networks	17.02%
Northern Gas Networks	10.38%
Wales & West Utilities	10.03%

Table A6 - 1

A6.3 CAPITALISATION POLICY

xoserve has submitted its own BPQ on the basis that all IS system expenditure is an Opex charge in the year in which the expenditure is incurred.

We note that most of the GDNs who are funding these changes are capitalising the charges. Some GDNs have not returned costs within their BPQs which relate to xoserve. We conclude that these GDNs are treating the expenditure other than Capex.

A6.4 XOSERVE FUNDING REQUIREMENTS

The table below gives the total xoserve funding requirement for both IS systems and furniture and fittings and other Capex. The funding for IS projects is not treated as Capex in the xoserve accounts.

xoserve Funding Requirements (All GDNs) All figures £m	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
[redacted]								
Total	0.1	2.0	5.8	7.7	13.2	15.9	12.2	5.6

Table A6 - 2

xoserve's early plans are to replace the support infrastructure for the systems using the same application software that is currently running. They claim that this is required to minimise the risk of failure due to capacity and support problems;

> *The operation of the systems is subject to ongoing technical monitoring. In the past six months this monitoring has indicated serious performance and storage issues that must be addressed before they translate into problems that affect the output performance for the business users of the systems and ultimately impact on the competitive gas market.*

We believe that this is a reasonable and prudent strategy to ensure continued uninterrupted operation of the xoserve systems and services.

We note that xoserve has prepared initial feasibility studies which consider the strategic and technical issues for the system refreshes. We are not aware if xoserve has produced detailed cost assessments for these technology upgrades. We believe, however, these costs should be reasonably predictable once these project plans have been prepared.

In contrast xoserve's plan to upgrade the application code during the period 2009-2012 will be a much larger project, potentially vulnerable to cost escalations and large project risks. We recommend that this element of xoserve's plan is careful reviewed, ensuring lessons learnt from the large projects undertaken by NGG such as Ulysses and Quarterback are reviewed and steps taken to ensure the plans minimise the potential for the problems to re-occur.

A6.5 GDN FUNDING PROVISIONS

Not all Networks have included a provision for xoserve funding within their BPQ Capex tables. We are not aware of any reason for these omissions and can find no references within the supporting documentation. Analysing the provisions that have been made, there would seem to be a correlation between xoserve's funding requirement for distribution systems, the GDN shareholding and the level of Capex provision made by those GDNs that have included xoserve Capex. We have therefore estimated the contributions which would be anticipated from the Networks which have not made provision. The results are shown on in figure A6-1.

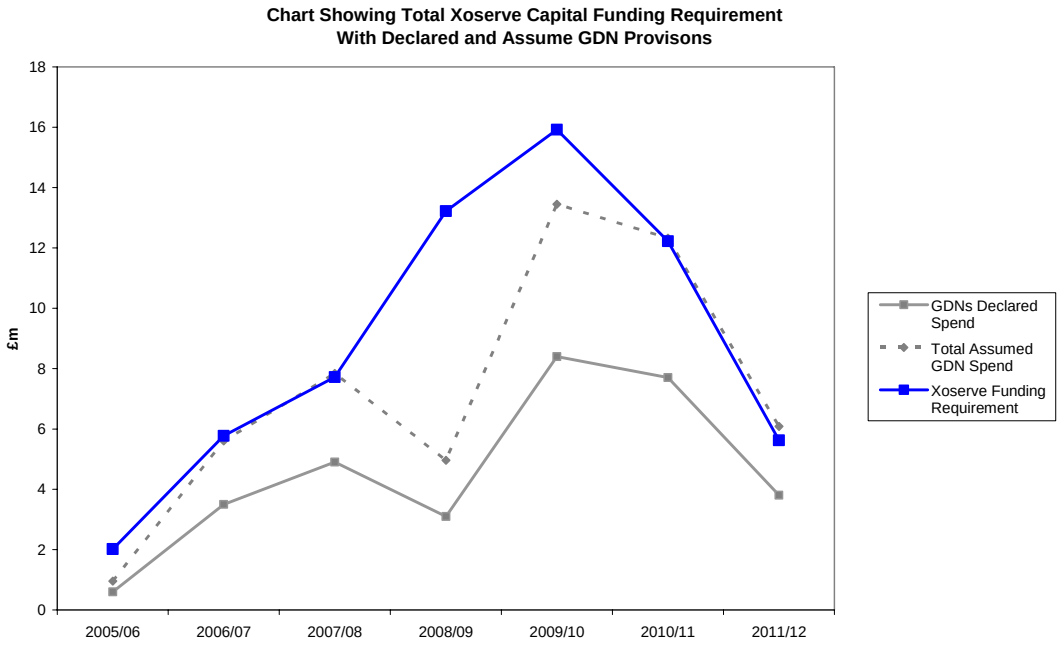


Figure A6 - 1

We conclude that the gap between the xoserve funding requirement and the assumed total Network contributions relates to the project to refresh the GEMINI technology for which NTS would make a sizable contribution.

We would suggest that there should be a more transparent reporting of the linkage between xoserve's funding requirements and the provisions made in the GDNs Capex forecasts.

A6.6 CONCLUSIONS

We conclude that xoserve's plans for the technical system refreshes are well made and appropriate. We believe the forecasts are still subject to more detailed financial estimation, which may change these initial forecasts. We are not in a position to provide any more accurate assessment of these forecasts.

We believe that xoserve's plans for the rewrite of the UK Link systems and other major industry changes (such as GDN interruptions and NTS exit reform) should have particular attention during the main 5 year control review.

APPENDIX 7 LTS PROJECT REVIEW - GILWERN TO HAFODYRYNYS REINFORCEMENT PROJECT

A7.1 SUMMARY OF PROJECT

The construction of 25 kms of 600mm diameter class 600 steel pipeline from Gilwern to Hafodyrynys and the rebuilding of the Nash Road Pressure Reduction Installation to reinforce supplies to South East Wales and to increase LTS linepack storage.

This project was selected because the escalation of the project costs and because it was completed one year later than planned.

A7.2 SUMMARY OF FINDINGS

We have examined the data provided for this project and can confirm that it was not sufficient to determine fully the appropriateness of all of the expenditure.

Determination of the treatment of costs for the RAV has therefore been based on the information available. No tender evaluation, contract risk assessments or environmental impact statement were available.

The network analysis data provided clearly demonstrated that this reinforcement was required for 2002 to avoid a failure to supply statutory loads in South East Wales.

However, Transco did not adhere to its own stated lead time requirement of 3 to 4 years for major pipeline projects. This led to compressed timescales, the splitting of construction works over two seasons, escalated costs and late completion.

The project justification paper reviewed alternative solutions and we are content that all reasonable alternatives were included. The physical solution chosen was the best available.

The materials were obtained through Transco Procurement and Logistics and there is no reason to believe that this process was inefficient. We are unable to comment on the Contactor's appointment as no tender returns or analysis were available.

The project was within the final approved cost, but this was 45% higher than the original approval. There is insufficient data to establish if the escalating cost estimates were fully justified

A7.3 PROJECT REVIEW

A7.3.1 PLANNING AND NETWORK DESIGN

We have reviewed the planning criteria for this project and have concluded that the network analysis data fully supported the need to undertake this project in the year stated (by winter 2002/03). It is clear that without this project there would have been a failure to supply in 1 in 20 winter conditions.

It is not clear why Transco accepted the transfer of a large connected load from interruptible to firm ahead of completion of this project, thereby putting unnecessary pressure on themselves to complete on time.

A7.3.2 PROCUREMENT

i) Materials

We have not examined the procurement processes for the major materials. The line pipe was obtained through the Transco Procurement and Logistics processes.

ii) Contracts

We are unable to comment on the Contract procurement process as no details of tender evaluation or contact risk assessment were available.

However, the costs for the contract work overspent the approved sum by 67% which is far more than would be expected for an efficient process. This overspend was £7m. It appears that an efficient assessment of the risks associated with the project was not completed until June 2002, three months before the original completion date for the project. We have examined the reasons for the overspend and we are not content they were all necessarily incurred and efficiently undertaken.

iii) Contract management

This project was managed by in house staff. There is no evidence that this was not conducted efficiently.

A7.3.3 SAFETY AND ENVIRONMENT

No environmental impact statement has been provided. It is clear from the documents provided that the environmental and archaeological sensitivity of the route had been identified early but there is no evidence that the risks associated with these had been efficiently addressed until June 2002 (three months before the original completion date).

A7.3.4 FINANCIAL CONTROLS

All the due governance processes for this project were undertaken appropriately.

However, the estimated cost of the project increased from an original £17.0 m in August 2000 to £19.5m in March 2002 and finally to £25.3m (actual). The project submission papers refer to the delay in DTI approval and the munitions finds but fail to identify in detail where the additional costs were actually being incurred. No financial analyses of the risks associated with options considered in November 2002 appear to have been carried out.

A Post Investment Appraisal was submitted on 29 July 2004 to DPSC for this project. In our view the PIA should have addressed the issue of the escalating costs from the project inception not from the final authorisation. It did identify the true causes for the late delivery of this project. However we do not agree with the findings that the escalating project costs were all justified.

A7.4 CONCLUSION

Transco did not allow sufficient lead time to mitigate all the planning issues for this project. It arbitrarily changed the control of the management of the project from the LDZ to NT part way through the planning phase causing delay and leading to upward cost revisions.

The increases from £17.4m to £25.3 m have not been properly tracked. It is acknowledged that there were difficulties related to permissions and UXBs but there is a risk of these on any new pipeline route. We believe that if the planning phase had been allowed to progress uninterrupted, the permissions may have been in place to permit all construction in 2002 which would have materially reduced costs and would have delivered the reinforcement to the timescale correctly identified as necessary to meet peak demand for the 2002/03 winter.

The absolute costs of the subsequent delays are not apparent from the documents supplied and we are surprised that SDSPC accepted the findings in the PIA without better substantiation.

We estimate that even allowing for the actual constraints encountered on this project, it may well have been completed for £20 to £22m if the processes had all been followed efficiently.

APPENDIX 8 REPEX PROJECT AUDIT – CALIFORNIA ROAD AREA BRISTOL

A8.1 SUMMARY OF PROJECT

The construction of 3573M of PE pipe ranging in size from 32mm to 250mm, as replacement for 4785M of SI/CI/ST pipe ranging in size from 1" (ST) to 8". The estimated cost assumed the work would be done principally by `dead` insertion. Additionally, included within the scope of the Project were 257 service relays and 257 service transfers.

The total estimated cost of the Project was £464,043.

A8.2 DOCUMENTATION PROVIDED FOR AUDIT

The following documentation was provided and reviewed for the completion of this audit:

Wales & The West Planning Process 2005 - 2006 Draft Proposal

Email correspondence ex Planning indicating replacement sizes for all Pipe Object Numbers (PONs).

Estimating detail sheets for Contractors, Materials and Project duration

Project Estimating Summary Sheet

Email correspondence ex Planning, indicating replacement sizes for all Pipe Object Numbers (PONs) covered by the Project.

Plans of the Project area.

SAP Internal Order Creation Request.

Completed Form `LDZ Expenditure Approval` including Project estimates, estimated costs breakdown, and authorisation signatures.

Wales and West Investment Committee – Project submission.

A8.3 PLANNING AND NETWORK DESIGN

The Investment Committee submission contains the following statement: "The proposal is aligned with Transco Policy for Distribution Pipe Replacement T/PL/REP1 and complies with the procedure T/PR/REP2 and is part of the Wales & West Network strategic 30 year Replacement Plan to reduce risk.

The proposed pipework design has been supplied, and the Form `LDZ Expenditure Approval`, signed by the Network Planning Manager, indicating that the plans met the planning criteria which applied in January 2004. The mains were designed to be installed by insertion where possible.

The expenditure approval was signed by the Network Director, following submission to the Investment Committee.

A8.4 PROJECT COMPLETION

No details were provided regarding a post investment appraisal, or post completion report.

The Desktop MAPS print supplied initially as a Project plan, did not clearly show the Project proposals, but showed a mix of SI (which was mostly relaid during 2004/05) and PE mains. Further information was requested, and two additional plans were supplied which clearly

denoted the planned relays, and mains to be abandoned. The `base` prints upon which the proposals were annotated are consistent in showing some of the relay work completed, but many pipes, `Earlstone Crescent` and `Long Sandstone` being the road names of two examples, still containing SI mains. If this is a representation of what is currently on Desktop MAPS, then that indicates that the as-built details have not been captured correctly.

A8.5 CONCLUSIONS

From the information supplied we can confirm that the Project substantially followed the Planning processes, and that the project planning and design were `signed off`. The project was authorised under the delegated authority of the Head of Network.

It appears likely, that the as-built details, of mains laid in 2004, may not yet be updated into Desktop MAPS.

APPENDIX 9 HSE TARGETS WWU

A9.1 INTRODUCTION

The rationale is given for the inclusion of each indicator. The acceptability of the response is indicated, or a commentary is added, if it is unacceptable**.**

A9.2 INDICATORS

i) C18.1 Indicator - Mains Fractures and Corrosion Failures - **Acceptable**

The impact of the replacement programme should result in a reduction of risk to persons and property, from the occurrences of sudden releases of gas caused by mains failures. Thus a reduction of this indicator with time is the desired outcome.

ii) C18.2 Indicator – Gas in Buildings - **Acceptable**

The mains replacement programme should result in a reduction in the recorded instances.

iii) C18.3 Indicator – Public Reported Escapes – **Not acceptable**

The mains replacement programme should remove a number of the potential leakage sources, and thus reduce the number of PREs.

Response - The number of PREs is not shown to be decreasing over the forecast period, and given the modest increase in average system pressures (C18.5), it is surprising that the replacement workload on mains and services is not expected to contribute to a reduction in PREs. The rationale behind this forecast should be reviewed. The forecast level of PREs if over estimated, will have the effect of maintaining OPEX at an unwarranted high level.

iv) C18.4 Indicator – Actioned Repairs - **Acceptable**

Actioned repairs to mains and services will normally result from attending a PRE, where an uncontrolled escape of gas has been detected. The replacement programme will have negligible impact on `damage` repairs, but the overall figure should reduce as the number of PREs due to `condition` reduces.

v) C18.5 Indicator – Average System Pressures - **Acceptable**

Leakage is proportional to pressure. Higher pressures result in proportionally increased leakage and a rise in the number of PRE.

vi) C18.6 Indicator– Leakage - **Acceptable**

The awareness has grown, that leakage of gas from pipes, as well as being potentially dangerous and costly, has the potential to harm the environment through the release of methane, a `greenhouse` gas. The replacement programme should reduce leakage.

vii) C18.7 Indicator – Total Risk (from model) - **Acceptable**

The reduction of risk is the main driver for the replacement programme, and it is important that the overall risk score is forecast to be reducing.

xiv) C 18.7 Response