LECG

Office of Gas and Electricity Markets

Benchmarking National Grid Gas Distribution's business support services

Confidential

DRAFT

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Contents

Glossary

The following abbreviations are used in this report:

ANAO	The Australian National Audit Office
ASA	Asset services agreement
BPQ	Business planning questionnaire
C&C	Corporate centre and communication
EE	East of England GDN owned by NGGD
F&A	Finance and audit
FAR	Finance, audit and regulation
FTE	Full time equivalent
GBP	Global Best Practices
GDNs	Gas distribution networks
GDPCR	Gas distribution price control review 2008-2013
GT	Gas transporters
HI & LS	Hildebrandt International and Laurence Simons European Law Department Benchmarking Study 2004-2005
HR	Human resources
IS	Information services
LDZ	Local distribution zone
Lon	London GDN owned by NGGD
NCC	National Computing Centre's Benchmark of IT spending, 2005
NE	North of England GDN owned by NGN
NG	National Grid
NGN	Northern Gas Networks
NW	North West GDN owned by NGGD

Ofgem	Office of Gas and Electricity Markets, GB regulator for gas and electricity markets
ORR	Office for Rail Regulation
PLC	Practical Law Company Best Practice Survey 2006
R&D	Research and development
SC	Scotland GDN owned by SGN
SE	South of England GDN owned by SGN
SG&A	Sales, general and administration
SGN or Scotia	Scotia Gas Networks
The regulator	Ofgem
TPCR	Transmission price control review 2007-2012
UU	United Utilities
UUOL	United Utilities Operations Limited
WCCFO	Working Council for Chief Financial Officers 2003
WM	West Midlands GDN owned by NGGD
WW	Wales and West GDN owned by WWU
WWU	Wales and West Utilities

1 Executive summary

Introduction

1.1 The Office for Gas and Electricity Markets ("Ofgem") has retained LECG to benchmark business support operating costs with respect to the Gas Distribution Price Control Review ("GDPCR") 2008-2013. Ofgem is currently performing the GDPCR, which will seek to set new price controls from 1 April 2008 to 31 March 2013. This review will build on Ofgem's work over the past five years to develop its framework for regulating energy network monopolies.

1.2 We have been asked to assess the efficiency of support functions and overhead costs, including corporate costs, of each of the GDN groups. The focus of this work has been to analyse the efficiency of the support functions of the GDNs under new ownership.

1.3 Our work has focused on the following support functions: information systems; finance, audit and regulation; insurance; property management; corporate centre and communication; human resources; legal; and procurement and logistics. Our work has been limited to benchmarking at the GDN group level, including:

- National Grid Gas Distribution ("NGGD");
- Scotia Gas Networks ("SGN");
- Northern Gas Networks ("NGN"); and
- Wales and West Utilities ("WWU").

1.4 This report covers our findings in relation to NGGD. This report has been written solely for the use of Ofgem. We are aware that Ofgem will rely, in part, on our findings and recommendations, as set out in this report. We are also aware that this report will be published as part of Ofgem's consultation processes.

Summary

1.5 The purpose of this study has been to provide a possible range for the efficient level of NGGD's business support costs over the next price control period. We have derived our estimates from a consideration of a wide range of evidence, relating both to NGGD, and to comparable firms and industries. We have supported our review of cost estimates with evidence related directly to NGGD's

overall cost base. We believe that our approach is consistent with regulatory best practice.

1.6 We understand that our work will be just one of many inputs into Ofgem's overall assessment. Ofgem will consider the scope for efficiency savings using a variety of methods. None of these methods individually will provide a precise picture of the scope for savings during the forthcoming price control, and each will require Ofgem to exercise a degree of judgement when determining the implications for NGGD. However, by approaching the efficiency assessment from a number of different directions, Ofgem will avoid placing undue weight on any one piece of analysis. Instead, Ofgem will look at a broad range of evidence and set cost allowances based on the overall picture that emerges. This will help to minimise the extent to which overall conclusions might otherwise be subject to error. We have also adopted this approach to our work.

1.7 We have established the upper and lower limits of the efficient cost ranges based on all of the available information and a judgement on the weighting that should be attached to the various different available pieces of evidence. In recommending the final ranges, no one type of analysis has been determinative.

1.8 In some instances, the GDNs appear to be efficient in specific support areas. We have not adjusted our analysis to reflect these efficiencies (i.e. efficiencies in one area have not been used to offset efficiencies in other areas). Our report clearly shows where the GDNs are relatively efficient and where they are not. It is for Ofgem to decide whether these efficiencies should be included in the final determination of costs.

1.9 We understand that the GDNs have provided to us their best available information. In places, further and more detailed information would have helped our assessment of relative efficiency. Despite this limitation, we believe that our approach and the level of analysis performed are consistent with other regulatory reviews of this nature.

1.10 The GDNs have factored in all efficiencies achieved to date and their forecasts include efficiencies expected over the price control period. This reduces the level of support services costs and results in more favourable comparisons against selected benchmarks. In doing so, we explicitly recognise efficiency achievements to date.

1.11 Our conclusions in relation to business support costs, under the low savings scenario, are set out in the tables below.

Table 1: Potential efficiency savings for business support costs 2006/07 – low savings scenario

Support services	Costs provided by NGGD (£m)	Adjusted costs* (£m)	Potential efficiency savings (£m)	Adjusted costs after efficiency savings (£m)
IS	32.90	30.98	0.00	30.98
Finance, audit and regulation	15.54	18.22	1.21	17.01
Insurance	15.59	15.70	4.40	11.30
Property management	24.70	23.79	2.88	20.91
Corporate centre & communications	10.67	7.94	1.06	6.88
HR	15.78	15.39	1.77	13.62
Legal	2.08	1.96	0.00	1.96
Procurement & logistics	6.62	7.74	1.79	5.95
Total**	123.89	121.72	13.11	108.61

Source: LECG analysis. In 2005/06 prices. Note: * After LECG adjustments to ensure cost comparability across the GDNs. ** Figures do not include "R&D costs" and "Other support activities" costs. R&D costs were expected to be £0.97m. "Other support activities" were expected to be (£5.36m) prior to LECG adjustments.

1.12 Our conclusions in relation to business support costs, under the high savings scenario, are set out in the tables below.

Table 2: Potential efficiency savings for business support costs 2006/07 – high savings scenario

Support services	Costs provided by NGGD (£m)	Adjusted costs* (£m)	Potential efficiency savings (£m)	Adjusted costs after efficiency savings adjustments (£m)
IS	32.90	30.98	1.96	29.02
Finance, audit and regulation	15.54	18.22	5.84	12.38
Insurance	15.59	15.70	5.17	10.53
Property management	24.70	23.79	3.17	20.62
Corporate centre & communications	10.67	7.94	2.44	5.51
HR	15.78	15.39	2.96	12.43
Legal	2.08	1.96	0.04	1.92
Procurement & logistics	6.62	7.74	2.63	5.11
Total**	123.89	121.72	24.18	97.52

Source: LECG analysis. In 2005/06 prices. Note: *After LECG adjustments to ensure cost comparability across the GDNs. ** Figures do not include "R&D costs" and "Other support activities" costs. R&D costs were expected to be £0.97m. "Other support activities" were expected to be (£5.36m) prior to LECG adjustments.

1.13 The results presented above should be considered in conjunction with our total support service cost benchmarking findings. We believe that lower weight should be attached to this form of analysis due to its level of aggregation and because there are no reliable external (i.e. third party) benchmarks for total support service costs. We note, however, that it does have the merit of taking into account potential trade-offs between support service categories. Our total support cost benchmarking suggests a possible efficiency saving of £33.6m per annum under the low savings scenario. Under the high saving scenario, the analysis suggests a possible efficiency saving of £44.3m per annum.

Report structure

1.14 In Section 2, we summarise our terms of reference in more detail. We summarise certain scope limitations. In Section 3, we summarise the information we have relied upon in developing the conclusions contained within this report.

In Section 4, we provide a high-level overview of the approach we have adopted. In Sections 5 to 13, we summarise our analysis on a function-by-function basis.

2 Introduction and scope of work

Introduction

2.1 In this section, we provide a background to the work we have been asked to perform, our terms of reference, as well as highlighting our experience used to complete the project. Finally, we set out certain limitations to the scope of our work.

Background

2.2 Ofgem is performing its Gas Distribution Price Control Review 2008-2013 ("GDPCR"), which will seek to set new price controls from 1 April 2008 to 31 March 2013. This review will build on Ofgem's work over the past five years to develop its framework for regulating energy network monopolies. There are a number of important developments compared with the previous price control review, which are summarised below.

Separation of transmission for price control review purposes

2.3 The previous price control review focused on gas transportation, encompassing both the transmission system as well as distribution. It established a revenue allowance for gas distribution by identifying direct costs, and allocating and attributing shared costs. The allowed revenues for gas distribution were approximately £2 billion per annum, increasing by RPI-2 for the following four years. The GDPCR will be the first Ofgem price control to consider gas distribution separately.

Separation of the gas distribution price control into regional components

2.4 During the current price control period, Ofgem made the decision to separate gas distribution into eight regional price controls from April 2004. No adjustment to total allowed revenue was made (i.e. it was a rebalancing exercise, not a reopening of the price control).

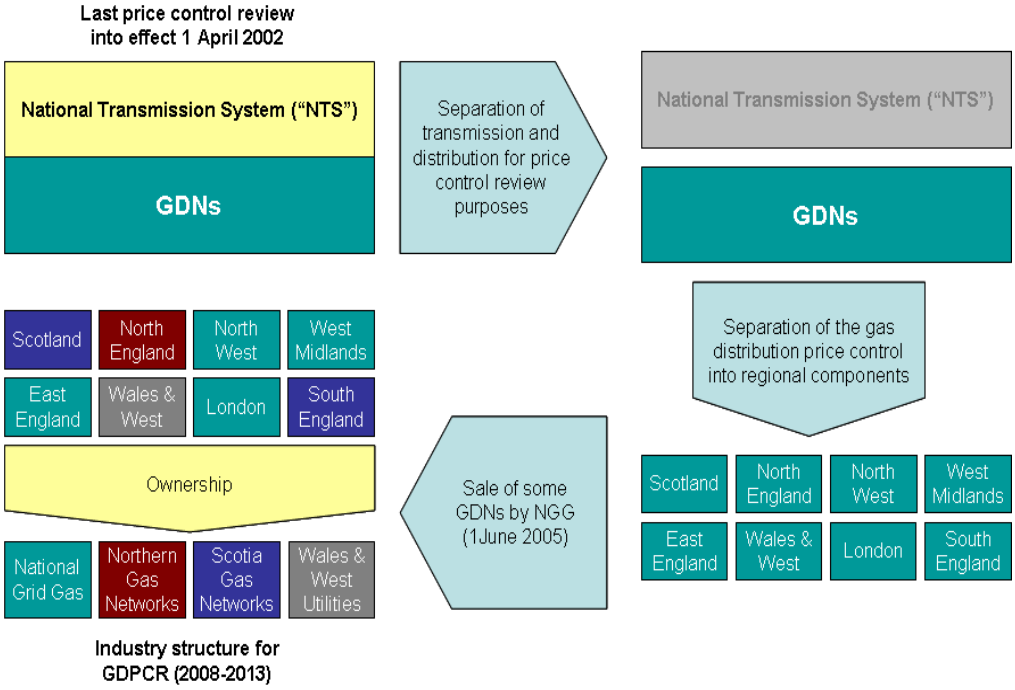
2.5 GDPCR will be the first review, following National Grid plc's sale of four of its eight Gas Distribution Networks ("GDNs") to three new owners on 1 June 2005[1]. As a result, the current industry structure is substantially different compared with

[1] The three new owners of the GDNs are Scotia Gas Networks, Northern Gas Networks, and Wales and West Utilities.

the previous review. These changes will have important implications for the conduct of this review.

2.6 We illustrate the changes to both the industry structure and the scope of the price control review below.

Figure 1: Changes to industry structure and scope of price control review



Source: LECG.

2.7 NGGD retained four GDNs: North West ("NW"); West Midlands ("WM"); London ("Lon"); and East England ("EE"). The new owners of the GDNs are:

- Scotia Gas Networks ("SGN") is 50% owned by Scottish and Southern Energy plc ("SSE"), 25% owned by the Ontario Teachers' Pension Plan ("OTPP"), and 25% owned by Borealis Infrastructure ("Borealis"), which invests in and manages the infrastructure assets on behalf of OMERS, another large Canadian pension fund. SGN purchased two GDNs: South of England ("SE") and Scotland ("SC");
- Northern Gas Networks ("NGN") is owned by a consortium of six partners: Able Venture Profits Ltd (40%), Alpha Central Profits Ltd (20%), Goldia Resources Ltd (15%), United Utilities Contract Solutions Ltd (15%),

Challenger Life No.2 Limited (5.8%), SAS Trustee Corporation. NGN purchased the North of England ("NE") GDN; and

- Wales and West Utilities ("WWU") is owned by a consortium of investors led by the Macquarie European Infrastructure Fund, which is managed by Macquarie Bank Limited. WWU purchased the Wales and West ("WW") GDN.

2.8 Ofgem believes that the creation of separately owned, managed and operated GDNs will allow effective comparisons to be made between the businesses. The opportunity to use comparative analysis to assess GDNs' costs should reduce information asymmetries and strengthen incentives to reduce costs. Ofgem proposes to use top-down benchmarking of operating costs across GDNs to assess relative efficiency.

Xoserve and the agency funding arrangements

2.9 An important part of the industry restructuring that occurred was the establishment of a transporter agency. Xoserve provides a single uniform interface between the IT systems of relevant gas transporters ("GT") and the shippers. Xoserve is responsible for a variety of functions such as invoicing shippers for use of the transportation system, and managing the change of supplier process. The creation of the agency avoids the significant costs that would arise if shippers had to interact separately with each relevant GT.

2.10 Ofgem will seek to ensure, as part of the GDPCR, that revenue does not fund xoserve's commercial activities. As part of this work, we have also been asked to benchmark xoserve's business support costs.

Terms of reference

2.11 In October 2006, Ofgem commissioned LECG to form a view on the relative efficiency of each GDN (by corporate group) and to form a view on the efficiency of the GDNs relative to external benchmarks. We were asked to build on the recent analysis of National Grid's business support services as part of the TPCR. Our work has involved an element of "bottom up" work focusing on the individual support functions. We were asked to focus on the following services: information systems; finance, audit and regulation; insurance; property management; corporate centre and communication; human resources; legal; and procurement and logistics. Our methodology is summarised in full in Section 4.

LECG team

2.12 LECG is a global economics and consulting firm, which provides independent and objective advice and analysis on matters of economics, finance, and strategy, to law firms, businesses, regulators, and governments. Founded in 1988, LECG has over 900 professional staff, including over 275 experts, operating in 30 offices throughout the Americas, Europe, and Asia-Pacific.

2.13 The skills required for this work are embodied in the members of the team who have worked actively on the project. Members of the team have extensive first hand experience of regulation and accounting. The team consists of a combination of economists, statisticians, accountants and industry experts. Our experts have advised a wide range of regulators and regulated companies in the UK, in Europe and in the US.

Limitations to our work

2.14 We have checked extensively the internal consistency of data supplied to us by Ofgem, the GDNs and the comparators listed in this report. However, nothing in this report should be taken to imply that we have conducted any procedures or investigations in an attempt to verify or confirm, by means of reviewing source documentations or processes, the accuracy of the data underlying each GDN's processes, beyond that specifically described in the report. Our work does not constitute an audit.

2.15 This report has been written solely for the use of Ofgem and it presents the findings of our benchmarking analysis. We are aware that Ofgem will rely, in part, on our findings and recommendations, as set out in this report and that it will be published as part of Ofgem's consultation processes.

2.16 Our work is limited to forming a view on the efficiency of separate support functions within each GDN relative to a range of benchmarks. We have not been asked to determine efficiency on wider basis. We understand that Ofgem will consider the findings of all their consultants, the GDNs' responses in consultations and bilateral meetings, and its industry knowledge to determine total allowable costs. Therefore, the findings presented in his report do not necessarily represent Ofgem's final determination of the allowable support service costs over the price control period.

2.17 In performing our comparative analysis, we recognise that our work is limited in some places due to a lack of detailed and consistent information. Clearly, the benefits from comparative competition will build up over time. These can be passed back to customers at future reviews.

2.18 We have faced a number of potential issues in performing our work. First, the industry restructuring that has occurred over the last two years has influenced data availability/consistency. GDN owners have been asked to provide detailed cost information for businesses that they have owned for a relatively short period.

2.19 Second, detailed historical information for the separate GDNs was not available before their demerger and sale on 1 June 2005. Before the GDN sales by NGGD, the GDNs were all part of a single entity. Financial information was not publicly reported for each GDN separately. In general, the purchasers of the GDNs have not received historical financial information as part of the sales process. The lack of available historical information has impeded our assessment of the level of efficiency achieved over the current price control period.

2.20 The availability of data is further complicated by the effects of the National Grid and Lattice merger in 2000/1 and the BG Group demerger into BG plc and Lattice plc in 1999. These issues have recently been identified as limitations by Deloitte in their TPCR efficiency report.

2.21 Third, management teams have only been in place for part of 2005/06, which is an important year for the review. New management teams may have had little opportunity to make an impact on the structure of the business and to assess efficiency. To the extent that the new management teams were able to identify potential cost savings, the forecast information was provided as part of the business plan questionnaire ("BPQ"). However, the risk remains that their limited experience of managing the new businesses may affect their ability to provide accurate and well-supported forecasts.

2.22 Last, the four management teams provide only a small number of comparators; which has limited the type of analysis that could be carried out.

3 Information used

Introduction

3.1 As part of our review, it has been necessary for both Ofgem and LECG to request information from NGGD. This is normal in reviews of this nature. We have supplemented this core information with a daylong site visit to each of the GDN ownership groups. We have also supplemented our analysis with additional third party benchmarking surveys. The findings presented in this report are based on our review and consideration of the information obtained from the following:

- NGGD's response to Ofgem's 2006 Business Plan Questionnaire ("BPQ");
- NGGD's response to 143 additional supplementary questions raised between 3 November 2006 and 29 March 2007;
- a site visit to NGGD's offices to discuss the responses to the supplementary questions and to clarify the issues;
- information provided to us by Ofgem;
- email correspondence with NGGD staff members;
- NGGD's February 2007 response to LECG's draft report; and
- initial responses to the LECG draft report from the other GDNs.

3.2 We understand that the GDNs have provided to us their best available information. In places, further and more detailed information would have helped our assessment of relative efficiency. To support the information provided to us by NGGD we have reviewed other third party data. For example, we have reviewed a number of third party reports, including but not limited to:

- Future Efficient Costs of Royal Mail's Regulated Mail Activities, LECG, 2 August 2005 ("LECG Postcomm Report");
- Results of work carried out by Deloitte in support of Ofgem's Transmission Price Control Review 2007-2012, Deloitte, April 2006 ("Deloitte TPCR Report");
- Report on Transco's operating costs for the 2002/03 to 2006/07 Price Control Period, Andersen, September 2001 ("Andersen TPCR report");

- Report of Findings, Ofgem Transmission Price Control Review, IT Spending at National Grid, Compass Management Consulting, 26 May 2006 ("Compass IT report");
- Transmission Price Control Review, Assessment of National Grid's Insurance Costs, Marsh, May 2006 ("Marsh Insurance Report");
- Procurement Effectiveness Study - Construction, Deloitte, 26 May 2006;
- Transmission Price Control Review: Assessment of National Grid's Property Portfolio, Drivers Jonas, September 2006 ("Drivers Jonas Report");
- Report Prepared for the Office of Rail Regulator, Benchmarking of Operating Expenditure, Oxera Economic Research Association, July 2003 ("Oxera ORR Report");
- Gas Distribution Price Control Review: One Year Control Final Proposals, Ofgem, 3 December 2006; and
- a number of third party benchmark reports. The details of these benchmarks are provided in the individual cost benchmarking sections.

3.3 We have attempted to review all current and relevant literature in performing our review. In addition, we have tried to obtain the most recent benchmarking information. For each cost category, we requested that the GDNs provide us with the most up to date comparator information they had or any benchmarking analysis they had performed. Only NGGD provided us with additional, though limited, sources of benchmarking information.

3.4 We have performed such analysis as we considered appropriate and as is set out in this report. We have provided our interim findings to NGGD, in order to verify the analysis underlying our report. We expected this review to highlight any further data inconsistencies or other factual inaccuracies or known concerns of comparability. We have updated our reports to address comments from the GDNs and Ofgem where appropriate. In responding to our interim report, NGGD provided only limited quantitative benchmarking or bottom up evidence to justify the relative efficiency of its cost submissions.

Information quality and process

3.5 During our review, we worked with Ofgem to implement and operate within a process designed to gather appropriate and necessary information from NGGD in a manner that was efficient for NGGD and Ofgem. The key aspects of this process are highlighted below:

- all information requests were made on a timely and reasonable basis agreed between Ofgem and each of the GDNs. NGGD was given sufficient time to provide thorough, high quality and internally consistent responses;
- information requirements and expectations were discussed with NGGD and all information requests were formally recorded;
- the supplementary information requests were prioritised and the timing of provision agreed with NGGD;
- Ofgem and LECG met with NGGD's management team to discuss responses to information requests; and
- LECG documented the site visit meeting with NGGD. The meeting record has been sent to NGGD to amend any factual inaccuracies.

3.6 We acknowledge that NGGD provided us with good quality information in certain areas. The company has described at length, its business model and organisation structure, together with its relationships with the iDNs. A significant amount of data was requested from NGGD and we acknowledge that in a majority of the cases, it has responded to our questions on a timely fashion. However, there were important areas in which responses were deficient. In particular, in areas where we have identified major cost movements over the price control period, we explicitly requested NGGD to provide detailed, bottom up explanations and evidence to support these movements. In a majority of the cases, NGGD only provided a high-level explanation of cost movements. This prevented us from performing a more detailed review of NGGD's cost forecasts[2].

[2] For example, we asked NGGD for this information in supplementary question LE-NGG-010 *"GDPCR 5yr Table 2.1 states that total real insurance cost of the distribution business increases by 5% per annum. Please can you provide explanation for this increase? What evidence do you have to support the increase? Do you have any bottom up/detailed calculations to support the increase or evidence supporting key assumptions? Is this increase NGG specific or will this impact all GDNs?"* A similar request was made in for each of the cost category for each of the GDNs.

4 Methodology

Introduction

4.1 This section describes our approach to benchmarking business support and corporate costs. At the request of Ofgem, we have reviewed: information systems; finance, audit and regulation; insurance; property management; corporate centre and communication; human resources; legal; and procurement and logistics costs. In this report, we refer to these functions collectively as support services.

4.2 The primary focus of our work was to benchmark support service operating costs. Where possible we have compared the costs of each GDN against each other, against Ofgem's conclusions for transmission and electricity distribution, and against other external third party benchmarks.

4.3 In addition to the quantitative assessment above, we have conducted a qualitative review of support services. Where appropriate we have assessed the policies and procedures adopted by the companies at a high level. We have considered how the GDNs assess future efficiency and, at a high-level, we have sought to determine from the information provided whether any unnecessary services appear to be undertaken.

4.4 We have also reviewed the nature of cost savings achieved post the sale of certain GDNs and plans for achieving further savings over the price control period. During our work, we have engaged with both Ofgem and the GDNs (including xoserve) to both obtain and to ensure the consistency of support service cost data.

Approach

4.5 Our review of support service operating costs included both a quantitative and qualitative review. Our approach included the following steps:

- information gathering;
- ensuring data consistency, and data verification and cleansing;
- determining material support services;

- performing quantitative assessment of each support service category, including the identification of appropriate benchmarking metrics and external benchmarking data;
- performing qualitative assessment of the benchmarking results; and
- providing recommendations on the size of potential efficiency savings.

4.6 We have also been asked to review xoserve's support service expenditure. The majority of xoserve's current operations are provided by National Grid. Consequently, xoserve benefits from National Grid's scale. While we have conducted a quantitative and qualitative review of xoserve's support service costs, we recognise that xoserve's overall efficiency is linked to National Grid's efficiency. Consequently, we have not sought to repeat our analysis for xoserve in the same level of detail.

Information gathering

4.7 Ofgem issued a Business Planning Questionnaire ("BPQ") to the GDNs in August 2006. The GDNs returned the completed BPQs in October 2006. NGGD has subsequently updated its BPQ operating costs. The BPQ operating costs tables we relied on were provided in November 2006.

4.8 We analysed the information and identified the additional data that was required to complete our study. We worked iteratively with Ofgem to generate supplementary data requests, the majority of which were submitted in November 2006. NGGD's full response to the initial supplementary requests was provided in January 2007. NGGD responded to subsequent supplementary questions as they were raised.

4.9 The BPQ and the supplemental data requests helped us to build a database of historic and projected costs, and other information (such as departmental headcount), across each business support service on a basis that was comparable across all GDNs. Qualitative support for historical and forecast cost data was also requested from each GDN.

4.10 We asked for a breakdown of support service costs by function and by activity. This information helped to ensure the consistency of cost category definitions across all of the GDNs. It also helped us to identify atypical and one-off costs, problems with the data, and differences in the internal processes between GDNs.

4.11 After submitting the supplementary information request, we held detailed discussions with the GDNs at their offices in November 2006. The operational site visits provided us with a deeper understanding of each support service. It helped us to understand how the data had been collated, and provided us with further clarity on efficiency expectations.

Data consistency, verification and cleansing

4.12 We have tried to ensure that information is gathered and presented on a consistent basis. A significant element of our work has been to assess the validity and the consistency of the data provided to us. We recognise that where the costs of certain activities are recorded may differ between organisations. To address this, we have examined the activities contained within each support service cost category. We have compared costs and activity definitions between the GDNs, through a series of supplementary questions and discussions with each GDN. Our draft reports were reviewed by Ofgem and by the GDNs for factual accuracy. We expected this review to highlight any further data inconsistencies or other factual inaccuracies. We have updated our reports to address comments from the GDNs and Ofgem where appropriate.

4.13 At the cost visits, we discussed the impact of the sale of the four networks by National Grid in June 2005. Some GDNs indicated this had a distorting effect on the underlying cost base in 2005/06. In some cases, the cost base included atypical costs. In other instances, it was thought that the new support service areas had not become fully operational by the end of 2005/06. We note that some of the GDNs have been able to allocate the costs incurred by National Grid prior to the GDN sales, to individual support service cost categories and have excluded these costs from their BPQ submissions. Consequently, we have used 2006/07 data to perform our benchmarking. This data better represents a "steady state" level of costs and activity.

4.14 We understand that some support service costs may display cyclicality due to the cyclical movements of some of their cost drivers. These costs include, for example, IS support (partly driven by IS capex) and regulation (partly driven by price control reviews). Where we expect such cyclicality, we have benchmarked the average costs over the entire cycle, as the costs in any particular year may not reflect the underlying efficiency.

4.15 We have reviewed cost trends and have assessed the dataset for outlying and anomalous data points. Each anomaly was raised with the relevant GDN.

Sculpted revenue adjustments

4.16 Many of the metrics used in this report are based on costs expressed as a function of revenue in line with many regulatory precedents and third party benchmarks. During the current price control review, Ofgem made the decision to separate gas distribution into eight regional price controls. The original regulated asset values ("RAVs") of each GDN were calculated based on physical asset values, as recorded in Transco's distribution asset registers. Ofgem considered that it was appropriate to minimise any unnecessary regional variations in distribution charges by adjusting (i.e. sculpting) the value of the RAV of each GDN.

4.17 These adjustments were relatively significant and ranged from between minus 33% to plus 24% of the natural RAV[3]. The allowed revenue in 2002/03 for the GDN groups, calculated on sculpted RAVs, was £58m higher for NGGD and £49m lower for WWU, as shown in the table below.

Table 3: Adjustment to 2002/2003 revenue

2002/2003	NGGD	NGN	SGN	WWU
Allowed revenue based on sculpted RAV	1,007.5	240.4	528.8	213.1
Allowed revenue based on natural RAV	949.3	244.1	534.0	262.4
Difference	58.2	(3.6)	(5.2)	(49.3)

Source: Ofgem separation financial model. LECG analysis.

4.18 Benchmarking with revenue based on the sculpted RAV could bias the benchmarking results, because it does not properly reflect the scale of the business when measured on a current cost basis. A second effect is to distort the level of margin earned by each GDN on their current cost value. Differences between GDNs might not reflect differences in efficiency, but differences in margin.

[3] Ofgem. "*Separation of Transco's distribution price control, Final Proposal*". June 2003.

4.19 To account for this, we sought to adjust revenue to reflect returns based on the natural RAV. Ofgem agreed with the need to benchmark relative to the natural RAV. We identified a number of approaches to restate revenues. We discussed each approach with Ofgem. At the request of Ofgem, our approach reflected the absolute differences in the revenue calculated using the natural RAV and the sculpted RAV in 2002/03. This difference was then added or deducted from GDN revenues in 2006/07 to estimate revenues based on the actual RAV.

4.20 An alternative approach would have been to re-run Ofgem's separation model with and without the sculpting adjustments. From this, the difference between the RAVs as at 2006/07 could have been estimated. The difference would then need to be converted from 2000 to 2005/06 prices. Both Ofgem and LECG have assessed the impact of this alternative approach on the calculation of natural revenue. Our assessment indicates that the impact of price inflation is offset by differences in the roll forward.

4.21 Overall, the differences between the two approaches for calculating adjusted revenues are very small. Further, the impact this would have on our benchmarking is immaterial, and of a second order. We have tested the difference and found that our benchmarking conclusions are immaterially different under either approach. The table below reflects the adjustments made to 2006/07 revenue

Table 4: Adjustment to 2006/07 revenue

2006/07	NGGD	NGN	SGN	WWU
Allowed revenue based on sculpted RAV	1,135.7	266.0	586.1	227.7
Adjustment	(58.2)	3.6	5.2	49.3
Allowed revenue based on natural RAV	1,077.5	269.6	591.3	277.0

Source: Ofgem separation financial model. LECG analysis. In 2005/06 prices.

4.22 Adjusted revenue figures have been used in the rest of this report. We understand that a proportion of the allowable revenue relates to a return on investment and an allowance for capital expenditure. It could be argued that a revenue based benchmarking metric would penalise GDNs that have a lower level of capex or repex investment. A lower level of investment would result in

lower revenues. For a given cost level, lower revenues, all else being equal, might suggest poorer GDN performance, when it is expressed as a function of revenue.

4.23 We do not think our analysis is distorted by this for the following reasons. First, capex and repex investments are reviewed by Ofgem during the price control review. Inefficient investments would not be allowed, so revenues would not be inflated for this factor. Second, the impact of investment on the benchmarking metric is indirect and of a second order. Third, no GDN has demonstrated that this factor actually distorts the analysis, thus putting them at a disadvantage. Finally, we understand that Ofgem will perform sensitivity analysis to assess the impact of these factors prior to making its final determination of allowable costs.

Determination of material services

4.24 Ofgem has requested that we focus our work on material support services. We reviewed Ofgem's original list of support services and have agreed with Ofgem the scope of our work. We found that research and development ("R&D") is not a material cost activity. In a majority of the cases, no R&D has been planned over the price control period. We understand that many of the inputs into the gas distribution industry, such as pipes, represent mature technologies and are unlikely to benefit from further R&D. Most GDNs saw benefits relating to relatively low cost improvements in processes or smaller incremental development of current practices and technologies. We understand that some R&D costs are borne by the input suppliers. We also understand that R&D projects were more likely to occur in collaboration across all GDNs. This would allow a degree of cost and risk sharing. Consequently, we have not performed a detailed review of R&D costs.

Quantitative assessment of each support service area

4.25 A key benefit of the separation of the industry into eight GDNs is the potential for the collection of cost data from each GDN, allowing the comparison of performance across the GDNs. Benchmarking between GDNs should be a powerful tool in identifying potential cost inefficiency.

4.26 Once a consistent dataset across the GDNs was established, we benchmarked current and forecast cost performance. Our detailed approach, including the benchmarks and the metrics used, is explained by support service cost category

in each of the subsequent sections. However, the general steps we have undertaken include:

- determining the level of benchmarking;
- normalising support services costs;
- calculating GDNs benchmarks;
- selecting third party benchmarks;
- calculating potential efficiency savings; and
- calculating efficient cost forecast.

4.27 Each step is explained in more detail below.

Determining the level of benchmarking

4.28 We have performed a benchmarking analysis of support services costs as defined by Ofgem in the GDPCR BPQ Guidance Appendix 2. In general, we have not sought to perform our benchmarking at a more granular level for the following reasons:

- in most cases, the costs within each support cost area could be calculated with some certainty. We accept even at this level, some costs had to be allocated between areas. Performing benchmarking analysis across the GDNs at a more granular level, however, would almost certainly have required more subjective cost allocations. This would have increased the complexity of the analysis and introduced more comparability and consistency issues. This concern was raised by most of the GDNs during the cost visits and in subsequent correspondence;
- the cost category definitions adopted by Ofgem in the BPQ Guidance are generally consistent with the cost definitions used in third party benchmarks. Obtaining third party benchmarks at a more granular level would have been difficult in some areas and impossible in others;
- in some cases there are clear trade offs between the constituent components within a support services cost category. Benchmarking these components as an aggregate level internalises these trade offs and ensures there are no cost allocation biases; and

- a number of GDNs indicated that there were practical difficulties in producing cost data at a more granular level.

4.29 We recognise, however, that additional insights can be gained by analysing support services costs at a more granular level if the data is robust. We have performed these extra analyses where sufficient information is available. The results of these extra analyses have been adopted in calculating potential efficiency savings only when i) the trade-offs between the constituent components are immaterial; and ii) breaking down the support service costs into constituent components can be performed on a reasonable or objective basis. As noted above, in many instances, this additional analysis has been limited because the GDNs have been unable to provide detailed bottom up information.

Normalising support services costs

4.30 Comparing absolute costs levels may not be appropriate due to, for example, differences in operational scale. In performing our benchmarking analysis, therefore, we have normalised support services costs across the GDNs.

4.31 Best practice performance is represented in a number of forms in the studies we have obtained. The most common, are measures that compare overhead cost as a proportion of total company revenue or operating costs. Other measures compare the number of staff employed in the function as a proportion of the total number of staff employed.

4.32 It is important to select normalisation factors that reflect the cost drivers of each particular cost activity. Support services costs, however, are often driven by multiple cost drivers. Considering multiple drivers would be overly complex and would either require complex cost functions to be derived using econometric analysis, or support costs would need to be broken down into activities, and each activity would need to be benchmarked individually. We do not believe that sufficiently robust cost data exists at the activity level to benchmark costs on this basis. In some instances, costs are driven by more qualitative factors, which cannot be used in the normalisation process.

4.33 Our literature review indicated that it is normal to benchmark at a higher level, using the primary driver of costs. This approach is common in regulatory reviews of this nature. From our literature review, and from our discussions with industry experts and the GDNs, we found that the scale of an organisation's operation is

often the underlying driver of support services costs. We have identified revenue, operating costs and staff numbers as the suitable indicators of operational scale. In many cases, we consider all three metrics, but in general, we have found that adjusted revenue is the most reliable and consistent indicator.

4.34 An operating cost based metric can be distorted, for example, by business strategies and accounting policies (e.g. owned versus rented properties). An FTE based metric can also be affected by a number of factors, including outsourcing strategies. A GDN that chooses to outsource a higher proportion of its activities will have a lower headcount. This will affect the FTE based metric but might tell us little about the underlying level of efficiency. In general, therefore, we have placed less reliance on FTE based metrics.

4.35 In addition, many of the third party benchmarks that we have identified are calculated based on revenue, and not at a lower level of disaggregation. This also suggests that there is merit in benchmarking at this higher level. Revenue based metrics ensure consistency between the GDNs and the third party benchmarking metrics. Again, our approach is also supported by significant regulatory precedent.

4.36 In relation to some support services costs, the scale of operation may not be the key cost driver. We have adopted alternative normalisation factors in those cases. We have provided further details in the individual benchmarking sections where alternative normalisation factors have been adopted.

4.37 Our selection of the normalisation factor is based on our discussions with Ofgem, industry experts and regulatory precedent. If further support is given by the GDNs for alternative drivers then we will consider these during the next phase of the review (i.e. the work to update our reports using the 2006/07 actual GDN results).

Calculating GDNs benchmarks

4.38 We have compared NGGD's performance against the other GDNs, as they operate in highly comparable environments. We have calculated the GDNs benchmark based on the median and the top quartile normalised support services costs.

4.39 A median is the mid-point of a series of numbers. For example, if the sample contains four data points, the median is the mid point of the second and the third data points, when the data points are arranged in order.

4.40 The top quartile is the number that divides the top quarter of the sample from the rest of the sample. Where the sample contains four data points, the top quartile will lie between the first and the second data points, when the data points are arranged in ascending order. Academics have suggested a number of different formulae for calculating the position of top quartile, depending on the interval over which interpolation is performed[4]. These formulae are set out below, with n representing the number of data points in the sample, and the result of each formula representing the position of the top quartile figure:

a) Top quartile = (n + 1) / 4. Where there are four data points, the top quartile is the 1.25th data point (i.e. ¼ of the distance from the first to the second data point)[5];

b) Top quartile = (n + 2) / 4. Where there are four data points, the top quartile is the 1.5th data point (i.e. ½ of the distance from the first to the second data point)[6]; and

c) Top quartile = (n + 3) / 4. Where there are four data points, the top quartile is the 1.75th data point (i.e. ¾ of the distance from the first to the second data point)[7].

4.41 Where the sample size is small, as is the case with our analysis, the difference in results between these formulae becomes more apparent. In calculating the top quartile benchmarks for our report, we have used formula (c). As seen from the calculations above, formula (c) produces the most prudent top quartile benchmark (i.e. results in the lowest efficiency savings). This method of quartile

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4 A full discussion of the different approaches that can be adopted in quartile calculation can be found at *"A New Look at Quartiles of Ungrouped Data"*. Freund, J and Perles, B. The American Statistician, 41, 3, pages 200-203.

5 Newbold, Paul. *"Statistics for Business and Economics"*. 1994. Page 25. For illustration, in a sample with four data points, if the first data point has a value of £5 and the second data point £9, the 1.25th data point would be £6, i.e. £5 + 0.25 * (£9 - £5).

6 The formula is embedded in statistical software *Stata*.

7 The formula is embedded in *Microsoft Excel*.

calculation was adopted in the Deloitte TPCR Report. It is also embedded in the Microsoft Excel quartile calculation formula[8].

4.42 If Ofgem is minded to adopt an alternative method to calculate the top quartile, we will update our report accordingly. Adopting an alternative quartile methodology would, in general terms, result in higher potential efficiency savings under the high savings scenario.

Selecting third party benchmarks

4.43 Where possible, we benchmarked GDN support service costs against National Grid's regulated business support services. These costs were reviewed extensively by Deloitte as part of TPCR 2007-2012. The costs reviewed by Deloitte relate to all of National Grid's regulated businesses, that is, both distribution and transmission.

4.44 We have utilised the work performed by other consultants during the TPCR where possible. Specifically, we have relied on the work performed and reports produced by Deloitte, Marsh, Drivers Jonas and Compass.

4.45 Where possible, we have benchmarked the GDNs' support service costs against electricity distribution companies' support service costs, which were reviewed as part of the most recent electricity distribution price control review.

4.46 We have also benchmarked GDN support service costs against a set of external benchmarks. These benchmarks represent best practice, as seen across comparator companies of similar sizes. We have selected the external benchmarks based on the suitability of the comparator companies.

4.47 In a number of support services costs categories, we identified multiple third party benchmarks that could be used in our analysis. We sought to adopt the benchmarks that were the most comparable to the GDNs. Comparability is measured in terms of company size, industry, geographical region, etc. Different benchmarks are more comparable along different dimensions, and a degree of judgement is required in determining which dimensions are the most relevant, and accordingly, which benchmarks should be adopted. Where we have chosen

[8] The methodology adopted by the Microsoft Excel formula can be found at http://support.microsoft.com/?kbid=214072. Accessed 23 March 2007.

between alternative third party benchmarks, we have explained why we consider the chosen benchmark is the most appropriate.

4.48 For each cost category, we requested that the GDNs provide us with the most up to date comparator information they had or any benchmarking analysis they had performed[9]. Only NGGD provided us with additional sources of benchmarking information.

Calculating potential efficiency savings

4.49 For each overhead area, we present a range of possible adjustments. The use of third party evidence to determine a point estimate for efficient overhead costs may not take into account the range and variability of factors relevant to an exercise of this sort. Some of these factors are summarised above. As a result, we consider that it is more appropriate to reflect our results as a range, the bounds of which represent possible views as to the minimum and maximum levels of efficient overhead costs. The bounds of our range are represented by two scenarios.

4.50 In our low savings scenario, we compare the GDN's performance to the median benchmark performance. This scenario represents our conservative view of available cost savings. In our high savings scenario, we compare the GDN's performance to a more challenging (e.g. top quartile) benchmark. This scenario represents an alternative view and is likely to be towards the top end of the range of achievable cost savings. We believe that our approach is consistent with similar studies recently completed in the UK in other regulated industries. These targets were agreed in advance with Ofgem and are internally consistent with the work performed on the TCPR.

4.51 The third party studies we have identified present their benchmarking metrics in a number of different forms. Most data is presented in terms of the median or top quartile, but sometimes averages or cost ranges are presented. Benchmarks presented as a median or top quartile are generally preferred to benchmarks presented as an average, as they are less skewed by outliers in the underlying dataset. In addition, we prefer using a point benchmark to a benchmark presented as a cost range, as they allow better estimates of efficiency.

[9] The requests were made at the cost visits. These requests were also included in the meeting agendas.

Sometimes, a lack of information means this approach is not possible, and a cost range benchmark must be used.

4.52 We consider that a GDN should *at least* be able to achieve the GDN benchmarks, as the GDNs operate in highly comparable environments. Where an external benchmark presents a more challenging efficiency target, and where it is comparable to the GDN, this may indicate that the gas distribution industry, as a whole, is less efficient. In those cases, we adopt the third party benchmark in calculating both the low and high savings scenarios. We have applied this methodology consistently throughout our report unless we have concerns with the validity of particular third party metrics (which is prudent and avoids cherry picking benchmarks to produce higher efficiency conclusions). Based on the results of our benchmarking, we suggest a range of possible cost savings. Ofgem will need to consider whether selecting the third party benchmarks in these instances is appropriate.

4.53 The GDNs' costs, efficiency ratios and potential efficiency savings are presented to one or two decimal places. We have used the exact numbers provided to us by the GDNs (which might be expressed to more the two decimal places) in performing our calculations. Therefore, the results of any calculations performed using the figures presented in this report may be different to our reported results due to rounding errors.

4.54 We recognise that cost structures may be affected by economies of scale and we would normally seek to consider this in performing our analysis. However, we have been instructed by Ofgem to consider the GDNs as equals. Consequently, whilst we have used metrics to normalise the data, we have made no further allowance to adjust for economies of scale between the GDNs. We understand that during the GDN sales process, Ofgem outlined its policy in this regard and this policy has been reconfirmed in its fourth consultation document on the GDPCR[10].

4.55 However, where we have compared the GDNs to the third parties, we have taken company size, and therefore economies of scale, into consideration. Specifically, we have attempted to compare the largest GDN group to companies of a similar

[10] Ofgem. "*Gas Distribution Price Control Review Fourth Consultation*". 26 March 2007. Paragraph 3.68.

size. No further adjustment has been, in line with Ofgem's policy, for smaller GDN groups.

4.56 In the course of performing our analysis, we identified a number of additional factors that could influence the results of our benchmarking analysis. These factors include:

- regional factors, which include potential differences in operating costs across different geographical regions (e.g. between London and other parts of the UK);
- network specific factors, such as the shape of the network, the level of health and safety awareness in different local populations, etc.; and
- trade-offs between support and direct cost categories. For example, improvements in the supply chain might increase logistics costs but might also reduce direct material costs.

4.57 We have discussed these factors with Ofgem and the GDNs. Where specific examples arise, we have highlighted them in our qualitative review sections. Ultimately, the extent to which allowances are given for these factors is for Ofgem to decide. Therefore, in agreement with Ofgem, we have not made allowance for these factors in our benchmarking at this stage. However, we do not expect that these factors will have a material impact on final conclusions for the following reasons:

- most groups hold more than one GDN. We have benchmarked GDNs at the group level. As such, regional and network specific factors average out, in most instances;
- not all support services need to be located in urban locations or near the physical location of the network. There is a high degree of flexibility over where support services can be located. For example, NGGD provides support services to its London GDNs from Solihull;
- where appropriate we have explicitly adjusted for regional costs. Specifically, we have taken regional property differences into consideration when benchmarking property rental costs; and
- in most cases support services costs are not directly driven by network specific factors. Where they are driven by network factors, we note that

different networks have a range of specific factors, and these differences might be expected to average out;

- the GDN's have not provided evidence to demonstrate the trade off between higher support costs and lower direct costs. If this evidence had been provided, we would have performed a detailed assessment of the trade offs. In most instances, we do not believe there are material trade offs between support costs or between support costs and direct costs.

4.58 It is for these types of reasons we present our findings as a range. From this range, Ofgem will consider the scope for efficiency savings using a variety of methods. None of these methods by themselves will provide a precise picture of the scope for savings during the forthcoming price control, and each will require Ofgem to exercise a degree of judgement when determining the implications for NGGD. In doing so, however, Ofgem will consider the scope for wider trade-offs between cost categories and the degree to which allowances should be given for different factors. We understand that Ofgem has noted this in its GDPCR Fourth Consultation Document[11].

Calculating efficient cost forecast

4.59 We have performed a review of costs over the period of the price control. In producing a forecast for efficient cost levels, we have assumed that inefficiencies identified in the base year can be achieved immediately. This assumption has been adopted previously, for example in the Andersen TPCR report. We understand that Ofgem will separately consider how initial efficiency savings should be profiled, and whether a glide path to the efficiency frontier should be applied. Ofgem is consulting on this point in its consultation document and is inviting responses on the matter[12].

4.60 In producing a forecast of efficient costs, we have made the prudent assumption that the efficiency frontier does not move over time. In reality, the frontier will move over time, in line with total factor productivity improvements. We believe that the validity of this assumption should be reviewed during the second stage of our analysis.

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[11] Ofgem. "*Gas Distribution Price Control Review Fourth Consultation*". 26 March 2007. Section 3.52-3.90.

[12] Ofgem. "*Gas Distribution Price Control Review Fourth Consultation*". 26 March 2007. Paragraph 3.69-3.81.

4.61 The GDNs have typically built in real wage growth into their forecast costs for each area. Ofgem is considering the appropriate level of real wage growth that should be allowed over the price control period. In general, therefore, we have not included real wage growth into our forecasts of efficient support costs. In some cases, we have been unable to adjust forecasts for wage growth either because of our approach or because insufficient data was provided by the GDNs. We have highlighted these areas for further review by Ofgem.

Qualitative assessment of each support service area

4.62 Where support costs differed significantly from the efficient benchmark, we performed additional qualitative analysis to understand this difference. This review was based on information contained within the BPQ submissions. To the extent that the GDNs' BPQ submissions do not contain the relevant information, we have asked the GDNs to provide an assessment of the scope for efficiency gains, on a bottom-up basis, together with a broader assessment of the company's strategy.

4.63 In certain cases, in the BPQ submissions and the responses to our supplementary questions, GDN's have provided information on cost saving initiatives. In some cases, GDNs have also provided an assessment of their internal processes and their compliance with best practice. In certain cases, GDN's have performed their own functional benchmarking and have provided information on constraints to future efficiency. We have reviewed this information in detail, where it has been provided.

4.64 We have reviewed the GDNs' submissions to assess whether their submissions are robust, internally consistent and supported by detailed analysis. Where possible, we have also checked whether each GDN has identified and accounted for the inter-relationships between efficiency initiatives. In doing so, we sought to assess whether the GDNs have double counted any of the initiatives or have failed to take full account of the linkage between initiatives and their impact in different parts of the business. In doing this, we have attempted to gain qualitative support for the differences we have identified through our quantitative benchmarking exercise.

5 Total support service costs

Introduction

5.1 In this section, we provide an overview of NGGD's ownership structure, operations and overall efficiency. We perform a review of total support services costs and benchmark these against the other GDNs. Our findings are used to crosscheck our detailed function-by-function findings.

Overview

5.2 NGGD is a subsidiary of National Grid plc, which is a publicly listed company with no single majority shareholders. National Grid plc owns and operates both Gas Transmission and Distribution networks in the UK. In the remainder of this report, unless otherwise defined, NGGD refers only to the gas distribution business of NGGD.

5.3 After the sale of four of its GDNs in June 2005, NGGD continued to operate the East of England, London, North West and West Midland GDNs. In total, NGGD operates 82,000 miles of distribution pipelines and provides services to 11 million consumers[13]. Immediately after the GDN sales, the Business Services Strategic Review was carried out by NGGD. The review sought to eliminate duplication and to reduce company size to an optimal level, given the substantial reduction in NGGD's operation. NGGD stated that the exercise was facilitated by its flexible cost base, created through the business reorganisation after the National Grid/Transco merger[14]. NGGD stated that as such, the GDN sales did not result in major "stranded costs" or substantial increase in support services costs borne by NGGD's retained GDNs.

5.4 National Grid has a single Shared Services function, which provides business support services to its distribution, transmission and non-regulated businesses. The Shared Services function represents a distinct organisation within National Grid. National Grid expects that the adoption of a single shared services function will bring a number of benefits. It creates consistency, transparency and better control of costs, and may contribute to service improvements. The geographical centralisation of support service personnel (at Killingworth centre), and the

[13] National Grid Group plc, 2005/06 annual report.

[14] LECG site visit to NGGD office, 17 November 2006.

pooling of resources from all National Grid businesses may lead to economies of scale[15]. A single shared service function also allows individual businesses to benefit from the expertise and experience residing in other business units. National Grid expects that major cost savings and benefits should be realised by the end of 2008/09[16].

5.5 NGGD continues to provide various services to the iDNs following the GDNs. These services are specified under the New Services Agreements ("NSAs"). These agreements are to ensure the smooth transition of the distribution networks to the new owners, and are expected to terminate in the coming years. Some of the NSAs contain both direct operating activities and support services. For example, FOMSA covers both front office applications and information service support. The costs of providing NSA services are not shown within NGGD's allowable cost base, but are shown separately as costs of providing de minimis or excluded services.

5.6 NGGD also provides support services to xoserve, the transporter agency. The key support services relate to property management and information service support. Recharges to xoserve contained a fixed element, a variable element (i.e. additional costs if certain thresholds were exceeded) and a cost pass through element. The cost pass through element includes an allocation of overhead costs, but no mark-ups are charged. There is no explicit incentive scheme to minimise the costs incurred by National Grid, though National Grid considers that price pressures are generated through xoserve's periodical price negotiations[17].

5.7 Support service costs are not recorded/captured at the individual GDN level. National Grid's support service costs are either directly attributed or indirectly allocated to individual businesses and GDNs using the Unified Cost Allocation Methodology ("UCAM"). UCAM has been reviewed and approved by Ofgem[18]. Broadly, 50% of National Grid's total support service costs are allocated to NGGD. The efficiency of the support services costs of individual GDNs reflects

15 LECG site visit to NGGD office presentation. Page 5.

16 LECG cost visit to NGGD office, 17 November 2006.

17 LECG cost visit to NGGD office, 17 November 2006.

18 Ofgem. "*Review of National Grid Cost Allocation Methodology for the purpose of preparing Regulatory Accounts*". 2006.

the efficiency of National Grid's Shared Services function. We have agreed with Ofgem that our benchmarking analysis should be performed at the NGGD group level.

5.8 The costs of a number of National Grid's support services, including IS, property management and insurance, have been review by Deloitte as part of the TPCR 2007 to 2012. In performing our assessment of NGGD's support service costs, we have reviewed the findings in the Deloitte TPCR Report. We have also sought to understand any differences in the findings between the Deloitte TPCR Report and our analysis.

Total support services costs

5.9 This section provides a high-level review of NGGD's total support services costs. We first provide a breakdown of NGGD's total support services costs. We then summarise the high level benchmarking review we have performed. We also review NGGD's forecast of total support services costs. In doing so, we provide a summary of the key factors that underpin NGGD's forecasts.

5.10 NGGD's adjusted total controllable support services costs were £122.7m in 2006/07[19]. The costs are forecasted to increase in real terms by 9.5% between 2005/06 and 2006/07. The costs are forecasted to fluctuate in the range of £120m and £123m between 2006/07 and 2012/13. IS and property management costs represent the most significant cost categories. They account for approximately a quarter and a fifth of total support services costs respectively.

5.11 In each of the cost categories, we have made adjustments to ensure comparability of costs across the GDNs. One of these adjustments relates to the removal of the support service costs incurred by NGGD in the provision of de minimis activities. The overall total costs as reported by NGGD in the BPQ remain constant, as these costs were previously deducted in aggregate in the BPQ tables by a negative entry in the "other support activities" cost category. The LECG adjustment deducts the costs from each of relevant cost categories.

[19] Unless otherwise stated, all costs discussed in this report refer to controllable costs. R&D costs and other non-benchmarked costs (e.g. HR apprentice costs) are included in the analysis in this section, but are subsequently excluded from the individual benchmarking sections. As this section seeks to benchmark total support costs, we consider that it is appropriate to include these costs. Care however, is required when interpreting the results of this analysis.

5.12 Our analysis does not take into account the overhead credit relating to support functions for non-formula work that shown in the Work Management category, as the amounts were not thought to be material and the detailed allocation of the credit to each support cost category was not provided by NGGD. This will be factored into our analysis during the second phase of our review. The table below sets out our adjustments that have an impact on total support service costs.

Table 5: LECG adjustments on total support service costs

2005/06 prices	2005/06 (£m)	2006/07 (£m)
Total support service costs provided by NGGD	110.51	119.51
Add: Ofgem adjustments to reclassify support services costs previously included in repex	1.50	3.19
LECG adjusted costs	112.01	122.70

Source: NGGD. GDPCR 5 year BPQ Table B2.1. LECG analysis.

5.13 The table below provides a breakdown of NGGD's total support services costs into each support cost category.

Table 6: NGGD total support services costs breakdown after LECG adjustments

	2005/06 costs provided by NGGD (£m)	2005/06 adjusted costs* (£m)	2006/07 costs provided by NGGD (£m)	2006/07 adjusted costs* (£m)
IS	28.14	26.06	32.90	30.98
Finance, audit and regulation	12.79	13.89	15.54	18.22
Insurance	15.33	15.44	15.59	15.70
Property management	26.16	25.03	24.70	23.79
Corp centre & communications	11.57	8.54	10.67	7.94
HR	12.53	12.24	15.78	15.39
Legal	2.80	2.60	2.08	1.96
Procurement & logistics	6.18	7.22	6.62	7.74
R&D	1.00	1.00	0.97	0.97
Other support activities**	-6.00	0.00	-5.36	0.00
Total shared services	110.50	112.01	119.50	122.70

Source: NGGD. GDPCR 5 year BPQ Table B1.1. Note: As discussed in paragraph 4.24, R&D costs are not supported, and we do not consider the costs should be allowed. No further analysis has been performed on R&D costs. * After LECG adjustments to ensure cost comparability across the GDNs. ** Other support activities relate to the deduction of support service costs incurred by NGGD in the provision of de minimis activities, as discussed in paragraph 5.11 above.

5.14 In 2005/06, major restructuring took place in the industry following the GDN sales and, accordingly, some categories do not reflect normal costs levels. This is especially the case across the other GDNs. Therefore, we have used 2006/07 costs as the base year costs in our benchmarking analysis.

LECG benchmarking analysis

5.15 We have performed a high level benchmarking exercise of NGGD's total support service costs. The following table provides a comparison of total support service costs across GDNs, expressed as a percentage of adjusted revenue[20] in 2006/07.

[20] The adjustment to revenue, which occurs in most sections, was explained in Section 4.

Table 7: Total support services costs as a percentage of adjusted revenue

2006/07	NGGD	NGN	SGN	WWU
Adjusted total support services costs 2006/07 (£m)	122.7	21.3	31.8	23.9
Benchmarking metric	11.4%	7.9%	5.4%	8.6%

Source: All GDNs. GDPCR 5yr Table B1.1. LECG analysis.

5.16 We have based our low savings and high savings benchmarks on the median and the top quartile data points in the GDN sample. The table below summarises the potential efficiency gap based on adjusted total support costs as a percentage of revenue.

Table 8: NGGD total support service costs efficiency in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving £m
Low savings	8.3%	11.4%	0.73	33.6
High savings	7.3%	11.4%	0.64	44.3

Source: LECG analysis.

5.17 NGGD's total support services costs appear inefficient, in comparison the other GDNs benchmarks in 2006/07. Under the low savings scenario, our analysis suggests a potential annual efficiency saving of £33.6m. Under the high savings scenario, our analysis suggests a potential annual efficiency saving of £44.3m.

LECG review of forecasted cost movement

5.18 We have also reviewed NGGD's total support services costs forecast over the period 2005/06 to 2012/13. The table below shows the forecast trend in costs.

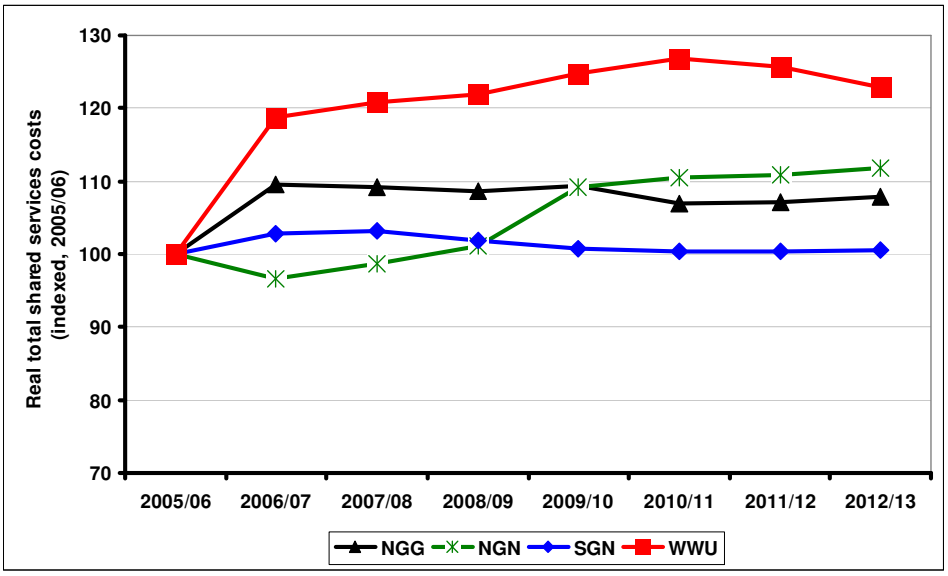
Table 9: NGGD adjusted forecast support services costs

£m, 2005/06 prices	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Support costs per BPQ	110.5	119.5	122.2	117.2	117.9	115.2	115.2	116.1	(0.5%)
Adjustments*	1.5	3.2	0.0	4.6	4.6	4.7	4.7	4.8	
Adjusted support costs	112.0	122.7	122.3	121.8	122.5	119.8	119.9	120.9	(0.2%)
Annual growth rate		9.5%	(0.4%)	(0.4%)	0.6%	(2.2%)	0.1%	0.8%	

Source: NGGD. GDPCR 5yr Table B2.1. LECG analysis. Note: * Key LECG adjustments relates to the reclassification of finance costs and L&P costs previously included in repex. Further details of the adjustments are included in the individual cost benchmarking sections, and are summarised in the table above.

5.19 The figure below shows the forecast trend of support service costs for each of the GDN groups, after LECG adjustments, over the price control period.

Figure 2: GDNs adjusted forecast support services costs



Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

5.20 Total support services costs are forecast to increase by £10.7m between 2005/06 and 2006/07. Approximately £4.8m of the increase is due to the higher IS, resulting from the termination of FOMSA between NGGD and the iDNs, in November 2006. NGGD expects to continue incurring certain costs relating to FOMSA during 2006/07 and 2007/08, that is, after the termination of the NSA with the iDNs. These costs will no longer be recharged to the iDNs and will have to be borne by NGGD.

5.21 HR costs are forecasted to increase by £3.2m between 2005/06 and 2006/07 because of an increase in training costs. NGGD forecasts the number of trainees to increase from 50 in March 2005 to 100 in March 2006, and 150 in March 2007. NGGD states that the increase is driven by its aging workforce and the nationwide skills shortage in the engineering section.

5.22 Finance, audit and regulation costs are expected to increase by approximately £4.3m between 2005/06 and 2006/07. Approximately £2.1m of the increase is due to the increase in the scope of activities performed by the finance support service. These activities were previously performed by the work management function or were outsourced to Fulcrum Connection. Regulation costs are also expected to increase by approximately £1m due to the transmission and distribution price control review.

5.23 Between 2008/09 and 2012/13, total support service costs are expected to fluctuate between £120m and £123m. IS support costs are expected to decrease at an average annual rate of approximately 5% due to various efficiency improvement initiatives, such as the implementation of a new enterprise resources planning system. Property management costs are also forecasted to decrease, at an average annual rate of 1.7%, due to costs savings initiatives and process improvements. These are offset by an expected increase in insurance costs, at an average of 5% per annum, driven by higher insurance premiums. Other support service costs are expected to remain stable over the period. NGGD does not foresee any further events that will have a significant impact on total support services costs.

Conclusions

5.24 Our benchmarking analysis shows that NGGD's total support services costs are inefficient, in comparison to the other GDNs, in 2006/07. Under the low savings

scenario, our analysis suggests a potential annual efficiency saving of £33.6m. Under the high savings scenario, our analysis suggests a potential annual efficiency saving of £44.3m.

5.25 Total support service benchmarking can only provide a broad indicator of performance. It lacks the granularity of the more detailed reviews we have performed, on a function-by-function basis. It is also constrained to a comparison across GDNs. No external benchmarking has been performed. For these reasons, this analysis can only be used as a high-level crosscheck to our more detailed review, which is provided in the subsequent sections.

5.26 Our findings indicate that NGGD is inefficient when compared to the other GDNs. The absolute level of potential savings identified from this analysis should be used with care. When performing the analysis at the cost category level, we adjusted the costs to ensure comparability. In some cases only a sub-section of costs in a support cost category were benchmarked. Our analysis indicates that even if these adjustments were applied to NGGD's total costs, the findings would still indicate that NGGD was inefficient when compared to the other GDNs.

6 Information systems

Introduction

6.1 In this section, we set out our findings in relation to NGGD's information system ("IS") costs. We first provide an overview of the activities performed by NGGD. We then summarise our benchmarking review of controllable IS support costs and total IS costs (i.e. support operating costs plus capital costs). We also provide a review of costs over the period 2005/06 to 2012/13 and provide a high-level qualitative review of the factors underlying the forecasts. Finally, we provide our conclusions on the efficiency of NGGD in relation to IS costs.

6.2 We have not performed a detailed review of the validity, or efficiency of specific IS capital projects. Key capital projects have been reviewed in detail by one of Ofgem's technical consultants (i.e. PB Power). At this stage, our work does not include a determination of whether specific IS capex should be allowed for price control review purposes, or whether they should be treated as a cost to shareholders. When PB Power finalises its conclusions, these will need to be compared and merged with our findings.

6.3 We have not performed any historical trend analysis. In general, robust and consistent historical data has not been made available. In part, this is due to the sale of GDNs in June 2005. A similar conclusion was reached by Ofgem in its review of accounting issues.

Overview

6.4 To ensure cost consistency across all the GDNs, we obtained a breakdown of IS support costs by activity. We have reviewed this breakdown and, where appropriate, we have adjusted the costs to ensure comparability across GDNs. We have also sought to ensure comparability with Ofgem's definition of IS costs, which was included in its BPQ Guidance document.

6.5 NGGD confirmed that its IS function provides services in the following specific areas: help desk; data centre; application support; non-operational telecoms; establishing and managing IS applications; establishing and managing infrastructure projects; and assessing IS investment. We consider that the activities performed by NGGD and the other GDNs are sufficiently comparable for benchmarking purposes. NGGD could not provide a breakdown of costs by

activity since they are not recorded to that level of granularity. The table below provides a summary of NGGD's IS support costs.

Table 10: Activities performed by NGGD's IS support function

Controllable operating activities	2006/07 £m
Total costs provided by NGGD	32.9
Adjustment to remove support service costs associated with de minimis activities from regulated controllable opex*	(1.9)
Adjusted costs	31.0

Source: NGGD. LECG adjusted. * Further details of the adjustments to remove costs associated with de minimis activities from controllable opex are included in Section 5.

6.6 IS support costs for 2006/07 totalled £31.0. In real terms, IS support costs are forecasted to decrease at an average annual rate of 3.9% to £24.3m by 2012/13. IS capex is expected to fluctuate significantly within the price control period. It is expected to peak in 2007/08 at £32.0m, before falling to £17.0m in 2009/10. IS capex is then expected to increase to around £27m at the end of the price control period.

6.7 We have compared the list of activities performed by NGGD's IS support function to those performed by the other GDNs, and conclude that they are comparable. We have not performed detailed, bottom up review of NGGD's IS capex. PB Power has considered the efficiency of individual IS projects.

6.8 We have performed our analysis of National Grid's IS costs using a number of approaches. We have reviewed the assessment performed by Compass Management Consulting on National Grid's IS spend. The review was prepared as part of the TPCR 2007-2012. We have also benchmarked NGGD against third party and other GDNs benchmarks.

Review of Compass IS Report

6.9 National Grid's IS costs have been reviewed in some detail by Compass as part of the 2007-2012 TPCR. The key findings and the conclusions of the Compass IS review are summarised below.

6.10 Compass reviewed National Grid's IS support and project (capex) costs against data from a reference group of companies selected from Compass' database. Compass benchmarked 2004/05 costs for application development, support and

maintenance costs using various metrics. The review also performed a detailed assessment of key IS projects and infrastructure services. The report did not provide details of the reference group, so we are unable to utilise the dataset to benchmark the IS related costs of NGGD and the iDNs.

6.11 National Grid outsources approximately 90% of its IS requirements. Compass did not find evidence of duplication of effort between the outsourcing services providers and National Grid where IT processes had been outsourced [21]. Compass concluded that National Grid's IS expenditure was generally efficient compared to the reference group. However, the report did identify the following potential savings[22]:

- £4m per annum from an adjustment to the proportion of spending on application development;
- £4.2m per annum from improved use of system integrators;
- £0.7m per annum from reducing the proportion of contractors, through the replacement of contractors with permanent staff (as costs of permanent staff are generally lower); and
- £11m [23] savings between 2007/08 and 2011/12 from possible costs reductions from the CSC contract, in addition to the savings already included in the forecast by National Grid. Compass concluded that National Grid's IS forecast cost trend had assumed an unachievable level of efficiencies in the earlier years (up to 2008/09) but underestimated potential savings in later years (2009/10 onwards). The £11m aggregate saving adjustment by Ofgem therefore represents the net of large savings in later years reducing the allowable cost base, and the reversal of some National Grid forecast efficiencies in earlier years, which increase the cost base.

6.12 In the Ofgem TPCR proposals, the first two bullets above were considered potential IS capex savings. The last two bullets were considered potential IS support costs savings. If Ofgem extrapolated by one year the savings trend indicated by the data used to derive the £11m savings identified in the last bullet

[21] Compass IT Report, ibid.

[22] Compass IT Report, ibid.

[23] Ofgem TPCR model (final proposal).

point above, the level of savings over the GDPCR period (2008/09 to 2012/13) would be £20m. The Compass IS Review, considered IS costs across the whole of National Grid's regulated business. Approximately half of the savings identified relate to National Grid's distribution business (the remainder apply to the transmission business). We have used the relevant findings of the Compass IT review to corroborate the results of our benchmarking analysis below. The Compass IS review identified a cumulative over-spend of £58m in IS over the TPCR price control period. The majority of these savings are IS capex related.

Benchmarking analysis

6.13 IS support is driven by the scale of a GDN's operation and the number of users being serviced by the IS support function. The GDNs commented that a number of other factors, such as remote accessibility and the number of systems being supported, may also affect IS support costs. We believe, however, that many of these factors are in turn driven by operational scale or user numbers.

6.14 Other alternative drivers could distort the efficiency analysis. For example, it could be argued that the number of systems and the level of support costs are related. However, the ratio of costs to the number of systems tells us little about underlying efficiency. A company with a high number of systems would, holding other things constant, have a low benchmark ratio, suggesting it is efficient. However, it might actually have an inefficient number of systems, some of which could be integrated with other systems, or removed altogether.

6.15 For these reasons, we have used operational scale and user numbers as the most appropriate normalisation factors.

6.16 We have reviewed third party reports, including the Compass IT Review. Based on our review of the relevant reports, we believe the following metrics can be used to benchmark IS costs. First, we have separately considered IS support costs and total IS costs as a percentage of adjusted revenue. We consider revenue to be a good indicator of the relative size of each GDN. Second, we have considered IS support costs per FTE.

6.17 It has been difficult for us to select a single year to perform our benchmarking across the GDNs. Costs in 2005/06 did not represent a steady state year, for reasons explained previously. In addition, the GDNs have IS projects starting at

differing times over the price control period. The iDNs have IS projects to develop their own front office systems, their system operation capabilities, and their back office systems. An increase in IS capex can be expected to be followed by a period of higher IS support costs due to, for example, users' unfamiliarity with the new systems and initial teething issues. Using any single year to benchmark IS support costs and total IS costs could distort our findings. In general, the distortions resulting from cyclical cost movements could be minimised by benchmarking average costs over the period.

6.18 We have performed our benchmarking analysis using average costs over the period 2005/06 to 2012/13 costs. This represents the longest period we can use based on the information included in the BPQ submission, and would therefore be best able to smooth out the cost anomalies of any single years. Adopting the longer period also allows our analysis to account for the differences in investment timing across the GDNs.

6.19 The table below summarises the data we have used to calculate the benchmarking metrics for NGGD.

Table 11: NGGD data used to calculate IS benchmarks

Metric description	Value
Average adjusted revenue 2005/06-2012/13 (£m)	1,478.2
Average adjusted IS support costs 2005/06-2012/13 (£m)	27.7
Average adjusted total IS costs 2005/06-2012/13 (£m)	50.3
IS function FTE 2006/07	148.7
Total GDN FTE 2006/07	5,040.2

Source: NGGD. GDPCR 5 year BPQ Table A1, B1.1, B2.1, B3.1 FTE, C5. LE-NGG-035. LECG adjusted. Average adjusted revenue has been calculated using the revenue figures provided by the GDNs in their BPQ submissions, adjusted to reflect the differences between the natural and sculpted RAVs.

6.20 Unless otherwise defined, we have based our low savings and high saving benchmarks on the median and the top quartile data points in the benchmarking sample.

Benchmarking IS support costs

6.21 We have compared NGGD's total IS costs against the other GDNs and third party benchmarks. We have identified a number of independent studies that provided third party benchmarks for IS support related costs. These studies include:

- the Corporate Forum (tif), benchmarking reports 2004-2005, prepared for BAA plc ("Corporate Forum Report"), which benchmarks IT performance metrics for its 29 subscriber organisations. The report provides information on IT operating costs as a percentage of revenue, and IT operating costs per user. The survey does not include depreciation and IT capex, and does not benchmark data by industry sector;
- Gartner Western Europe IT Spending and Staffing Survey, 2005 ("Gartner Survey"), which provides benchmarking data of IT operating costs, including depreciation, based on IT operating costs as a percentage of revenue metric. This report covered 403 organisations based in Western Europe and 12 different industries. The responding organisation's average annual revenue was USD $200.3m; and
- the National Computing Centre's (NCC) Benchmark of IT spending, 2005 ("NCC Report"), which reviewed IT spend in NCC member organisations. We have used the data for the "Transport, Utilities & Communications" industry sector, which comprises responses from 11 organisations. The data for the full report included 217 responses covering ten different industry sectors. Average annual turnover was £175.1m, with an average of 2,027 end users and combined total IT spending of £700m. The NCC Report provides information on the number of IT staff per 1,000 users.

6.22 The benchmarking data provided in the Corporate Forum Report and the Gartner Report was used in CAA's initial price control proposals for Heathrow, Gatwick and Stansted airports ("CAA Proposals").[24] We do not have access to the detail used to compile this benchmark data. The benchmarking data was used to assess BAA's operating IT activities, which included infrastructure and application hosting (e.g. data centres), and desktop and end users support. These activities are comparable to the IS activities performed by the GDNs.

[24] KPMG LLP. "*Civil Aviation Authority, Scrutiny of BAA Plc's IT Costs*". December 2006.

6.23 The GDNs' cost data excludes depreciation. This is consistent with the data contained within the Corporate Forum Report. The Gartner Report data, however, includes depreciation. Therefore, we have used the Corporate Forum Report as our primary third party benchmark of IS support costs expressed as a percentage of revenue and IS support costs per user. We have used the NCC Report as our third party benchmark of the number of IS staff per 1,000 users.

IS support costs as a percentage of revenue

6.24 We have compared NGGD's IS support costs as a percentage of revenue against the other GDNs. We have also compared this metric against the median data point from the Corporate Forum as quoted in the CAA Proposals. The table below set out the GDNs average adjusted IS support costs as a percentage of average adjusted revenue metric.

Table 12: Benchmarking average IS support costs across all GDNs

2005/06-2012/13	NGGD	NGN	SGN	WWU
Average adjusted IS support costs (£m)	27.7	7.3	10.4	7.8
Benchmarking metric	1.9%	2.2%	1.3%	2.4%

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

6.25 The table below compares these benchmarks to NGGD's performance, and summarises the potential efficiency gap.

Table 13: NGGD performance against GDNs based on average adjusted IS support costs as a percentage of average adjusted revenue

Benchmark	Benchmark metric	NGGD ratio	Efficiency score	Implied saving £m
Low savings	2.0%	1.9%	1.08	-
High savings	1.7%	1.9%	0.93	1.96

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted. LECG analysis.

6.26 NGGD's average IS support costs appear efficient in comparison to the GDN benchmark under the low savings scenario. Under the high savings scenario, our analysis indicates a potential average annual saving of £1.96m. This saving is consistent with the Compass IS Review findings described in paragraph 6.11, which shows that the potential savings for NGGD over the GDPCR could be half of £20m (i.e. £10m).

6.27 The table below sets out the IS support costs as a percentage of revenue for the companies included in our third party benchmark and NGGD's performance against this benchmark.

Table 14: NGGD performance against third party study benchmarks

Benchmark	Benchmark ratio	NGGD ratio	Efficiency score	Implied saving £m
The Corporate Forum	2.4%	1.9%	1.28	-

Source: The Corporate Forum. NGGD GDPCR 5 year BPQ Table A1, B1.1, B2.1. LECG analysis.

6.28 NGGD's average adjusted IS support costs appear efficient in comparison to our third party benchmark.

6.29 Where we have more than one benchmark, we have applied our decision methodology described in paragraph 4.29 to determine which savings to apply to the GDN cost base. Ofgem expects that the GDNs should at least be able to achieve the benchmarks set by the other GDNs. We have therefore applied potential savings of £1.96m to NGGD's IS support costs under the high savings scenario.

IS support cost per FTE

6.30 We have compared NGGD's average IS support costs per FTE against the other GDNs and against an external benchmark. The table below set out the GDNs average adjusted IS support cost per FTE metric.

Table 15: Benchmarking IS support costs across all GDNs

2006/07	NGGD	NGN	SGN	WWU
Average adjusted IS support costs (£m)	27.7	7.3	10.4	7.8
Benchmarking metric	5,491	6,091	3,179	6,762

Source: All GDNs. GDPCR 5 year BPQ Table B2.1, B3.1 FTE. LECG adjusted. Note: We have used the GDNs' 2006/07 FTE number in calculating the above metric. A complete set of GDN FTE forecast is not available to us.

6.31 The table below compares these benchmarks to NGGD's performance, and summarises the potential efficiency gap.

Table 16: NGGD performance against GDNs based on average adjusted IS support costs per FTE

Benchmark	Benchmark ratio (£/FTE)	NGGD ratio (£FTE)	Efficiency score	Implied saving £m
Low savings	5,791	5,491	1.05	-
High savings	4,913	5,491	0.89	2.91

Source: All GDNs. GDPCR 5 year BPQ Table B2.1; B3.1 FTE. LECG adjusted. LECG analysis.

6.32 NGGD's costs appear less efficient in comparison to the other GDNs benchmark under the high savings scenario, with an average potential annual savings of £2.91m. Under the low savings scenario, NGGD's costs appear efficient.

6.33 The table below sets out IS support costs per FTE for companies included in our third party benchmark and NGGD's performance against this benchmark.

Table 17: Third party IS support costs benchmarking based on IS support costs per FTE

Benchmark	Benchmark ratio (£/FTE)	NGGD ratio (£/FTE)	Efficiency score	Implied saving £m
The Corporate Forum	6,541	5,491	1.19	-

Source: The Corporate Forum. CAA initial price control proposals. December 2006. NGGD GDPCR 5 year BPQ Table A1, B1.1, B2.1, B3.1 FTE. LECG analysis.

6.34 NGGD's IS support costs appear efficient, based on average IS support costs per FTE, in comparison to third party benchmarks.

6.35 NGGD appears less efficient when compared to available FTE benchmarks. However, this metric is highly sensitive to relative levels of FTEs. The FTE metric could unfairly penalise companies with low FTEs, especially if they have extensive outsourcing arrangements. Outsourcing direct operations, or employing highly trained and efficient staff (i.e. which would lower the number of FTEs), would increase IS support costs per FTE, but would say little about the relative efficiency of IS support. For this reason, we have not used the FTE metric to calculate efficiency savings.

IS FTE per 1000 users

6.36 We have compared NGGD's number of IS department FTEs per 1,000 users against the other GDNs. We have also compared this metric against the median

data point from NCC as quoted in the CAA Proposals. The table below sets out the GDNs' IS function FTE per 1000 users metric.

Table 18: Benchmarking IS support FTEs across all GDNs in 2006/07

2006/07	NGGD	NGN	SGN	WWU
IS function FTE	148.7	10.0	36.0	8.0
Benchmarking metric	29.5	8.3	11.0	6.9

Source: All GDNs. GDPCR 5 year BPQ Table B2.1, B3.1 FTE. Supplementary question responses. LECG adjusted. Note: FTE forecasts for each GDN have not been provided.

6.37 The table below compares these benchmarks to NGGD's performance.

Table 19: NGGD performance against GDNs based on IS FTEs per 1,000 users

Benchmark	Benchmark ratio 2006/07	NGGD ratio 2006/07	Efficiency score	Implied saving (IS FTE)
Low savings	9.7	29.5	0.33	100.1
High savings	8.0	29.5	0.27	108.6

Source: All GDNs. GDPCR 5 year BPQ Table B2.1; B3.1 FTE. LECG adjusted. LECG analysis.

6.38 NGGD's IS function FTE level appears less efficient, in comparison to the other GDNs. Under a low savings scenario, our analysis indicates a saving of 100.1 IS FTEs. NGGD has an annual staff cost of approximately £37,500 per FTE[25]. This implies an annual saving of £3.75m (i.e. £37,500 x 100.1). Under a high savings scenario, our analysis indicates a saving of 108.6 IS FTEs. Based on an annual cost of £37,500 per IS FTE, this implies an annual saving of £4.07m (i.e. £37,500 x 108.6).

6.39 We have compared NGGD's performance, based on IS function FTE per 1,000 users, against companies in the NCC report. The table below details NGGD's performance against these benchmarks.

[25] National Grid IS staff costs 2006/07 is forecasted to be approximately £12m and staff number of 320 FTE. Average staff costs are approximately £37,500 (£12m / 320). NGGD has provided an average staff cost figure of £50,000 in its initial response to our draft report. The figure was not adopted, as it is unsupported. Adopting an average staff cost of £50,000 would result in higher efficiency savings.

Table 20: IS support costs benchmarking based on IS function FTE per 1,000 users against third party benchmark

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving (IS FTE)
Low saving	32.3	29.5	1.09	-
High saving	20.0	29.5	0.68	47.9

Source: NCC. LECG analysis.

6.40 Based on the IS function FTE per 1,000 users metric, NGGD's IS support costs appear efficient, in comparison to the third party benchmark, under the low savings scenario. Under a high savings scenario, our analysis indicates a saving of 47.9 IS FTEs. This implies an annual saving of £1.80m (i.e. £37,500 x 47.9).

6.41 As discussed above, FTE based metrics are influenced by outsourcing arrangements. The metric is also a partial productivity factor, and says little about the cost (in terms of wages) or quality (in terms of the number of people required to do a task) of IS staff, or the efficiency of non-staff costs.

6.42 In addition, National Grid provided IS support to the GDNs during 2006/07 and may continue to do so up to 2010/11. Some of the IS support services to the iDNs are provided by staff who will not appear in the iDNs' headcount, as they are National Grid employees, recharged to the GDNs via a composite NSA charge. This would decrease National Grid's relative performance, and increase the iDNs' performance, when using an FTE per users metric. This does not reflect differences in underlying efficiency. As such, we do not base our conclusions on FTE based metrics.

Benchmarking total IS costs

6.43 We have compared NGGD's total IS costs against the other GDNs and third party benchmarks. We have identified a number of independent studies that provide third party benchmarks. These studies include the NCC Report and the Gartner Western Europe IT Spending and Staffing Survey summarised above.

Average adjusted total IS costs as a percentage of average adjusted revenue

6.44 We have compared NGGD's average adjusted total IS costs as a percentage of average adjusted revenue against the other GDNs, as shown below.

Table 21: Benchmarking total IS costs across all GDNs

2005/06-2012/13	NGGD	NGN	SGN	WWU
Average adjusted total IS costs (£m)	50.3	15.2	16.5	15.9
Benchmarking metric	3.4%	4.5%	2.1%	5.0%

Source: All GDNs. GDPCR 5 year BPQ Table B2.1; C5. LECG adjusted.

6.45 The table below compares these NGGD's performance to the GDN benchmarks.

Table 22: NGGD performance against GDNs based on average adjusted total IS costs as a percentage of average adjusted revenue

Benchmark	Benchmark	NGGD ratio	Efficiency score	Implied saving £m
Low savings	4.0%	3.4%	1.17	-
High savings	3.1%	3.4%	0.91	4.69

Source: All GDNs. GDPCR 5 year BPQ Table B2.1, C5. LECG adjusted. LECG analysis.

6.46 Based on our analysis, NGGD's total IS costs appears efficient against the other GDNs under a low savings scenario. Under the high savings scenarios, our analysis implies a potential average annual efficiency savings are £4.69m. As a percentage of costs, the benchmarking of total IS costs suggest a similar level of saving as the benchmarking of IS support costs.

6.47 The table below sets out the total IS costs as a percentage of revenue for the companies included in the NCC Report.

Table 23: NGGD performance against third party study benchmark

Benchmark	Benchmark ratio	NGGD ratio 2005/06-2012/13	Efficiency score	Implied saving / (efficiency) £m
Low saving	3.0%	3.4%	0.88	5.94
High saving	0.8%	3.4%	0.24	38.46

Source: CAA initial price control proposals. December 2006. LECG analysis.

6.48 Our analysis indicates that NGGD's total IS costs, as a percentage of revenue, are inefficient in comparison to the third party benchmark in both in both scenarios.

6.49 NGGD forecasts a significant increase in IS project costs between 2006/07 and 2009/10 due to the refreshment of field force systems and other major UK distribution systems. In addition, NGGD are implementing a new ERP system in the shared services area over the price control period. The third party benchmark includes companies at all stages of their lifecycle. Companies like NGGD, which are currently in a high IS investment stage are likely to appear inefficient in comparison to companies not at this stage. This may explain NGGD's performance against the third party benchmark in the high savings scenario.

6.50 Performing top down benchmarking on IS capex is very difficult, due to the variety of issues (e.g. several large projects, start up investment, etc). Intuitively, we may expect some similarity between the iDNs. The figures, however, show that there is significant difference between the IS capex forecasts. These differences arise from a conflation of several factors including the timing of capex projects, the scale of capex investment, different contracting arrangements [redacted], etc. Ofgem should assess the validity of our findings against these factors. The potential savings identified by our benchmarking of total IS costs will be corroborated against the findings of PB Power's bottom up review when the results of their work are available.

Cost trend and qualitative review

6.51 We have reviewed NGGD's IS support costs over the price control period. The table below shows the forecast trend.

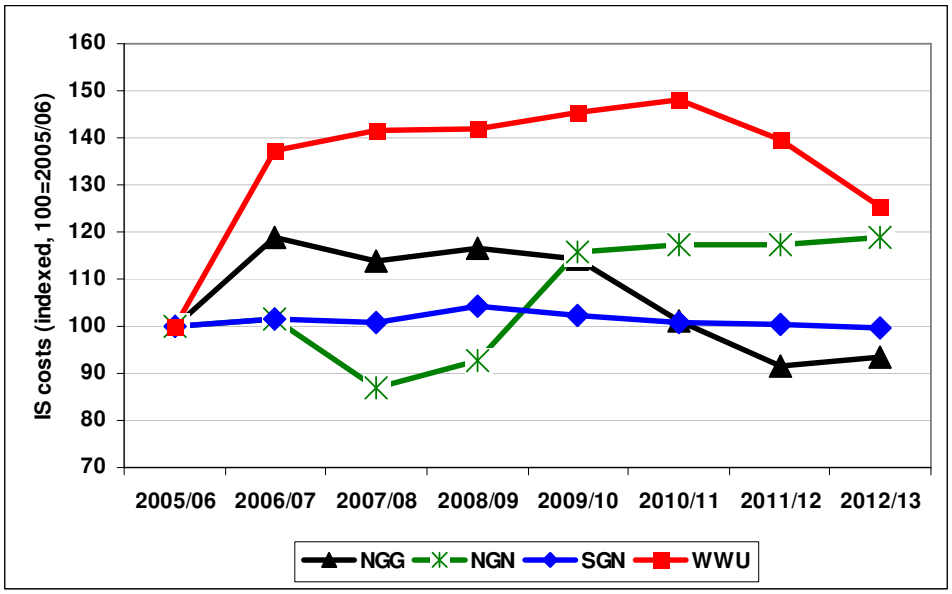
Table 24: NGGD forecast adjusted IS support costs

2005/06 prices	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
IS support costs per BPQ (£m)	28.1	32.9	35.1	31.5	30.9	27.3	24.7	25.2	(4.3%)
LECG adjustments* (£m)	(2.1)	(1.9)	(5.3)	(1.2)	(1.1)	(1.0)	(0.9)	(0.9)	
Adjusted IS support costs (£m)	26.1	31.0	29.7	30.3	29.8	26.3	23.8	24.3	(3.9%)
Annual growth rate		18.9%	(4.1%)	2.1%	(1.9%)	(11.5%)	(9.6%)	2.2%	

Source: NGGD. GDPCR 5yr Table B2.1. LECG analysis. * LECG adjustments relate to removal of property management costs associated with de minimis activities. 2007/08 LECG adjustments relate to the removal of £4m FOMSA related one off costs.

6.52 The figure shows the forecast trend of IS support costs for each of the GDN groups, after LECG adjustments, over the price control period.

Figure 3: GDNs adjusted forecast IS support costs



Source: NGGD. GPDCR 5 year BPQ Table B2.1. LECG adjustments.

6.53 IS support costs are higher in 2006/07 to 2009/10 in comparison to subsequent years. NGGD explained the forecast trend in IS support and IS Capex costs in their responses to supplementary questions LE-NGG-018, LE-NGG-019, and LE-NGG-022. NGGD provided the following table (which breaks down IS costs to a more granular level) to support its explanation of the movements in IS costs. The totals shown in the table are before LECG's adjustments to the figures.

Table 25: IS support costs movements

£m, 05/06 prices	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Underlying opex	27.5	30.3	31.5	26.9	25.7	25.1	22.1	21.7
UKD project opex	0.1	2.6	3.1	3.0	3.5	0.5	1.3	2.4
UKD incremental RTB	0.5	0.0	0.5	1.6	1.7	1.7	1.3	1.1
Total UKD IS opex	28.1	32.9	35.1	31.5	30.9	27.3	24.7	25.2

Source: NGGD. Response to question LE-NN019. Prior to LECG adjustments.

6.54 The movements of individual IS support costs categories are explained in the paragraphs below.

Underlying opex

6.55 Underlying opex represents the underlying costs of providing IS support. The increase in underlying opex between 2005/06 and 2007/08 (i.e. by approximately £4m) is due to the end of the FOMSA NSA. After FOMSA termination, NGGD is unable to reduce the costs associated with the provision of the FOMSA services immediately. These costs were previously recharged to the iDNs and therefore would have not have appeared as costs incurred by NGGD. After November 2006, these costs will be borne solely by NGGD.

6.56 NGGD has not provided further detail to support these costs. These costs appear to be related to a reduction in scale. As such, these should be excluded from NGGD's allowable cost base for 2007/08. As seen in the table underlying IS support opex falls back to below 2005/06 levels by 2008/09 and continues to fall thereafter to the end of the forecast period. The increase occurs before the start of the price control, so we have not adjusted costs for this factor.

6.57 NGGD expects some further efficiency improvement over the price control period [26]. For example, we understand that NGGD is in the process of implementing a new enterprise resources planning system, from SAP, to replace the multiple back office systems it inherited from the National Grid-Lattice merger.

[26] NGGD. Response to question LE-NGG-019.

NGGD estimated that these initiatives would provide an annual underlying IS opex saving of £4.6m[27]. Approximately half of this saving relates to distribution. This saving has been built into the underlying opex forecast shown above.

UKD project opex

6.58 This refers to the operating expenditure associated with IS projects planned in the forecast period, such as the refreshment of field force solutions and other major distribution systems. The project opex associated with these activities accounts for £3m of the increase between 2005/06 and 2007/08[28]. The level of project opex falls in 2010/11 as the refreshment cycle is completed.

UKD Incremental RTB

6.59 These refer to the incremental IS costs of "running the business" incurred by NGGD from 2008/09 onwards as new systems and functionality come on stream from the IS capex program.

6.60 We have also reviewed NGGD's forecast total IS costs for the price control period. The table below shows the forecast trend.

Table 26: NGGD forecast adjusted total IS costs

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Adjusted IS support (£m)	26.1	31.0	29.7	30.3	29.8	26.3	23.8	24.3	(3.9%)
IS capex (£m)	17.0	23.6	32.0	18.5	17.0	19.6	26.4	26.8	2.1%
Total IS costs (£m)	43.1	54.6	61.7	48.8	46.8	45.9	50.2	51.1	(1.1%)
Annual growth rate		26.8%	13.1%	(20.9%)	(4.2%)	(1.8%)	9.3%	1.8%	

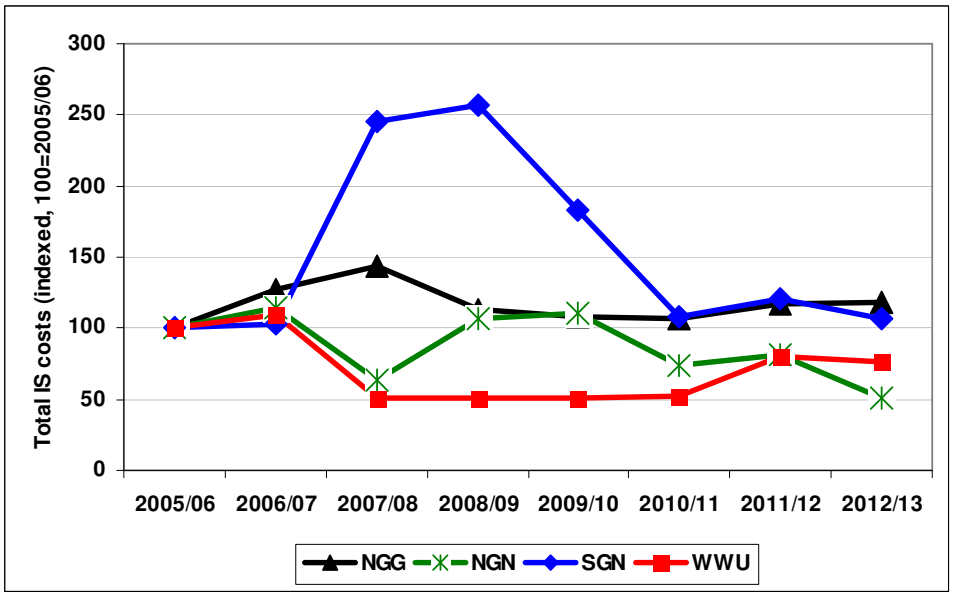
Source: NGGD. GDPCR 5yr Table B2.1; C5. LECG analysis. * The IS capex in 2005/06 has been adjusted by £14.1 as these costs were excluded from the price control cost base by Ofgem in the final One-year price control review proposals.

6.61 The figure shows the forecast trend of total IS costs for each of the GDN groups, after LECG adjustments, over the price control period.

[27] NGGD. Response to question LE-NGG-018.

[28] NGGD. Response to question LE-NGG-019.

Table 27: GDNs adjusted total IS costs



Source: NGGD. GPDCR 5 year BPQ Table B2.1; C5. LECG adjusted.

6.62 The total IS cost trend is consistent with explanations of the IS investment plans provided by NGGD. NGGD expects increases in total IS capex in 2006/07 to 2007/08, and in 2011/12 to 2012/13. NGGD stated that the 2006/07 to 2007/08 increase is due to the implementation of the enterprise resource planning system. NGGD stated that it sought to achieve cost saving by adopting a non-tailored system. The increase in IS capex in 2011/12 to 2012/13 is due to the requirement to upgrade aging systems used to support front office and system operating activities.

Conclusions

6.63 Performing top down benchmarking of IS costs is particularly difficult. We understand that IS support costs and IS capex are expected to exhibit cyclical movements, driven by periodical system upgrades. High IS capex is usually followed by a period of higher IS support activities.

6.64 The high level of investment in IS systems could result in efficiency savings in the level of operating costs either via a reduction in headcount or more efficient processes. At this stage, we have not considered any trade-offs between IS spend and operational efficiencies. We understand that these trade-offs are being assessed by Ofgem's technical consultants. If further efficiencies are identified by Ofgem, we may need to incorporate these into our analysis.

6.65 We have benchmarked NGGD's average IS support costs over the price control period. Setting allowable support costs at the average level (adjusted for potential efficiency savings identified) takes account of significant variations over the period. The table below summarises our findings:

Table 28: Summary of findings

Benchmark	Low saving £m	High saving £m
Benchmarking IS support costs, as a percentage of revenue, against other GDNs	0.00	1.96
Benchmarking IS support costs, as a percentage of revenue, against third party benchmark	0.00	Not available
Benchmarking IS support costs, per FTE, against other GDNs	0.00	2.91
Benchmarking IS support costs, per FTE, against third party benchmark	0.00	Not available
Benchmarking IS support FTE, per 1,000 users, against other GDNs	3.75	4.07
Benchmarking IS support FTE, per 1,000 users, against third party benchmark	0.00	1.80
Benchmarking total IS costs, as a percentage of revenue, against other GDNs	0.00	4.69
Benchmarking total IS costs, as a percentage of revenue, against third party benchmark	5.94	38.46

Source: LECG analysis.

6.66 Our benchmarking analysis of NGGD's average adjusted IS support costs against the other GDNs, as a percentage of average adjusted revenue, suggests that NGGD's IS support costs are efficient under the low savings scenario. Under the high savings scenario, our analysis indicates a potential average annual saving of £1.96. We have not based our proposed efficiency saving on the IS support costs per FTE metric or the IS FTE per 1,000 users metrics, as we consider that these metrics may distort underlying efficiency. If they were adopted by Ofgem, higher savings could be supported.

6.67 The benchmarking of NGGD's IS support costs against third party benchmark shows a lower efficiency saving. Ofgem expects that the GDNs should at least achieve the benchmarks set by the other GDNs. Where an external benchmark presents a more challenging efficiency target, and where it is comparable to the

GDN, we adopt the third party benchmark in calculating both the low and high savings scenarios. Therefore, in line with the explanation of our methodology in Chapter 4 we have used the GDNs benchmark for our low and high savings scenarios.

6.68 NGGD has forecasted a cyclical movements in IS support costs over the price control review period. The benchmarking of average IS support takes into account this cost pattern. We have applied a constant efficiency saving on NGGD's IS support cost in our conclusion. This is consistent with Ofgem's treatment of savings in the TPCR proposals.

6.69 In benchmarking average IS costs, the average includes the GDNs' assumptions about real wage growth. Ofgem will need to compare this average with its final determination on the appropriate allowance for real wage growth. Further adjustments may be necessary as a result.

6.70 IS capex is project driven and exhibits a high level of variability. National Grid states that its IS capex movements are driven by its investment in a new ERP system and the need to re-write and upgrade ageing systems used to support front office and system operating activities. Ofgem's technical consultants are performing a bottom up review of the major IS projects to assess the efficiency of IS capex. As such, we have not proposed any efficiency savings based on our top down benchmarking analysis of the total IS costs, but Ofgem may wish to use the results of this benchmarking to corroborate the findings of the technical consultants.

6.71 Our conclusion, under the low savings scenario, is shown in the table below.

Table 29: LECG conclusion – low savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted IS support costs (£m)	30.34	29.78	26.35	23.83	24.34
LECG conclusion (£m)	30.34	29.78	26.35	23.83	24.34
Implied efficiency savings (£m)	-	-	-	-	-

Source: LECG analysis. Forecast includes real wage growth.

6.72 Our conclusion, under the high savings scenario, is shown in the table below.

Table 30: LECG conclusion – high savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted IS support costs (£m)	30.34	29.78	26.35	23.83	24.34
LECG conclusion (£m)	28.38	27.82	24.38	21.86	22.38
Implied efficiency savings (£m)	1.96	1.96	1.96	1.96	1.96

Source: LECG analysis. Forecast includes real wage growth.

7 Finance, audit and regulation

Introduction

7.1 In this section, we set out our findings in relation to NGGD's controllable finance, audit and regulation ("FAR") costs. We first provide an overview of the activities performed by NGGD. We then summarise our benchmarking analysis of controllable FAR costs in 2006/07. We then review controllable costs over the period 2006/07 to 2012/13 and provide a high-level qualitative review of the factors underlying the forecast. Finally, we provide our conclusions on the efficiency of NGGD's FAR costs. We have not performed any historical trend analysis, for reasons explained in paragraph 6.3.

Overview

7.2 Controllable FAR operating costs for 2005/06 totalled £12.79m and are forecast to total £15.54m[29] in 2006/07. We have benchmarked FAR costs from 2006/07, as costs in 2005/06 did not represent a steady state year, for reasons explained in paragraph 4.13

7.3 Ofgem defined FAR activities to include: internal audit and related assurance activities; financial management and reporting activities, including the costs of payments, claims handling, banking, system support, credit and risk, performance delivery, management accounting, budgeting and planning activities, and the key business facing decision support[30]. We have included tax and payroll costs in the FAR cost category, to ensure comparability against external benchmarks.

7.4 NGGD defined FAR activities to include: transactions, credit risk management, management accounting, financial accounting, project accounting, financial governance, business systems support, banking, internal audit, business advice and support, Sarbanes-Oxley quality performance, fraud investigation, management of the UK business licences, regulation, compliance, and regulatory reporting and finance support to the business[31].

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29 NGGD. GDPCR 5 year BPQ table B2. Figures adjusted as per paragraph 7.5.

30 Ofgem. "*Guidance to BPQ 5 year*". Appendix 2.

31 NGGD. Presentation during LECG cost visit to NGGD. Page 34. 17 November 2006.

7.5 We have made the following adjustments to the FAR figures submitted by NGGD. Unless otherwise defined, the adjustments are required to ensure consistency with Ofgem's category definitions and the scope of activities in the external benchmarks. The adjustments refer to finance and audit ("F&A") costs and not to regulation costs:

- NGGD included costs related to de minimis services, amounting to £0.91m in 2006/07[32]. This adjustment is discussed further in Section 5;
- NGGD included tax costs in corporate centre and communications, amounting to £0.37m in 2006/07[33]. These costs have been reclassified as finance and audit ("F&A") costs;
- NGGD included payroll processing costs in HR, amounting to £0.25m in 2006/07[34]. These costs have been reclassified as F&A costs;
- NGGD included an allocation of Group Internal Audit costs in corporate centre and communication, amounting to £0.16m in 2006/07[35]. These costs have been reclassified as F&A costs;
- NGGD included an allocation of Group Finance costs in corporate centre and communication, amounting to £1.11m in 2006/07[36]. These costs have been reclassified as F&A costs; and
- NGGD has an accounting policy of capitalising staff costs related to the planning of domestic connections, and has capitalised a proportion of Distribution Support Directorate F&A costs[37]. Ofgem has reviewed this capitalisation policy and has decided to reclassify these costs as FAR operating costs. The amount was £1.69m in 2006/07[38].

32 NGGD. Response to LE-NGG-094.

33 NGGD. Response to LE-NGG-088.

34 NGGD. Response to LE-NGG-092.

35 NGGD. Response to LE-NGG-088.

36 NGGD. Response to LE-NGG-088.

37 NGGD. Response to LE-NGG-142, OP-NGG-025 and OP-NGG-026.

38 NGGD. Response to OP-NGG-025.

7.6 We asked NGGD for a breakdown of FAR costs[39]. This information was not provided at the activity cost level[40]. The table below summarises FAR costs, as submitted by the NGGD and our adjustments for 2006/07.

Table 31: Total 2006/07 FAR costs in 2005/06 prices

Controllable operating activities	2006/07 £m
Finance and audit costs**	13.64
Regulation costs (including management of the UK business licences)	1.90
Total costs provided by NGGD	15.54
Less support service costs associated with de minimis activities *	(0.91)
Add tax reclassified from corporate centre and communication	0.37
Add payroll processing reclassified from HR	0.25
Add Group Internal Audit reclassified from corporate centre and communication	0.16
Add Group Finance reclassified from corporate centre and communication	1.11
Add reclassification of capitalised recharge (Ofgem findings)	1.69
Adjusted FAR costs	18.22

Source: NGGD. Response to question LE-NGG-088, LE-NGG-092, LE-NGG-097, OP-NGG-026, OP-NGG-048; GDPCR 5 year BPQ table B2. * Further details of the adjustments to remove costs associated with de minimis activities from controllable opex are included in Section 5. ** F&A costs have been calculated as NGGD's reported FAR costs less NGGD's regulation costs. Question LE-NGG-003.

7.7 Unfortunately, we have not been able to benchmark total finance and audit costs, as defined in the table above, due to reasons of comparability. Therefore, we have created a subset of F&A costs to ensure consistency between benchmarking comparators. Specifically, we have excluded Distribution Support Directorate front office activities[40]. These activities are related to direct operating activities, rather than to finance support costs. We have confirmed the reporting of these costs with the other GDNs, and have adjusted F&A costs where required. We comment further on these excluded costs in the qualitative review section below. The table below shows the F&A costs used in our benchmarking exercise.

39 NGGD. Response to question LE-NGG-003.

40 NGGD defined these activities as "*processing customer enquiries, quotations, orders and schedules for works undertaken for domestic connections and disconnections; processing other products, such as meter work, emergency work for IGTs and diversions*". NGGD. Response to LE-NGG-133.

Table 32: 2006/07 F&A costs used in the LECG benchmarking exercise

Controllable operating costs in 2005/06 prices	2006/07 £m
Adjusted F&A (adjusted FAR costs less 2006/07 regulation and management of UK business licences)	16.32
Less Distribution Support Directorate front office costs	(3.80)
Total adjusted F&A costs for benchmarking	12.52

Source: NGGD. Response to LE-NGG-142; GDPCR 5 year BPQ table B2.

Benchmarking analysis

7.8 We have benchmarked NGGD's F&A costs and regulation costs (including the management of the UK business licences) against the other GDNs, as well as against external comparisons separately. We have used adjusted total revenue in our benchmarking calculations for F&A costs, to ensure consistency with external benchmarks. This approach is consistent with other efficiency studies we have reviewed. For example, this approach was used to benchmark Royal Mail's finance function costs[41]. In addition, it was used in the following studies:

- Oxera, in benchmarking finance costs for Network Rail, suggested that: "*the Finance benchmark varies significantly according to whether a cost- or a headcount-based measure is used… The cost-based benchmark for Finance could be considered the more appropriate of the two, as costs should represent the more appropriate cost driver (although employees will also be a driver)*"[42]; and
- Andersen, in its reviews of Transco and NGC, and KPMG, in its study of NATS, both used the ratio of finance department cost as a percentage of revenue when benchmarking the finance function.

7.9 We have used total operating costs (e.g. controllable and non-controllable) in our benchmarking calculations for regulation costs[43], in order to match external

41 We note that finance costs are also driven by other factors such as the number of bills sent/received. We have not performed benchmarking analysis at a more detailed level of disaggregation for reasons summarised in the methodology section of this report.

42 Oxera. "*Benchmarking of operating expenditure*". 2003. Page 18.

43 LECG has averaged regulation cost across the price control period 2008/09 to 2012/13, in order to profile the work of the regulation departments across the period. This helps to account for peaks during regulatory reviews. NGGD. Response to LE-NGG-060.

benchmarks. The table below shows NGGD's adjusted total controllable and non-controllable operating costs and adjusted total revenues for 2006/07.

Table 33: NGGD data used in LECG benchmarking exercise

2005/06 prices	2006/07 £m
Average regulation cost (2008/09-2012/13)	1.16
Total adjusted F&A costs for benchmarking	12.52
NGGD adjusted total revenue	1,077.52
NGGD adjusted controllable and non-controllable operating costs*	607.83

Source: NGGD. GDPCR 5 year BPQ tables B1 and B2; response to LE-NGG-060, LE-NGG-097. LECG analysis. * Controllable and non-controllable costs reflect expenditure on price-controlled areas. We have not included de minimis and excluded services within total costs. Total operating costs reflects the adjustments to the support service operating costs mentioned in this report.

Approach to benchmarking F&A costs

7.10 We benchmarked the GDNs against comparative companies outside of the gas distribution industry. We identified a number of sources:

- Global Best Practices ("GBP"), finance and audit benchmarking study, 2006[44]. This study was commissioned in 2006 for the purposes of this review, specifically for benchmarking the F&A functions of the GDNs. This study considered the relevant F&A costs, including, payroll processing, accounts payable, accounts receivable, expenses accounting, billing, financial reporting, fixed asset accounting, internal audit and financial management. This set of activities is relatively consistent with the activities performed within the F&A function;
- KPMG's 2006 benchmarking study of the finance function of BAA[45]. This study includes some activities that are not included within the GDNs' F&A costs, including investor relations and treasury. The benchmarks provided by KPMG are for companies with turnover over £625m. This is higher than the turnover of the average GDN. For these reasons, we have not used this study as the primary third party benchmark, though it is used to corroborate the findings of the GBP report;

44 GBP. "*Finance and audit benchmarking study*". Commissioned by LECG. 2006.

45 Civil Aviation Authority. "*Benchmarking the finance and facilities management costs of BAA Plc*". December 2006. Page 19.

- WCCFO 2003 finance benchmarking study[46]. This study was used by LECG in its recent study of Royal Mail's support service costs. The WCCFO study includes costs for the following finance functions: transaction processing (accounts payable, accounts receivable, payroll and expenses), risk management, speciality services (e.g. tax, treasury), financial planning and reporting, decision support, financial systems, and financial management. The benchmarking information includes some activities that are not included within Ofgem's scope for F&A costs, including treasury costs. The study is also relatively old in comparison to other available studies. For these reasons, we have not used the results of this survey;
- the Australian National Audit Office ("ANAO") 2002 finance benchmarking study. LECG used this study to benchmark Royal Mail's finance costs[47]. This study benchmarks a group of Commonwealth organisations against a set of global organisations. The global benchmarking metrics used by the ANAO are based on the Global Best Practices Knowledge Base. We have chosen not to use this benchmark, in preference to more up-to-date GBP data; and
- Arthur Andersen's efficiency reviews of NGC[48] and Transco[49]. Arthur Andersen also published finance benchmark metrics taken from its GBP Knowledge Base. The metrics in each case were based on a targeted sample group (e.g. in the case of Transco, the group consisted of 22 comparable companies in the gas, electricity distribution and water industries)[50]. We have chosen not to use this benchmark, in preference to more up-to-date GBP data.

7.11 We have used the GBP information as our primary benchmarking data source for the following reasons: (i) it provides the most-up-to-date information; (ii) the costs

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46 WCCFO. "*2003 Finance Benchmarking Initiative*". 2003. Referred to in LECG Postcomm Report, page 570.

47 The ANAO study presents finance function costs as a percentage of total operating cost (but not as a percentage of total revenue). To obtain a comparable measure for Royal Mail's finance costs, LECG adjusted the raw ANAO metrics using an assumed profit margin of 5%, as part of the Royal Mail efficiency review.

48 Arthur Andersen. "*Review of NGC's operating cost efficiency*". 2000. Appendices. Page 73.

49 Arthur Andersen. "*Report on Transco's operating costs*". 2001.

50 Arthur Andersen. "*Report on Transco's operating costs*". 2001. Appendix 2. Paragraph 2.12.

are comparable with the GDNs' F&A costs; (iii) the GBP benchmarking metrics are the most conservative; and (iv) the study was able to compare three different sets of comparator companies, as shown in the table below.

Table 34: Available GBP comparators

	Number of comparator firms	Number of European firms	Number of utility firms	Number of firms in selected sectors[51]	Average turnover	Average FTE
European companies	60	60	4	34	£446m	3,828
International utilities	11	7	11	-	£804m	2,121
> £500m turnover	31	11	2	18	£898m	7,183

Source: GBP.

7.12 We have relied on the European company comparison as our primary benchmark for F&A costs. This comparison gives the widest set of comparators and a high proportion of companies in utility or related sectors. The metric is constructed as a percentage of total revenue, in order to control for the size of the company. For the GDN companies, the average turnover for 2006/07 was £554m. We believe that the most appropriate benchmark is the European company data, as this more closely matches the size of the GDN companies.

7.13 We have not been able to benchmark NGGD against electricity distribution benchmarks. The available information combines finance costs with insurance premiums and insurance management costs. We have benchmarked insurance costs separately. We do not think it would be appropriate to benchmark finance costs combined with insurance, as these are two very different activities.

Approach to benchmarking regulation costs

7.14 The majority of the available finance benchmarks do not include costs relating to complying with economic regulation[52]. As such, we have considered regulation costs separately.

[51] The selected sectors include manufacturing, mining, technical and wholesale. These industries require logistics, the use of heavy machinery and engineering skills.

[52] Regulation costs do not include the costs of health and safety compliance.

7.15 The form of regulatory reporting and compliance undertaken by the GDNs is specific to UK utilities. Some available studies, consider total regulation as a proportion of total operating costs. This approach was used in the Deloitte TPCR report and in the Andersen Transco report. Both of these studies benchmarked regulation costs against NGC.

7.16 Other studies (e.g. Oxera's ORR Report and LECG's Postcomm Report) benchmarked regulation, strategy and corporate planning costs, together. We have been unable to construct a similar benchmark for the GDNs based on available information.

7.17 We have reviewed the available studies. Caution should be used when considering National Grid's metric in the Deloitte TPCR report, for a number of reasons. Deloitte reported that National Grid operated a core regulation team of 19 FTEs, incurring £2.00m in 2004/05. In 2005/06, National Grid had grown this core team by an extra 15 FTEs, increasing costs by around £1.20m, to manage the additional workflow created by the TPCR price control[53]. National Grid assumed that regulation costs increase at the time of price control reviews. Looking at regulation costs over the two years, however, fails to reflect what is relevant, and that is average costs over the period. Hence, both years provide invalid benchmarks.

7.18 Deloitte's analysis was based upon National Grid's total regulation cost, divided by total regulated operating costs[54]. The benchmark in 2004/05 includes transmission and distribution regulation costs in a normal year of operation. In 2005/06, regulation costs increased significantly, due to the TPCR; yet total regulation costs were expressed as a function of total operating cost. Yet this is somewhat inconsistent. For our purposes, we would need to consider either total transmission regulation costs expressed as a function of total transmission costs, or total regulation costs, assuming both TPCR and GDPCR were taking place at the same time, expressed as a function of total regulated costs. Unfortunately, Deloitte did not report the relevant data that would enable us to estimate these

[53] Deloitte does not state that these additional resources are mutually exclusive of National Grid's core regulation team, as observed in 2004/05; neither does it state that these additional staff worked solely on TPCR issues. Deloitte TPCR Report, pages105-107.

[54] We assume that it is total regulated costs as opposed to National Grid's total costs. If it related to National Grid's total costs (i.e. including non regulated sectors), then this metric would be distorted and not comparable to the GDNs at all.

metrics. However, it is not essential to consider National Grid's benchmarks, because we can calculate a National Grid metric using NGGD's data.

7.19 Our approach is therefore as follows. First, we have compared average regulation costs between the GDNs. Second, we have benchmarked costs against the original Andersen findings. Like Deloitte, we have not been able to identify any more up to date and comparable benchmarks. We have based our low savings and high savings benchmarks on the NGC benchmark[55]. The Transco benchmark should not be used, as this was deemed inefficient by Andersen.

7.20 We have averaged regulation costs across the price control period, 2008/09 to 2012/13. In doing so, then we have been able to control for variations and cycles in regulatory requirements over the price control period. We believe that it is fairer to judge GDNs cost performance based on the total regulatory costs over the price control cycle, rather than comparing GDNs at a fixed point in the cycle.

Benchmarking F&A costs between GDNs

7.21 We have used F&A costs as a percentage of total adjusted revenue to normalise the data across the different comparators, as given in the table below.

Table 35: F&A costs as a percentage of total adjusted revenue across GDNs in 2006/07

	NGGD	NGN	SGN	WWU
Benchmarked cost 2006/07 (£m, 2005/06 prices)	12.52	2.91	4.39	2.90
2006/07 performance	1.16%	1.08%	0.74%	1.05%

Source: GDNs. GDPCR 5 year BPQ tables B1 and B2. LECG analysis.

7.22 We have calculated the median and top quartile results from the comparative GDN performances and benchmarked NGGD's F&A cost performance against them. Our results are summarised below.

[55] Andersen Transco Report.

Table 36: NGGD performance against other GDNs in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency ratio	Implied savings £m
Low savings	1.06%	1.16%	0.91	1.07
High savings	0.97%	1.16%	0.84	2.06

Source: LECG analysis.

7.23 Under the low savings scenario, our analysis suggests efficiency savings of £1.07m. Under the high savings scenario, our analysis suggests efficiency savings of £2.06m.

Benchmarking F&A costs against third party studies

7.24 We have identified six relevant benchmarks for assessing finance and audit costs, as shown in the table below.

Table 37: F&A costs as a percentage of total price controlled revenue using third party benchmarking metrics

Benchmark metric and sources	Median	Top quartile
GBP 2006 (European companies)	1.05%	0.62%
GBP 2006 (International utility companies)	0.71%	0.55%
GBP 2006 (£500m turnover and above)	0.63%	0.38%
KPMG 2006 (£625m and above)	0.62%	0.43%
ANAO 2001	1.02%	0.60%
Arthur Andersen 2000	0.60%	0.30%

Source: GBP, KPMG, ANAO, Arthur Andersen. LECG analysis.

7.25 We have benchmarked F&A costs against the GBP – European companies metric, as indicated above. We believe this is the most relevant comparator. It is also the most conservative. We have based our low savings and high savings benchmarks on the median and top quartile metrics respectively. The table below shows NGGD's performance against these benchmarks.

Table 38: NGGD performance against F&A GBP European benchmark (2006/07)

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	1.05%	1.16%	0.90	1.21
High savings	0.62%	1.16%	0.53	5.84

Source: GBP. LECG analysis.

7.26 Under the low savings scenario, our analysis suggests efficiency savings of £1.21m. Under the high savings scenario, our analysis suggests efficiency savings of £5.84m. We recognise that the margin between the low and high savings cases is large. However, we have used the most conservative GBP benchmarks (in fact, it is the most conservative benchmark from all of the studies).

7.27 Deloitte benchmarked National Grid's 2004/05 F&A costs. Finance, audit and regulation costs were benchmarked separately. Deloitte stated that it had found efficiencies "*adjustment to [National Grid's] finance function staff costs of at least 11%*", together with an efficiency of "*up to 10%"* from National Grid's internal audit function[56].

7.28 The table below shows that overall National Grid's F&A costs have fallen significantly between 2004/05 and 2006/07. From this analysis, National Grid appears to have fulfilled these efficiencies.

Table 39: National Grid's F&A costs 2004/05 to 2006/07, before LECG adjustments

2005/06 prices	2004/05	2005/06	2006/07
National Grid controllable F&A costs (£m)	23.18	16.02	17.48
Annual growth	-	(30.9%)	9.1%
NGGD controllable F&A costs (£m)	7.61	11.89	13.64
Annual growth	-	56.3%	14.7%

Source: NGGD. GDPCR 5 year BPQ table B2. Response to questions LE-NGG-097 and LE-NGG-121. LECG analysis.

[56] Deloitte TPCR Report.

7.29 The table shows that while National Grid's finance costs have decreased between 2004/05 and 2006/07, NGGD's finance costs have increased significantly. Deloitte benchmarked the costs of the finance function for the whole of National Grid. NGGD is a smaller subset of this business. We asked NGGD why its F&A costs increase between 2004/05 and 2005/06 by approximately £6m. NGGD stated that it was "*due to the transfer into support services of the costs associated with Distribution Finance which were previously accounted for within the networks*"[57]. The costs transferred to the F&A cost category amounted to £2.10m[58] in 2006/07. We understand that 2006/07 represented a full year cost for all transferred functions, except for Domestic Connections, which was not fully moved into the shared service FAR cost category until October 2006.

7.30 NGGD's explanation does not fully account for the growth in F&A costs between 2004/05 and 2006/07. NGGD has not provided a further explanation[59] for this movement.

7.31 In May 2005, NGGD sold four of its eight GDNs. Finance costs in 2006/07 have not reduced because of the sale. This would suggest that economies of scale are important within the finance function. However, our benchmarking above suggests that even when comparing companies of a similar size in scale, NGGD appears inefficient.

7.32 It is also worth noting that we have included an allocation of Group Finance and Internal Audit costs to NGGD. We have included these costs to be consistent with the activities performed within the external benchmarks and the other GDNs. We understand that Deloitte did not include these costs in its benchmarking. However, Ofgem concluded that these costs were a duplication of the F&A activities conducted by NGGD. As such, they were disallowed, as part of the TPCR. To the extent that these costs are duplicated, this will show up in our benchmarking exercise. We have not made a separate explicit adjustment for these costs.

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57 NGGD. Response to LE-NGG-061.

58 NGGD. Response to LE-NGG-062.

59 We asked NGGD to provide an explanation of the change in costs between 2005/06 and 2012/13 in question LE-NGG-111.

Benchmarking regulation costs between GDNs and external benchmarks[60]

7.33 To ensure consistency with external comparators, we have calculated regulation costs as a percentage of total controllable and non-controllable operating costs. We have also averaged the GDNs' regulation cost across 2008/09 to 2012/13, in order to profile the work of the regulation departments across the price-controlled period.

Table 40: Average regulation costs as a percentage of total operating costs across GDNs between 2008/09 and 2012/13

	NGGD	NGN	SGN	WWU
Benchmarked average cost (£m, 2005/06 prices)	1.16	0.49	0.31	0.39
Average performance	0.19%	0.29%	0.09%	0.23%

Source: GDNs. GDPCR 5 year BPQ tables B1 and B2; responses to questions LE-NGG-097, LE-NGN-058, LE-SGN-079 and LE-WWU-076. LECG analysis. Average calculated between 2008/09 and 2012/13.

7.34 We have identified six benchmarks for assessing regulation costs, as shown in the table below.

Table 41: Regulation costs as a percentage of total operating costs using third party benchmarking metrics

Benchmark metric and sources	Actual
National Grid (Deloitte, 2005/06)	0.11%
National Grid (Deloitte, 2004/05)	0.07%
Royal Mail (LECG, 2003/04)[61]	0.04%
Network Rail (OXERA, 2003/04)	0.38%
NGC 2000/01 (Arthur Andersen, 2001)	0.24%
Transco 2001 (Arthur Andersen, 2001)	0.47%

Source: Deloitte, OXERA, LECG, Arthur Andersen. LECG analysis.

[60] For the purposes of our study, we have combined the costs incurred for regulation, regulatory reporting, regulatory compliance and the management of the UK business licences issued by Ofgem. These costs do not include the costs incurred complying with health and safety regulation.

[61] Royal Mail's Strategy and Regulation department costs amounting to £2.3m in 2003/04. Royal Mail's total controllable and non-controllable letter related operating costs for 2003/04 equalled £6,095m. LECG Postcomm Report. Appendix 16. Royal Mail. "*Regulatory Accounts 2003/04*".

7.35 We have excluded Royal Mail's and Network Rail's figures on the basis that the companies are significantly larger than the GDNs and because the available metrics include non-regulation costs. Against National Grid (Deloitte) and Royal Mail, NGGD could look very inefficient, due to the potential economies of scale. The Transco benchmark should not be used, as this was deemed inefficient by Andersen. We have adopted the Arthur Andersen assessment of NGC's regulation costs as the third party benchmark of regulation costs[62], and this appears to be a conservative choice.

7.36 We have calculated the median and top quartile results from the comparative GDN performances. We have then taken average of the median and top quartile between the GDNs and the cost performance of NGC, as shown below.

Table 42: Average regulation costs as a percentage of total operating costs using GDN and third party benchmarking metrics

Benchmark	Low savings	High savings
NGC 2000/01 (Arthur Andersen, 2001)	0.24%	0.24%
GDNs 2008/09 to 2012/13	0.21%	0.17%
Average	0.23%	0.20%

Source: Arthur Andersen. GDNs. GDPCR 5 year BPQ tables B1 and B2. LECG analysis.

7.37 We have benchmarked NGGD's performance against this overall GDN and external benchmark comparison in 2006/07, as shown in the table below.

Table 43: NGGD performance against the average of overall GDN and third party benchmark comparison

Benchmark	Benchmark ratio	NGGD ratio 2008/09-2012/13	Efficiency ratio	Implied savings £m
Low savings	0.23%	0.19%	1.18	-
High savings	0.20%	0.19%	1.06	-

Source: LECG analysis.

7.38 We have found that NGGD's average regulation costs across the next price control period are efficient, when compared to the other GDNs and the external

[62] Andersen TPCR Report.

benchmark. Deloitte's TPCR Report did not propose any efficiency adjustments to National Grid's 2004/05 regulation costs.

Cost trend and qualitative review

7.39 NGGD forecasts a steady increase in FAR costs, as shown in the table below.

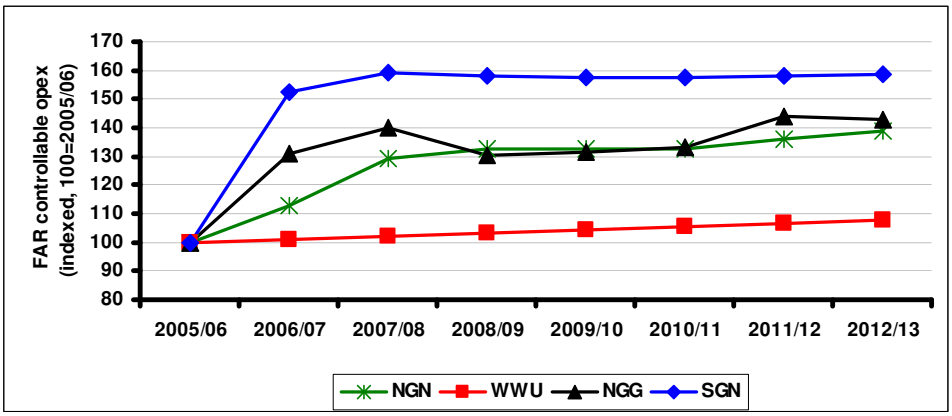
Table 44: NGGD adjusted forecast FAR costs in 2005/06 prices

£m, 2005/06 prices	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
FAR costs per BPQ (£m)	12.79	15.54	15.10	13.71	13.80	13.93	15.49	15.28	(0.3%)
LECG adjustments	1.10	2.68	4.32	4.43	4.50	4.54	4.53	4.60	
Adjusted FAR operating costs (£m)	13.89	18.22	19.42	18.14	18.30	18.47	20.02	19.88	1.5%
Annual growth rate	-	31.2%	6.6%	(6.6%)	0.9%	0.9%	8.4%	(0.7%)	

Source: NGGD. GDPCR 5 year table B2. LECG analysis.

7.40 The figure below shows the forecast trend in FAR costs for each of the GDN groups, before LECG adjustments, over the price control period.

Figure 4: Forecast GDN FAR costs



Source: Each of the GDNs. GDPCR 5 year table B2. LECG analysis.

7.42 Between 2006/07 and 2012/13, FAR costs increase by around £1.66m in total, in real terms, after LECG adjustments. FAR costs fluctuate over the period. We have analysed the trend separately, in terms of F&A and regulation costs. The

table below shows the division between the adjusted F&A costs and the regulation costs, before LECG adjustments.

Table 45: NGGD forecast FAR costs, split by F&A and regulation, in 2005/06 prices, before LECG adjustments

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
F&A costs (£m)	11.89	13.64	13.60	13.01	13.10	13.23	13.49	13.58	(0.1%)
Annual growth rate		14.7%	(0.3%)	(4.4%)	0.7%	1.0%	2.0%	0.7%	
Regulation costs (£m)	0.90	1.90	1.50	0.70	0.70	0.70	2.00	1.70	(1.8%)
Annual growth rate	-	111.1%	(21.1%)	(53.3%)	0.0%	0.0%	185.7%	(15.0%)	

Source: NGGD. GDPCR 5 year table B2; Response to LE-NGG-097. LECG analysis.

7.43 NGGD has forecast a reasonably steady state for F&A costs, with some minor fluctuations, while regulation costs show a strong cyclical trend. NGGD stated that the change in regulation costs reflected the "*timing of reviews*"[63]. This is different when compared against the other GDNs, which have forecast a smooth increase in regulation costs, in line with real salary cost increases.

7.44 NGGD explained the change in F&A costs per the BPQ between 2005/06 and 2012/13 as follows[64]. First, NGGD included Distribution Support Directorate costs in its F&A costs from 2005/06 onwards. As described above, these costs covered "*processing customer enquiries, quotations, orders and schedules for works undertaken for domestic connections and disconnections; processing other products, such as meter work, emergency work for IGTs and diversions*"[65]. These costs had previously been "*accounted for in the networks*", and had included the in-sourcing of work previously out-sourced to Fulcrum connections. The table below shows the costs attributed to the transfer of Distribution Support into F&A from 2006/07 onwards.

63 NGGD. Response to LE-NGG-111 and Response to LE-NGG-061.

64 NGGD. Response to LE-NGG-111.

65 NGGD. Response to LE-NGG-133.

Table 46: NGGD Distribution Support Directorate costs transfers from direct operating costs to the F&A cost category

2005/06 prices	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Total Distribution Support Directorate costs (£m)[66]	3.79	5.50	5.50	5.60	5.60	5.70	5.80	7.3%

Source: NGGD. Response to LE-NGG-142.

7.45 Second, NGGD stated that it had forecast a "*real earnings and pensions increase reflecting UK earnings growth and increased pensions contribution rates*"[67]. The table below shows NGGD's forecast salary costs, for both F&A and regulation combined, prior to LECG adjustments, between 2006/07 and 2012/13.

Table 47: NGGD FAR salary and non-salary costs, and National Grid FTEs, before LECG adjustments

2005/06 prices	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
NGGD FAR non-salary costs (£m)[68]	2.39	2.05	1.89	1.87	2.17	2.31	2.00	(2.9%)
NGGD FAR salary costs (£m)	13.16	13.05	11.82	11.93	11.76	13.18	13.28	0.2%
National Grid FAR FTEs	576	498	482	474	480	485	466	(3.5%)

Source: NGGD. GDPCR 5 year table B2. Response to LE-NGG-118, LECG analysis. Salary costs include the staff cost capitalisation recharge included in table B2.

7.46 Overall, salary costs increase by 0.2%, per year, on average. Salary costs are forecast to fall between 2006/07 and 2008/09, stay broadly stable between 2008/09 and 2010/11, and then increase after 2011/12. The decrease in salary

[66] The total Distribution Support Directorate cost reflects Ofgem's adjustment to reclassify certain costs (previously capitalised) as operating costs. This is discussed in paragraph 7.5.

[67] NGGD. Response to LE-NGG-111.

[68] NGGD non-salary costs are calculated as FAR costs per the BPQ, less NGGD's reported FAR salary costs, prior to LECG adjustments.

costs from 2008/09 onwards amounts to 3%, per year, on average. However, this trend is broadly matched by the change in National Grid's FAR FTEs[69].

7.47 Third, NGGD stated that the Shared Services Initiative and the introduction of the new ERP system would derive efficiencies, over the price control period[70]. NGGD have assumed that these "*efficiencies are in the finance and audit activity*"[71]. The table below shows NGGD's F&A forecast efficiency savings.

7.48 Fourth, NGGD forecast efficiencies in the C&C activities. We have adjusted into F&A a number of activities originally defined within C&C (i.e. Group level costs and taxation). NGGD has allocated 17% of its overall C&C forecast efficiencies to the adjusted activities, as described in paragraph 10.26. The table below shows NGGD's allocation to F&A of the C&C forecast efficiency savings.

Table 48: NGGD F&A efficiency savings

2005/06 prices	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Annual F&A efficiency saving from Shared Service Initiative and ERP system (£m)	(0.55)	(0.63)	(0.06)	(0.05)	(0.07)	(0.08)	(0.08)
Annual efficiency saving from C&C activities adjusted to F&A (£m)	(0.17)	(0.04)	(0.00)	(0.02)	(0.00)	(0.02)	(0.00)
Cumulative efficiency saving (£m, from 2006/07)	(0.72)	(1.39)	(1.45)	(1.52)	(1.60)	(1.70)	(1.78)

Source: NGGD. Responses to LE-NGG-134, LE-NGG-135.

7.49 There are a number of activity costs within FAR that require further comment. First, we have not been able to benchmark the Distribution Support Directorate front office costs described in paragraph 7.7. We understand from NGGD, that it had included these costs in the BPQ with Ofgem's agreement[72]. These costs were incomparable with the activities contained in the other GDNs' finance cost category and with the external benchmark. These costs seem higher than similar

69 NGGD stated that it was not able to separate FAR FTEs between the GDNs and the rest of the business. Since FAR activities are conducted by a shared service department, we have assumed that the FTE trends for NGGD and National Grid as a whole are similar. NGGD. Response to LE-NGG-118.

70 NGGD. Response to LE-NGG-111.

71 NGGD. Response to LE-NGG-134.

72 NGGD. Response to LE-NGG-133.

costs reported for the other GDNs, as highlighted in the reports for the other GDNs. Ofgem will need to consider the validity of these costs separately.

7.50 Second, we have benchmarked Sarbanes-Oxley compliance costs, as part of NGGD's F&A costs, which amounted to £0.14m in 2006/07[73]. We believe that this activity is not necessary to the functioning of a UK based gas distribution business. It is incurred as result of National Grid's decision to maintain a securities listing on the New York stock exchange. We do not believe that Ofgem should allow this cost as a GDN operating cost. However, since these costs are included within the benchmarking exercise, we have not made a separate explicit adjustment for these costs.

7.51 Third, as noted in paragraph 7.32, NGGD's F&A costs include an allocation of National Grid's Group Finance and Internal Audit costs. We understand that as part of the TPCR determination, Ofgem concluded that Group Finance costs were a duplication of the F&A activities conducted by National Grid Transmission. Group Finance costs were therefore disallowed in the TPCR[74]. We included these costs in our benchmarking exercise and to the extent that these costs are duplicated, this will show up in our benchmarking results. We have not made a separate explicit adjustment for these costs.

Conclusions

7.52 When compared against the other GDNs in 2006/07, we found F&A low savings efficiencies of £1.07m and high savings efficiencies of £2.06m. In addition, the GDNs' cost performance was below the most conservative GBP external benchmark in 2006/07. This F&A benchmark suggested savings of between £1.21m and £5.84m. The average regulation cost benchmark found NGGD's costs to be efficient. Ofgem expects that the GDNs should at least achieve the benchmarks set by the other GDNs. Where an external benchmark presents a more challenging efficiency target, and where it is comparable to the GDN, we adopt the third party benchmark in calculating both the low and high savings scenarios. Based on our methodology outlined in Chapter 4, we have used the external benchmark for our low and high savings scenarios.

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[73] NGGD. Response to LE-NGG-060.

[74] Ofgem. "*Treatment of National Grid's Corporate Centre costs for TPCR*".

7.53 We have analysed NGGD's FAR trend. Both NGGD's F&A and regulation costs appear to fluctuate across the price control period. At the end of the period in 2012/13, adjusted FAR costs are forecast to be £1.66m higher than in 2006/07. This is due primarily to higher regulation costs, which NGGD associates with the requirements of the price control review.

7.54 Distribution Support Directorate related costs have been excluded from our benchmarking analysis. Ofgem will need to consider these costs separately. These costs were also excluded from the benchmark analysis in the Deloitte TPCR Report. In addition, we have not made explicit adjustments for Sarbanes-Oxley or Group Finance and Internal Audit costs. These costs were included in the benchmarking analysis and insofar as they represent activities that are "inefficiently incurred", they form part of the efficiency saving found through our analysis.

7.55 NGGD's cost forecast already includes F&A efficiency savings. We have not double counted these savings. Ofgem needs to assess the allowance for real cost increases. Our projection of efficient F&A costs over the price control is based on the efficient level of 2006/07 costs derived through our benchmarking analysis. In line with other cost categories, no allowance for general real cost growth has been included in our projection, if they are above benchmarked efficient costs.

7.56 Our projected efficient costs are based on i) the 2006/07 F&A benchmarked efficient cost; ii) NGGD's projection of regulation costs between 2008/09 and 2012/13. On average, regulation costs were found to be efficient in our benchmarking analysis. By benchmarking average regulation costs, the average includes the GDNs' assumptions on real wage growth. Ofgem will need to compare this assumption with its final determination on the appropriate allowance for real wage growth and further adjustments may be necessary as a result.

7.57 Our conclusions under the low savings scenario are shown in the table below.

Table 49: LECG conclusions - low saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted FAR costs (£m)	18.14	18.30	18.47	20.02	19.88
Less non-benchmarked FAR costs (£m)	5.50	5.60	5.60	5.70	5.80
Benchmarked FAR costs (F&A and regulation, £m)	12.64	12.70	12.87	14.32	14.08
LECG conclusions on benchmarked costs - low saving scenario (£m)	12.01	12.01	12.01	13.31	13.01
Implied efficiency savings from benchmarked costs (£m)	0.63	0.69	0.86	1.01	1.06

Source: Non-benchmarked FAR costs are shown in Table 46:, above. LECG analysis.

7.58 Our conclusions under the high saving scenario are shown in the table below.

Table 50: LECG conclusions - high saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted FAR costs (£m)	18.14	18.30	18.47	20.02	19.88
Non-benchmarked FAR costs (£m)	5.50	5.60	5.60	5.70	5.80
Benchmarked FAR costs (F&A and regulation, £m)	12.64	12.70	12.87	14.32	14.08
LECG conclusions on benchmarked costs - high saving scenario (£m)	7.38	7.38	7.38	8.68	8.38
Implied efficiency savings from benchmarked costs (£m)	5.26	5.32	5.49	5.64	5.70

Source: Non-benchmarked FAR costs are shown in Table 46:, above. LECG analysis.

8 Insurance

Introduction

8.1 In this section, we set out our findings in relation to the NGGD's insurance costs. We first provide an overview of the activities performed by NGGD's insurance function. We then summarise the results of our benchmarking analysis in relation to controllable insurance costs in 2006/07. We also summarise our analysis of controllable insurance costs over the period 2006/07 to 2013/14 and provide a high-level qualitative review of the factors underlying the cost forecast. Finally, we provide our conclusions on the efficiency of NGGD's insurance costs. We have not performed any historical trend analysis for reasons explained in paragraph 6.3.

Overview

8.2 NGGD purchases its insurance policies from a captive insurer[75]. NGGD considers that a "captive strategy" has a number of advantages. For example, NGGD claims that given the captive insurer's knowledge of NGGD's business, it is able to offer a broader coverage than what could be achieved in the commercial market. The insurer can also handle claims more knowledgeably and can provide a more flexible approach to deductibles levels[76]. NGGD states that insurance contracts with the captive insurer are negotiated on an arm's length basis.[77]

8.3 NGGD's insurance purchasing decisions are based on a detailed risk assessment. NGGD engages independent surveyors to perform risk surveys and to produce risk registers. Based on the results of these surveys, NGGD reviews and benchmarks its insurance coverage, and determines the required insurance coverage. Insurance strategies are reported to and approved by NGGD's executive committee.

8.4 To ensure cost consistency across all the GDNs, we obtained a breakdown of insurance costs by activity. We have reviewed this breakdown and have

[75] The captive insurer is a National Grid group company that insures the risk exposure of other group companies.

[76] Deductible is the portion of a claim that is not covered by the insurance provider. In general, the higher the deductible/excess, the lower the insurance premium.

[77] LECG visit to NGGD office, 17 November 2006.

adjusted, where appropriate, the relevant costs to ensure comparability across GDNs and to ensure comparability with Ofgem's definition of insurance functions, which is included in the BPQ's guidance document[78]. The activities performed by NGGD and the other GDNs are comparable.

8.5 Insurance costs totalled £15.7m in 2006/07. They are forecast to increase at a compound annual rate of 4.9% to £20.9m by 2012/13. The table below provides a summary of the costs incurred by NGGD's insurance function.

Table 51: Total 2006/07 NGGD insurance costs

Controllable operating activities	2006/07 £m
Insurance premium (including associated administration costs)	10.50
Uninsured claims costs (including associated administration costs)	5.10
Total costs provided by NGGD	15.59
Add group insurance costs reclassified from corporate centre*	0.16
Less adjustment to remove support service costs associated with de minimis activities from regulated controllable opex **	(0.06)
Adjusted costs	15.70

Source: NGGD. Response to question LE-NGG-012. Note: * Relating to costs incurred in setting insurance policies for the National Grid group. Further details of the adjustments are included in Section 10. ** Further details of the adjustments to remove costs associated with de minimis activities from controllable opex are included in Section 5.

8.6 The table below summarises the data we have used to calculate the insurance benchmarking metrics for NGGD.

[78] Ofgem. "*GDPCR BPQ Guidance*". Appendix 2.

Table 52: NGGD insurance cost benchmarking metrics

Metric	2006/07
Revenue (£m)	1,135.7
LECG adjusted revenue (£m)	1,077.5
Insurance costs (£m)	15.7
Insurance premium costs (£m)	10.6
Uninsured claims costs (£m)	5.1
GDN FTE	5,040.2

Source: NGGD. GDPCR 5 year BPQ Table A1, B1.1, B3.1 FTE; response to question LE-NGG-019.

8.7 We have performed our analysis of NGGD's insurance costs using two approaches. First, in agreement with Ofgem, we reviewed the assessment performed by Marsh on National Grid's insurance costs, as part of the TPCR 2007-2012 ("Marsh TPCR Report"). Second, we benchmark NGGD's insurance costs against the other GDNs.

Review of Marsh TPCR Report

8.8 Ofgem commissioned insurance specialist Marsh to perform an assessment of the total insurance premium of National Grid's UK regulated business as part of the 2007-2012 TPCR. The following paragraphs summarises the scope and the conclusions of the Marsh TPCR Report.

8.9 The Marsh TPCR Report assessed the insurance premium efficiency of National Grid's UK regulated businesses, which included gas and electricity transmission, and gas distribution, for the period 2005/06 to 2011/12. The report contains a separate review of the insurance premium of National Grid's non-transmission regulated businesses, which primarily comprise of gas distribution.

8.10 The Marsh TPCR Report provides an assessment of insurance premium costs. It does not include an assessment of the other costs incurred within an insurance function (e.g. insured claims, internal staff costs, etc). Marsh did not review the efficiency of National Grid's insurance indemnity limits and insurance coverage.

8.11 The Marsh TPCR Report first produced estimates of National Grid's efficient insurance premiums. It then compared National Grid's 2005/06 actual insurance premiums against these estimates. Marsh concluded that National Grid's

2005/06 insurance premiums were efficient for the level of cover. The Marsh TPCR Report also produced estimates of efficient insurance premiums for 2006/07 to 2011/12. The report stated that historically, insurance premiums demonstrated cyclical movements, and grew at a nominal underlying rate of 3.95%.[79] The Marsh analysis compared its forecast efficient insurance premium with National Grid's forecast. Based on the Marsh analysis, Ofgem concluded that over the TPCR period, that is 2007/08 to 2011/12, total efficiency savings for the non-transmission regulated business would be approximately £3.6m.

8.12 We have used the findings in the Marsh TPCR Report to corroborate our 2006/07 benchmarking analysis, and as inputs into our assessment of the efficiency of NGGD's forecast insurance costs. We have agreed with Ofgem that we would not seek to replicate Marsh's benchmarking of National Grid's insurance premium costs against external estimates.

Benchmarking analysis

8.13 Selecting benchmarking metrics for insurance cost is particularly difficult. In theory, the benchmarking metrics used should reflect the drivers of a particular cost. In the case of insurance, a number of factors affect cost levels, including the scale of operation, risk preferences and the level of risk. We have reviewed third party reports to identify insurance cost drivers and the best approach to benchmarking. Based on this review, we believe the following metrics can be used to benchmark insurance costs:

- insurance cost / revenue. We consider that an organisation's risk exposure increases with its scale of operations. As discussed in paragraph 4.33, revenue represents a good proxy of operational scale. This metric would therefore normalises insurance costs across companies with different level of risk exposure;
- insurance cost / FTE metric, which also accounts for companies with operations of differing sizes. We have used this metric as a cross check to the results derived from using a revenue based metric; and

[79] Marsh. *"TPCR, Assessment of National Grid's Insurance Costs, Addendum to Claims Analysis Report"*. 10 August 2006. The document provides an update to the Marsh TPCR Report. The insurance premium growth rate included in the addendum (i.e. 3.95%) is lower than the growth rate included in the original Marsh TPCR Report (i.e. 5.8%).

- a comparison of insurance coverage, which may identify where a company is excessively risk averse or over-insured, or conversely under-insured, compared to its peers.

8.14 We have benchmarked GDNs against each other, using data provided by the GDNs. This data was normalised and adjusted as required.

8.15 Total insurance costs are a function of both insurance premiums and the costs of uninsured claims. We have analysed these elements and have performed a comparison of insurance coverage across the GDNs. Insurance costs are driven, in part, by indemnity limits. For a given level of underlying risk, other things being equal, higher indemnity limits will increase insurance premiums and reduce uninsured claims. Unless otherwise defined, we have based our low savings and high saving benchmarks on the median and the top quartile data points in the GDN sample.

Benchmarking total insurance costs

8.16 The table below sets out the metrics used to benchmark total insurance costs.

Table 53: Adjusted insurance costs and metrics across GDNs in 2006/07

2006/07	Insurance costs as a percentage of adjusted revenue				Insurance costs per FTE			
	NGGD	NGN	SGN	WWU	NGGD	NGN	SGN	WWU
Adjusted insurance costs (£m)	15.7	2.9	5.0	2.8	15.7	2.9	5.0	2.8
Metric	1.46%	1.08%	0.85%	1.02%	3,115	2,407	1,530	2,456

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjusted. In 2005/06 prices.

8.17 The table below compares our selected benchmarks to NGGD's performance, and summarises the potential efficiency gap, based on insurance costs as a percentage of total adjusted revenue.

Table 54: NGGD performance against other GDNs based on insurance costs as a percentage of adjusted revenue in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	1.05%	1.46%	0.72	4.40
High savings	0.98%	1.46%	0.67	5.17

Source: LECG analysis.

8.18 We summarise the efficiency gap based on insurance costs per FTE below.

Table 55: NGGD performance against other GDNs based on insurance costs per FTE in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	2,432	3,115	0.78	3.44
High savings	2,188	3,115	0.70	4.67

Source: LECG analysis.

8.19 NGGD's insurance costs appear less efficient when assessed under both benchmarking metrics.

8.20 In theory, insurance costs per FTE will be affected by a number of strategic and operational factors, including the company's policy on outsourcing. A GDN that chooses to outsource a higher proportion of its activities will have lower headcount. The percentage reduction in insurance costs, however, will be lower than the reduction in FTEs. This is because the key risks, such as business interruption and public liability, are unlikely to be affected by outsourcing arrangements. All other things being equal, a GDN with an outsourcing strategy will have higher insurance costs per FTE[80]. This tells us little about the underlying level of efficiency. Consequently, we have place lower importance on this metric.

8.21 Based on the insurance costs as a percentage of revenue metric, our analysis indicates potential annual efficiency savings of between £4.40m and £5.17m, under the low savings and the high savings scenarios respectively.

[80] We would advise Ofgem to check the validity of this argument with their insurance experts before making their final determination.

Benchmarking insurance premiums and insurance claims.

8.22 The table below set out the metrics used to benchmarking insurance premiums and insurance claims.

Table 56: Insurance premium costs and uninsured claims across GDNs

2006/07	Insurance premium costs as a percentage of adjusted revenue				Uninsured claims costs as a percentage of adjusted revenue			
	NGGD	NGN	SGN	WWU	NGGD	NGN	SGN	WWU
Adjusted insurance premium (£m)	10.6	2.3	4.6	1.8	5.1	0.6	0.4	1.0
Insurance metric	0.98%	0.85%	0.78%	0.64%	0.48%	0.22%	0.07%	0.38%

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjustments.

8.23 The table below summarises the potential efficiency gap based on insurance premiums as a percentage of total adjusted revenue.

Table 57: NGGD performance against other GDNs based on insurance premiums as a percentage of adjusted revenue in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.82%	0.98%	0.83	1.78
High savings	0.74%	0.98%	0.76	2.55

Source: LECG analysis.

8.24 The table below summarises the potential efficiency gap based on uninsured claims as a percentage of adjusted revenue.

Table 58: NGGD performance against other GDNs based on uninsured claims as a percentage of adjusted revenue in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.30%	0.48%	0.63	1.90
High savings	0.18%	0.48%	0.39	3.15

Source: LECG analysis.

8.25 NGGD's insurance premiums appear less efficient in comparison to the other GDNs benchmark. Our analysis indicates potential efficiency savings of £1.78m and £2.55m, under the low savings and the high savings scenarios respectively.

8.26 Our analysis shows that the efficient 2006/07 insurance premiums would be 17% and 24% lower than NGGD's forecast, under the low savings and the high savings scenarios respectively. As discussed in paragraph 8.11, the Marsh TPCR Report concluded that National Grid's insurance premiums were efficient in 2005/06. The differences between Marsh and our findings are partly a result of the differences in insurance growth rate assumptions. The Marsh TPCR Report forecast that real insurance premiums would decrease by 12.5% between 2005/06 and 2006/07. National Grid, however, forecast a 1.7% increase in real insurance costs for the same period[81]. In addition, Marsh benchmarked premiums against general market rates, whereas our benchmarking is against the other GDNs' premiums. It appears that on average, the GDNs are able to achieve lower insurance premiums than the market rates.

8.27 NGGD's uninsured claims also appear less efficient in comparison to the other GDNs. Our analysis indicates potential efficiency savings of £1.90m and £3.15m, under the low savings and the high savings scenarios respectively.

Benchmarking insurance indemnity limits and insurance coverage.

8.28 To gain a better understanding of NGGD's insurance premiums and insurance claims, we have compared insurance coverage across the GDNs. Our analysis is summarised below.

[81] NGGD. GDPCR 5 year BPQ Table B2.

Table 59: Comparison of insurance coverage

Insurance category	NGGD	[redacted]	[redacted]	[redacted]
Property & business interruption insurance	[redacted]	[redacted]	[redacted]	[redacted]
Public & products liability	[redacted]	[redacted]	[redacted]	[redacted]
Motor vehicle insurance	[redacted]	[redacted]	[redacted]	[redacted]
Financial loss	[redacted]	[redacted]	[redacted]	[redacted]
Legionella infection	[redacted]	[redacted]	[redacted]	[redacted]
Professional indemnity	[redacted]	[redacted]	[redacted]	[redacted]
Terrorism	[redacted]	[redacted]	[redacted]	[redacted]
Crime	[redacted]	[redacted]	[redacted]	[redacted]
Directors and officers liability	[redacted]	[redacted]	[redacted]	[redacted]
Employer liability	[redacted]	[redacted]	[redacted]	[redacted]

[redacted]	[redacted]			[redacted]
Group personal accident	[redacted]	[redacted]	[redacted]	[redacted]
Travel	[redacted]	[redacted]	[redacted]	[redacted]
Letter of understanding	[redacted]	[redacted]	[redacted]	[redacted]

Source: All GDNs. GDPCR 5 year BPQ narrative responses. LECG analysis.

8.29 NGGD stated that the insurance policies that incur the highest annual insurance premium costs were public liability (£2.9m p.a.), employer liability (£2.6m p.a.) and motor vehicle (£1.4m p.a.). Our review of NGGD and other GDNs' insurance policies indicates that for public liability and employer liability insurance, NGGD has the highest indemnity limits in comparison to the other GDNs. NGGD's motor vehicle insurance indemnity limit is at the lower end in comparison to the other GDNs.

[redacted]

8.31 Overall, NGGD has a higher indemnity limit and a broader insurance coverage in comparison to the other GDNs and it would appear that NGGD retains a lower share of its overall risk in-house.

8.32 NGGD's insurance premiums in 2006/07 are higher than the GDN benchmarks. This may reflect the higher indemnity limits and insurance coverage that it has obtained. Given that NGGD retains a lower level of risk in-house, we would expect NGGD to incur lower uninsured claims costs. The results of our benchmarking of NGGD's uninsured claims are inconsistent with this expectation.[82]

8.33 Due to the difficulty in quantifying the trade off between risk, insurance premiums and uninsured claims, we have based our efficiency assessment on total insurance costs. Our analysis of NGGD's total insurance costs indicates potential efficiency savings of £4.40m and £5.17m, under the low savings and the high savings scenarios respectively.

Cost trend and qualitative review

8.34 We have reviewed NGGD's forecast for insurance costs over the price control period. The table below summarises these costs.

Table 60: NGGD adjusted forecast insurance costs

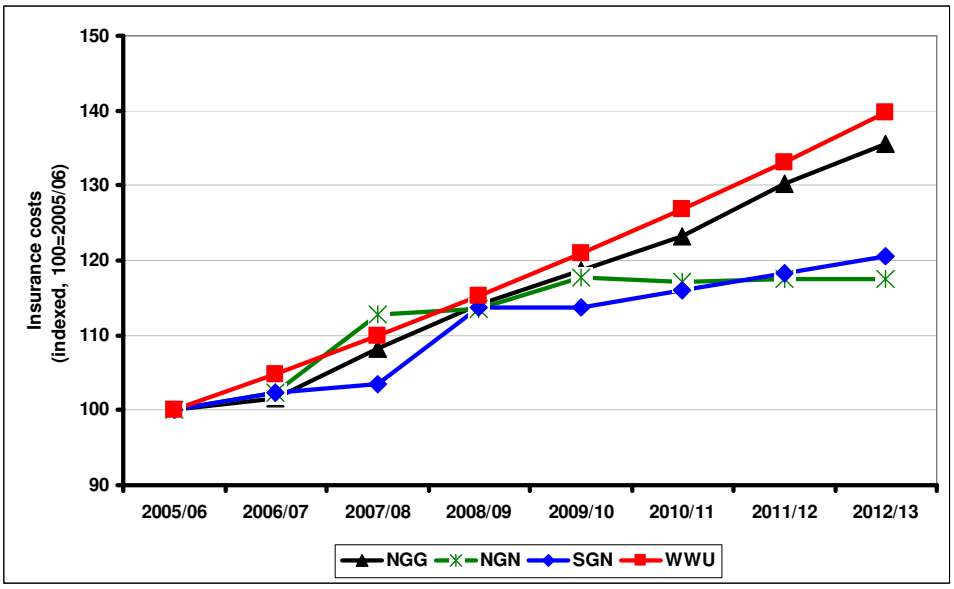
2005/06 prices	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Insurance costs as per BPQ (£m)	15.33	15.59	16.60	17.50	18.20	18.90	20.00	20.80	4.9%
LECG adjustments	0.11	0.10	0.12	0.12	0.12	0.12	0.12	0.12	
Adjusted insurance costs (£m)	15.44	15.70	16.72	17.62	18.32	19.02	20.12	20.92	4.9%
Annual growth rate		1.7%	6.5%	5.4%	4.0%	3.8%	5.8%	4.0%	

Source: NGGD. GDPCR 5yr Table B2.1. LECG analysis.

8.35 The figure below shows the forecast trend in total insurance costs for each of the GDN groups, after LECG adjustments, over the price control period.

[82] LECG is not a company specialising in insurance. We are unable to comment in further detail on the relationship between indemnity limits, insurance premiums and uninsured claims.

Table 61: GDNs adjusted forecast insurance costs



Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

8.36 NGGD's insurance costs are forecasted to increase at a constant annual rate, in real terms, of approximately 4.9%. We understand through our discussion with the GDNs that the key risks facing gas distributors are the costs and the liabilities resulting from a major outage. We have not been made aware of any major differences in the risks that the GDNs face.

8.37 NGGD stated that the use of a captive insurer serves to avoid the severe swings of insurance market.[83] Insurance premium payments to the captive insurer may not demonstrate the same cyclical movement as the insurance premium to third party insurers. NGGD estimated that real insurance premium would rise at an underlying annual rate of 4.9%. NGGD has provided a number of generic factors that may explain this estimate[84]. We have requested, but NGGD has not provided, detailed bottom up calculation to demonstrate how these factors may translated into the 4.9% expected increase. In addition, the growth rates are not consistent across the GDNs. As such, NGGD's estimates are not well supported.

8.38 NGGD states that the increase in insurance costs is primarily driven by inflation (e.g. personal injury claims, recovery of NGS charges), and an increase in

[83] LECG visit to NGGD office, 17 November 2006.

[84] NGGD. Response to LE-NGG-010.

asbestos liabilities, which are driven by the Compensation Act 2006, which streamline asbestos claim processes.

8.39 We have compared NGGD's insurance costs growth pattern with the insurance premium growth pattern included in the Marsh TPCR Report. Marsh's forecast of insurance premiums was based on the index of Non-Marine market rates compiled by CBS Private Capital Ltd at Lloyd's of London. The Marsh TPCR Report indicates that historically, insurance premium rates demonstrate cyclical movements and grow at an underlying annual rate of 3.95%[85] in nominal prices. Marsh has provided a forecast of insurance premium rates for National Grid using each of these two bases.

8.40 We understand that Ofgem, in the TPCR, concluded that the cyclical growth pattern represented a more appropriate basis for calculating allowable insurance premiums, as it was more likely to reflect accurately the movement in market insurance premiums over the price control period. As such, we have adopted Marsh's cyclical growth pattern in our review of forecast insurance costs. To estimate insurance costs for NGGD, we have calculated Marsh's insurance premium, for each future year, as a percentage of the insurance costs in 2006/07. The table below summarises Marsh's forecast and our calculations.

[85] Marsh TPCR Report, ibid.

Table 62: Marsh's estimate insurance premium

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13+	CAGR 06/07-12/13
Marsh estimate in nominal prices (£m)	28.6	25.6	22.7	19.7	25.7	31.6	37.6	37.6	6.6%
Nominal-real prices conversion rates*	100.0	102.5	105.1	107.7	110.4	113.1	116.0	118.9	
Marsh estimates (£m, in 2005/06 prices)	28.6	25.0	21.6	18.3	23.3	28.0	32.4	31.6	4.0%
Marsh index (100% at 06/07)	114%	100%	86%	73%	93%	112%	130%	126%	

Source: Marsh and LECG analysis. Notes: + The Marsh TPCR Report does not provide insurance premium estimates for 2011/12 onward. We have used the 2011/12 estimates as a proxy for 2012/13. This is likely to produce a higher insurance premium estimate as Marsh expects insurance premium costs to decrease from 2011/12 onward. * Based on an annual inflation rate of 2.5%. Source: Ofgem, "*GDCPR BPQ - Guidance and Narrative Questions*".

8.41 We have applied Marsh's index to NGGD's total insurance costs in 2006/07. Whilst Marsh's conclusions apply only to insurance premiums, we believe that the derived index can be applied to total insurance costs for the following reasons. First, insurance premiums constitute two-third of NGGD's total insurance cost in 2006/07. Second, insurance premiums are driven by insurers' expected payouts. Insurers' expected payouts represent part of a GDN's total insurance costs (the remainder are borne in-house as uninsured claims costs). We understand that NGGD does not expect major changes in insurance coverage. Insurers' expected payouts as a percentage of total insurance costs can be expected to remain stable over the price control period. As such, total insurance costs can be expected to follow a similar growth pattern as insurance premiums.

8.42 Our insurance cost estimates are the product of NGGD's insurance costs in 2006/07 and the Marsh Index calculated above. Our estimates below illustrate how NGGD's forecasts would change by adopting the Marsh growth rates. The figures are before any efficiency adjustments relating to the level of costs in 2006/07, as shown below:

Table 63: NGGD performance against third party study benchmark

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	Total 08/09-12/13
Adjusted insurance costs (£m)	15.70	16.72	17.62	18.32	19.02	20.12	20.92	96.01
Base year to which index is applied	15.70							
Marsh's index	100%	86%	73%	93%	112%	130%	126%	
LECG estimate of total insurance costs	15.70	13.55	11.51	14.61	17.56	20.35	19.86	83.89
Implied savings (£m)	0.00	3.17	6.11	3.71	1.46	(0.23)	1.07	12.12

Source: LECG analysis.

8.43 NGGD's forecast of insurance costs is higher than Marsh's estimate. Based on this analysis, the total implied efficiency savings over the price control period would be £12.1m. The savings are calculated before applying efficiency adjustments to the base year insurance costs. We understand that in the TPCR 2007-12, Ofgem has proposed a £3.6m efficiency savings on National Grid's non-transmission businesses in relation to insurance costs[86]. The savings indicated in our analysis are higher due to the inclusion of uninsured claims costs savings (the Marsh TPCR Report did not review uninsured claims) and the more challenging benchmark set by the GDN comparators (in comparison to the market rate used in the Marsh TPCR Report).

[86] Ofgem TPCR financial model.

Conclusions

8.44 The table below summarises our findings:

Table 64: Summary of findings

Benchmark	Low saving £m	High saving £m
Benchmarking total insurance costs, as a percentage of revenue, against other GDNs	4.40	5.17
Benchmarking total insurance costs, per FTE, against other GDNs	3.44	4.67
Benchmarking insurance premium, as a percentage of revenue, against other GDNs	1.78	2.55
Benchmarking uninsured claims, as a percentage of revenue, against other GDNs	1.90	3.15

Source: LECG analysis.

8.45 Our benchmarking of NGGD's 2006/07 total insurance costs as a percentage of revenue indicates that NGGD's insurance costs appear inefficient. Our analysis indicates potential annual savings of £4.40m and 5.17m, under the low savings and the high savings scenarios respectively.

8.46 Our analysis suggests a higher efficiency savings than the Marsh TPCR Report. This is due to the inclusion of uninsured claims costs savings and the more challenging benchmark set by the GDN comparators.

8.47 We have also reviewed NGGD's insurance premiums and uninsured claims separately. NGGD has insurance policies have higher indemnity limits and broader coverage, and consequently, it retains a lower level of risk in-house. NGGD's higher premiums are consistent with this higher risk. NGGD's higher uninsured claims, however, are not consistent with this lower level of risk. Due to the difficulties in quantifying the trade off between risk level, insurance premium and uninsured claims costs, we have based our potential efficiency savings on an analysis of total insurance costs.

8.48 NGGD also assumes that costs will increase at a rate that is higher than Marsh. We have calculated NGGD's potential efficiency savings by applying Marsh's forecast insurance premium growth rate to NGGD's 2006/07 insurance costs,

after efficiency adjustments[87]. This approach is consistent with Ofgem's conclusions in the TPCR.

8.49 Under the low savings scenario, we applied an efficiency adjustment to NGGD's 2006/07 insurance costs (i.e. a reduction of £4.40m to £11.30m). We then apply the forecast insurance costs growth rates, which are discussed above. Our conclusions are shown in the table below:

Table 65: LECG conclusions – low savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted insurance costs (£m)	17.62	18.32	19.02	20.12	20.92
LECG conclusions (£m)	8.28	10.52	12.64	14.65	14.29
Implied efficiency savings (£m)	9.34	7.81	6.39	5.48	6.63

Source: LECG analysis.

8.50 Under the high savings scenario, we applied an efficiency adjustment to NGGD's 2006/07 insurance costs (i.e. a reduction of £5.17m to £10.53m). We then apply the forecast insurance costs growth rates, which are discussed above. Our conclusions are shown in the table below.

Table 66: LECG conclusions – high savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted insurance costs (£m)	17.62	18.32	19.02	20.12	20.92
LECG conclusions (£m)	7.72	9.80	11.78	13.65	13.32
Implied efficiency savings (£m)	9.90	8.52	7.24	6.47	7.60

Source: LECG analysis.

[87] Under the high savings scenario, the efficiency adjustment to 2006/07 total insurance costs is £5.17. Total insurance costs prior to adjustment are £15.70m. Total insurance costs after adjustment are £10.53m. The LECG estimate of, say, 2008/09 total insurance costs is calculated by multiplying the adjustment 2006/07 total insurance costs (i.e. £10.53m) by the 2008/09 Marsh index (i.e. 73%).

9 Property management

Introduction

9.1 In this section, we set out our findings in relation to NGGD's property management costs. We first provide an overview of the activities performed by NGGD. We then summarise the results of our benchmarking analysis of controllable property management costs in 2006/07. We also summarise our analysis of property management costs over the period 2006/07 to 2012/13 and provide a high-level qualitative review of the factors underlying the forecast. Finally, we provide our conclusions on the efficiency of NGGD's property management costs. We have not performed any historical trend analysis for reasons explained in paragraph 6.3.

Overview

9.2 Property management costs cover the costs of non-operational properties (i.e. not directly related to the production and transfer of gas) for NGGD. NGGD rents all its property from Property Services Group ("PSG"). PSG owns and leases properties to National Grid Group companies. PSG also acts as an agent for the maintenance and the sale of properties. All lease, dilapidation and sale costs are attributed to the National Grid business units at market rate. NGGD states that it is only charged for the properties that it occupies, and there were no stranded property costs resulting from the GDN sales. NGGD's transactions with PSG have been reviewed by Ofgem in its review of accounting issues[88]. Around 97% of PSG's revenue is derived externally. As such, the margins earned by PSG in its transactions with NGGD are not excluded for price control purposes.

9.3 NGGD confirmed to us that non-operational properties were transferred into the PSG from Transco prior to the establishment of a regulatory value for Transco by the Monopolies and Mergers Commission on 1 April 1997. The transferred value was based on the current cost accounting value of the properties[89]. It would appear that since the non–operational properties were excluded from NGGD's Regulatory Asset Value ("RAV"). As such, NGGD is not remunerated for these via the RAV mechanism. It is appropriate, therefore, to include the rental and

[88] Ofgem. "*Review of Accounting Issues*". January 2007.

[89] NGGD. Response to LE-NG-096.

running costs of these properties within the allowable costs base for price control purposes.

9.4 NGGD stated that the majority of the maintenance and the guard duties were outsourced. NGGD currently has no umbrella property management outsourcing arrangement. NGGD considers that no single outsourcing services operator could provide the full range of property management services that it requires[90].

9.5 NGGD confirmed that its property management costs included the following activities: rent; property maintenance; utilities costs (e.g. power, water, rates); running costs (e.g. reception, security, cleaning, catering, mailroom, etc); maintenance of property records and monitoring of site usage. NGGD has not provided a breakdown of property management costs by activity because it does not maintain accounting data at this level. The table below provides a summary of the property management costs incurred by NGGD.

Table 67: Total 2006/07 NGGD property management costs

Controllable operating activities	2006/07 £m
Property management costs provided by NGGD	24.7
Adjustment to remove support service costs associated with de minimis activities from regulated controllable opex *	(0.9)
Adjusted costs	23.8

Source: NGGD. Response to question LE-NGG-094. * Further details of the adjustments to remove margins from de minimis activities from controllable opex are included in Section 5.

9.6 Adjusted property management costs are expected to total £23.8m for 2006/07[91] and then are expected to decline at an average annual rate of 1.7% to £21.5m per annum by 2012/13.

9.7 We compared the list of activities performed by NGGD's property management function to those performed by the other GDNs. We conclude that NGGD's property management function is comparable to the other GDNs.

9.8 The table below summarises the data we have used to calculate the property management benchmarking metrics.

[90] LECG cost visit to NGGD office, 28 November 2006.

[91] All costs are expressed in 2005/06 price level unless otherwise stated.

Table 68: NGGD data used in the LECG benchmarking exercise

2005/06 prices	2006/07
Total property costs (£m)	23.8
Total rental costs (£m)	6.6
Total facilities management costs excluding rent and rates (£m)	15.9
Floor space (sq ft)*	501,528
Total network size (km)	131,588
Total regulated business FTEs	5,040

Source: NGGD. GDPCR 5 year BPQ table B3.1 FTE, B6.1. NGGD response to question LE-NGG-053, LE-NGG-104, LE-NGG-108, LE-NGG-035, LE-NGG-131 and LE-NGG-132. Note: Adjustments to the total property management costs are allocated to individual opex activities in proportion to their pre-adjustment cost levels. * We have removed the other GDNs' share (50%) of call centre and national system operation.

Benchmarking analysis

9.9 We have reviewed third party reports, including the detailed bottom up review of National Grid's property portfolio, performed by Drivers Jonas[92] as part of TPCR 2007-2012, to identify property management cost drivers and the best approach to benchmarking property management costs. Based on this review, we believe the following can be used to benchmark property management costs:

- total property management costs per square foot office space, which normalises property costs across organisations to account for different levels of total office space. Rental costs, which represent the largest component of total property costs, vary substantially across region. Caution, therefore, should be employed in using this metric to assess the efficiency of property costs. We have not employed this metric to benchmark total property costs across GDNs due to substantial regional cost variations. We have adopted this metric in comparing NGGD performance to third party benchmarks. Third party benchmark is based upon a large cross section of respondents, including companies that are based in similar regions to NGGD. We use this benchmark to crosscheck the results of our benchmarking of individual property costs;

[92] Drivers Jonas. "*Transmission Price Control Review: Assessment of National Grid's Property Portfolio*". September 2006. We refer to this report as the "Drivers Jonas Report".

- rental costs per square foot for each property. The largest proportion of property costs relates to the payment of property rent. The balance relates to facilities' management, property repair and maintenance costs. Given the materiality of rental costs, it is important to assess whether the GDNs are paying rent above market benchmarks. This was performed by a detailed review of rental properties;
- total facilities costs per square foot of total GDN property space, which normalises facilities costs across GDNs with different levels of total office space. This metric indicates the extent to which the non-rental occupation costs of a building are efficiently incurred by GDNs relative to each other;
- total area of office space per kilometre of pipeline. A primary driver for the level of property required is the length and distribution of each network. We understand that situating depots in relative proximity to the sites where capex and repex works are being performed may result in less labour downtime. It may also enable the GDN to fulfil its emergency response requirements as mandated by the HSE more efficiently. The metric should normalise the level of property available across each network owner (since some network owners have shared properties that service multiple networks). A high ratio in comparison might indicate inefficient property holdings or surplus property; and
- area of net internal space per FTE. The metric measures that density of occupation for each GDN. This measures the efficiency of the use of space. This metric was used by Drivers Jonas in the TPCR.

9.10 We have performed our benchmarking exercises using two approaches. First, we reviewed the Drivers Jonas Report on National Grid's property related costs, as part of the TPCR 2007-2012. Second, we benchmarked NGGD against each of the other GDNs.

Review of Drivers Jonas Report

9.11 National Grid's property management related costs have been reviewed in detail in the Drivers Jonas Report as part of the 2007-2012 TPCR. The results of the Drivers Jonas Report are summarised in the paragraphs below.

Total property costs

9.12 The Drivers Jonas Report compared National Grid's property costs per office areas to the Total Office Cost Survey ("TOCS"), March 2006 benchmark. TOCS is prepared by Actium Consult[93], an independent property consulting practice. TOCS include responses from 120 property agents and covers 50 UK locations. TOCS provides complete property running cost data, including rent, rates, maintenance, security and utilities.

9.13 The Drivers Jonas Report concluded that overall, National Grid's property costs compared favourably to the benchmark. The report, however, identified two category 3 properties and two category 2 properties that were in excess of 30% over the TOCS average cost. Of these properties, only one related to the Distribution business. The total annual cost for this property was £387,000 and it was 50% higher than the benchmark. Accordingly, a potential saving of £193,500 could be achieved.

Rental costs

9.14 The Drivers Jonas Report compared National Grid's rental costs for each property to the market rent data contained in the Drivers Jonas database. The analysis was then crosschecked using the GVA Grimley Survey data. The Drivers Jonas Report concluded that overall, NGGD's rental costs are lower than third party benchmarks. The Driver Jonas Report, however, noted that this might be because some of the features of certain National Grid's properties have made them less attractive to other tenants in the marketplace.

Occupancy density

9.15 The Drivers Jonas Report compared National Grid's occupancy density to the British Council for Offices Guide 2005, Best Practice in the Specification of Offices[94] ("BCO Guide") benchmark. The BCO Guide provides the UK best practice level of occupancy density, expressed as net internal area per person. The Drivers Jonas Report also compared National Grid's occupancy density to the spatial standards in use by other Drivers Jonas Government clients. We have agreed with Ofgem that we would not seek not replicate Drivers Jonas' bottom up review of National Grid's property related costs.

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93 Drivers Jonas Review, ibid.

94 Drivers Jonas Review, ibid.

9.16 The Drivers Jonas Report concluded that overall, National Grid's occupancy density appeared efficient. The report, however, identified a number of areas where further savings could be achieved. These areas include developing home working and desk sharing schemes, and adopting a fully open plan working environment.

9.17 The Drivers Jonas's review looked at the running costs of each property on a bottom up basis. Their review did not have the benefit of being able to compare across similar companies, such as the other GDNs. We have therefore focused our review on the benchmarking between GDNs.

Benchmarking between GDNs

9.18 In this section, we benchmarked NGGD against each of the other GDNs. Unless otherwise defined, we have based our low savings and high saving benchmarks on the median and the top quartile data points in the GDN sample.

Benchmarking facility management costs

9.19 We have compared the facilities management costs per square foot office space across the GDNs as set out in the table below.

Table 69: Benchmarking facilities management costs across all GDNs

2006/07	NGGD	NGN	SGN	WWU
Adjusted facilities management (£m)	15.9	1.3	1.9	2.8
Benchmarking metric	31.8	14.1	10.3	40.7

Source: All GDNs. Responses to LECG supplementary questions. LECG adjusted.

9.20 The table below summarises the potential efficiency gap based on facilities management costs per square foot office space.

Table 70: NGGD efficiency based on facilities management costs per square foot office space in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving £m
Low savings	23.0	31.8	0.72	4.42
High savings	13.2	31.8	0.42	9.32

Source: LECG analysis.

9.21 NGGD's facilities management costs appear less efficient in 2006/07, in comparison to the other GDNs. Our analysis implies potential annual savings of £4.42m and £9.32m, under the low savings and the high savings scenarios respectively.

9.22 The metric for NGGD is much higher than the other GDN ratios. NGGD's performance could be biased, because its property costs include critical operational sites used for call centres (e.g. emergency number response), distribution control centres and data centres (including xoserve data centre). These sites are required to be operational 24 hours a day and have higher security facilities. The departments residing in these sites provide services to both NGGD and the iDNs. The property management costs associated with these sites are recharged to the iDNs through NSA charges. The recharges will not be shown in the iDN's property management costs, as the NSA charges are reported mainly within direct operating costs or within IS costs for FOMSA. The property management costs allocated to NGGD, however, are included in NGGD's property management costs. NGGD has been unable to provide sufficient information to allow us to adjust for the property management costs relating to these services.

9.23 We observed that NGGD appears to provide a wider set of facilities than the other GDNs (e.g. subsidised staff canteens including the provision of hot food and chef cooking stations, in-house staff gyms, subsidised staff transport buses). An element of the higher facility management costs per square foot could be explained by these factors.

9.24 National Grid's facilities management costs were reviewed by Drivers Jonas as part of the TPCR 2007-2012. The Drivers Jonas Report reviewed the facilities management charges across the National Grid estate, at a per property level.

The Drivers Jonas Report recommended some efficiency savings in areas such as the subsidised staff bus services at Warwick offices, and the subsidised staff canteens. Overall, however, the report considered that the scope for savings was more limited than the levels suggest by the benchmarking results.

9.25 The difference between the results could be due to a number of factors. The Drivers Jonas Report assessed whether the costs of a specific service (e.g. catering) were efficiently incurred, but did not consider whether it was valid or efficient to provide that particular service. The Drivers Jonas Report did not have the benefit of being able to compare facility management costs across the GDNs. Of course, NGGD providing 24-hour services may drive higher level of facilities. However, further work would need to be undertaken to assess the full impact of this factor. Ofgem may wish to review this area further in order to assess the level of efficiency.

Benchmarking total floor space

9.26 We have compared the total floor space per kilometre of pipeline across the GDNs. The performance of the GDNs is set out in the table below.

Table 71: Benchmarking total floor space across all GDNs in 2006/07

2006/07	NGGD	NGN	SGN	WWU
Total floor space (sq ft)	501,528	92,193	183,092	68,437
Benchmarking metric	3.8	2.5	2.5	2.0

Source: All GDNs. GDPCR 5 year BPQ Table 6.1. Responses to LECG supplementary questions. LECG adjusted.

9.27 The table below summarises the potential efficiency gap based on total floor space per kilometre of pipeline.

Table 72: NGGD efficiency based on total floor space per kilometre of pipeline in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving
Low savings	2.5	3.8	0.66	171,067
High savings	2.4	3.8	0.62	189,110

Source: LECG analysis.

9.28 Our analysis indicates that NGGD's level of property would appear to be less efficient, in comparison to the other GDNs. Under the low savings scenario our analysis indicates a floor space saving of 171,067 square feet. This represents 34.1% of total floor space. We have applied the floor space saving percentage on NGGD's rent and rates, which is £7.9m[95]. Our analysis indicates an annual saving of £2.69m[96]. Under the high savings scenario, our analysis indicates a floor space saving of 189,110 square feet. This represents 37.7% of total floor space, or an annual saving of £2.98m[97]. We believe that since NGGD's facilities management costs could be overstated for the reasons explained in paragraph 9.22 above, it is prudent to apply the saving to NGGD's rent and rates, which could be saved if the level of property holdings are reduced.

Cost trend and qualitative review

9.29 We have reviewed NGGD's forecast total property management costs for the price control period. The table below shows the forecast trend.

[95] Estimated as follows: rental costs £6.6m, rates £1.3m. Source: NGGD response to LE-NGG-053 and LE-NGG-114.

[96] Estimated as follows: £7.9m x 34.1%.

[97] Estimated as follows: £7.9m x 37.7%.

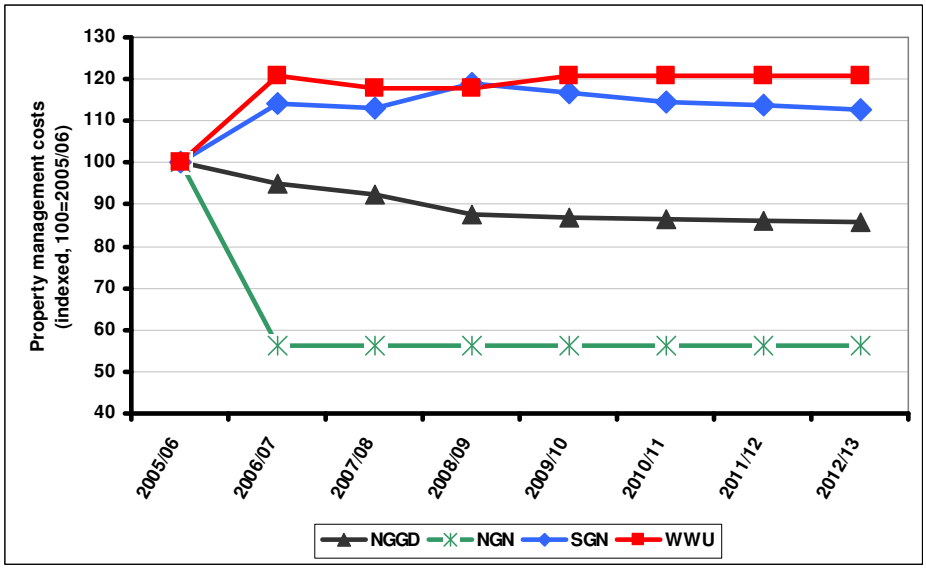
Table 73: NGGD adjusted forecast total property management costs

(£m, 2005/06 prices)	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 07/08-12/13
Property costs per BPQ	26.2	24.7	23.8	22.6	22.4	22.3	22.3	22.2	(1.8%)
LECG adjustments*	(1.1)	(0.9)	(0.6)	(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	
Adjusted property management costs	25.0	23.8	23.2	21.9	21.7	21.6	21.6	21.5	(1.7%)
Annual growth rate		(4.9%)	(2.6%)	(5.3%)	(0.9%)	(0.6%)	(0.2%)	(0.6%)	

Source: NGGD. GDPCR 5yr Table B2.1. LECG adjusted.

9.30 The figure below shows the forecast trend of the total property management costs for each of the GDN groups, after LECG adjustments.

Figure 5: GDNs adjusted forecast property management costs



Source: All GDNs. GDPCR 5yr Table B2.1. LECG adjusted.

9.31 NGGD forecasts property management costs to decrease at an annual average of 1.7% over the price control period. NGGD states that this is a result of (i) cost

saving initiatives such as desk sharing, day cleaning, and guards doing multiple tasks; and (ii) 3% annual staff costs saving due to process improvements[98].

9.32 NGGD considers that the scope for further efficiency saving is limited due to the increase in input costs, most notably utility costs and wage inflation (e.g. property rates increased by 9% in real terms in 2005/06, and are forecasted to increase by 2% in real term per annum). Second, there is limited scope for further rationalisation, which has already reduced staffing from property management function from 97 FTEs to 55 FTEs, and has resulted in the centralisation of offices and the closure of 65 regional and depot sites[99]. Last, there is limited scope to achieve synergies with the transmission business, as distribution business requires a larger number of smaller sites, in comparison to the transmission business[100].

Conclusion

9.33 The table below summarises our findings:

Table 74: Summary of findings

Benchmark	Low saving £m	High saving £m
Review of Drivers Jonas Report on total property management costs	0.19	0.19
Review of Drivers Jonas Report on rental costs	0.00	0.00
Review of Drivers Jonas Report on occupancy density	0.00	0.00
Benchmarking facilities management costs, per square foot floor space, against other GDNs	4.42	9.32
Benchmarking floor space, per kilometre pipeline, against other GDNs	2.69	2.98

Source: LECG analysis.

9.34 Our review of the Drivers Jonas Report on the National Grid's property related costs identified a potential efficiency saving of £193,500 as the cost of a distribution site was 50% higher than the TOCS benchmark. Overall, the Drivers

98 LECG site visit to NGGD office, 17 November 2006.

99 NGGD. Response to LE-NGG-052.

100 LECG site visit to NGGD office, 17 November 2006.

Jonas Report concluded, National Grid's total property costs, rental costs and occupancy density appeared in line with market levels.

9.35 We have performed additional benchmarking of NGGD's property management costs to the other GDNs. When compared to the other GDNs, NGGD's facilities management costs, based on the facilities management costs per square foot of floor space metric, appeared to be less efficient. Our analysis indicates a potential annual efficiency saving of £4.42m and £9.32m, under the low savings and the high savings scenarios respectively.

9.36 We understand that NGGD's facilities management costs are higher partly due to the property costs relating to the services that NGGD provides to the iDNs. The property management costs concerned are included as property management costs in NGGD, but are included as direct operating costs for the iDNs. The differences in costs classification may result in a bias against NGGD.

9.37 Part of NGGD's high facilities management costs, however, could be due to actual inefficiencies. Our observation is that NGGD provides a wider set of facilities within its properties in comparison to the other GDNs.

9.38 In comparison to the other GDNs, NGGD's level of property holdings, when measured against total floor space per kilometre pipeline, appears less efficient. Under the low savings scenario, our analysis suggests a potential annual saving of £2.69m. Under the high savings scenario, our analysis suggests a potential annual saving of £2.98m.

9.39 NGGD stated during our site visit that the expected decline in property management costs is a result of staff cost savings and process improvement. As such, we consider that is appropriate to apply the potential annual efficiency savings, calculated based on floor space savings to the cost trend forecast by NGGD, as we would not be double counting the potential efficiencies.

9.40 Our conclusions, under the low savings scenario, are shown in the table below. Our low savings scenario is based on the review of Drivers Jonas relating to total property management costs (i.e. £0.19m) and the results of benchmarking floor space, per kilometre pipeline, against other GDNs (i.e. £2.69m).

Table 75: LECG conclusions – low savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted property management costs (£m)	21.94	21.75	21.62	21.58	21.46
LECG conclusion (£m)	19.06	18.87	18.74	18.70	18.58
Implied efficiency savings (£m)	2.88	2.88	2.88	2.88	2.88

Source: LECG analysis.

9.41 Our conclusions, under the high savings scenario are shown in the table below. Our high scenario is based on the review of Drivers Jonas relating to total property management costs (i.e. £0.19m) and the results of benchmarking floor space, per kilometre pipeline, against other GDNs (i.e. £2.98m).

Table 76: LECG conclusions – high savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted property management costs (£m)	21.94	21.75	21.62	21.58	21.46
LECG conclusion (£m)	18.77	18.58	18.45	18.41	18.29
Implied efficiency savings (£m)	3.17	3.17	3.17	3.17	3.17

Source: LECG analysis.

10 Corporate centre and communication

Introduction

10.1 In this section, we set out our findings in relation to NGGD's controllable corporate centre and communication ("C&C") costs. We first provide an overview of the activities performed by NGGD's corporate functions. We then summarise our benchmarking analysis of controllable C&C costs in 2006/07. We then review controllable C&C costs over the period 2006/07 to 2012/13 and provide a high-level qualitative review of the factors underpinning the forecast. Finally, we provide our conclusions on the efficiency of NGGD's C&C costs. We have not performed any historical trend analysis for reasons explained in paragraph 6.3.

Overview

10.2 NGGD's corporate C&C operating costs totalled £11.57m in 2005/06 and are forecast to total £10.67m[101] in 2006/07. We have benchmarked C&C costs from 2006/07, as costs in 2005/06 did not represent a steady state year, for reasons explained in paragraph 4.13

10.3 Ofgem defined C&C activities to include tax, treasury, investor relations, company secretariat, corporate affairs, internal communications, dealing with the press, crisis communications and issues management, regional communications, community relations, charitable donations, event management, intranet and internet site development, stakeholder management, and corporate branding[102]. We have reclassified tax into the finance, audit and regulation cost category, in order to match the scope of activities contained within the external benchmarks.

10.4 NGGD defined C&C activities to include an allocation of Group HR, Group Finance and Internal Audit, Group Finance (Insurance), Group Strategy, Group Security, company secretary, corporate affairs, corporate responsibility (including a young offenders initiative etc.)[103], investor relations, National Grid Board; as well

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101 NGGD. GDPCR 5 year BPQ table B2. We have subsequently adjusted C&C costs.

102 Ofgem. "*Guidance to BPQ 5 year*". Appendix 2.

103 Corporate responsibility activities are consistent with the external benchmarks and Ofgem's original definition of C&C costs.

as NGGD's internal communication, marketing and advertising, intranet and internet site, crisis management and media, and external communications[104].

10.5 We have adjusted the C&C figures submitted by NGGD. First, NGGD included a series of Group level costs, allocated to the gas distribution business, in its C&C cost category. We have moved these costs to the most appropriate cost categories, to match the external benchmarks and/or the activities performed by the other GDNs[105]. The adjustments to costs in 2006/07 are as follows:

- group finance (insurance) amounting to £0.16m has been moved to insurance;
- group finance and group internal audit amounting to £1.27m has been moved to finance, audit and regulation;
- group HR amounting to £0.78m has been moved to HR; and
- tax amounting to £0.37m has been moved to finance, audit and regulation.

10.6 Second, NGGD included costs related to de minimis services, amounting to £0.15m in 2006/07[106]. This adjustment is discussed further in Section 5.

10.7 We asked NGGD for a breakdown of C&C costs[107]. This information was not provided at the activity cost level. The table below summarises C&C costs, as submitted by the NGGD and our adjustments for 2006/07.

104 NGGD. Response to LE-NGG-088. Presentation, LECG cost visit to NGGD, 17 November 2006, page 38.

105 NGGD. Response to LE-NGG-088.

106 NGGD. Response to LE-NGG-094.

107 Question LE-NGG-003.

Table 77: Total 2006/07 C&C costs

Controllable operating activities	2006/07 £m
Total costs provided by NGGD	10.67
Less group finance (insurance) reclassified to insurance	(0.16)
Less group finance and internal audit reclassified to FAR	(1.27)
Less group HR reclassified to HR	(0.78)
Less tax reclassified to FAR	(0.37)
Less support service costs associated with de minimis activities	(0.15)
Total adjusted C&C cost	7.94

Source: NGGD. Response to LE-NGG-088, LE-NGG-094; GDPCR 5 year BPQ table B2.

Benchmarking analysis

10.8 We have benchmarked NGGD's C&C costs against the other GDNs, as well as against external comparisons. We have used total controllable and non-controllable cost in our benchmarking calculations for C&C costs. The table below shows the data we have used to construct NGGD's benchmarks in 2006/07.

Table 78: NGGD adjusted data, 2005/06 prices

	2006/07 £m
Adjusted C&C cost	7.9
NGGD total controllable and non-controllable operating costs *	607.8

Source: NGGD. GDPCR 5 year BPQ tables B1 and B2. These figures reflect the adjustments outlined in paragraph 10.4. * Controllable and non-controllable costs reflect expenditure on price-controlled areas. We have not included de minimis and excluded services within total costs.

Approach to benchmarking C&C costs

10.9 Our benchmarking of C&C costs consisted of two steps. First, we benchmarked the GDNs' cost performance against each other. Second, we compared current GDN performance against a third party benchmark. We have identified a number of potential external comparators for C&C costs.

- Deloitte's TPCR report benchmarked National Grid's 2004/05 corporate affairs costs as a percentage of total operating costs. This assessment

considered the following activities: corporate affairs, corporate responsibility, general counsel, risk compliance, investor relations, media relations, company secretariat and communications[108];

- Arthur Andersen assessed Transco's 2001 corporate costs, as a percentage of total operating costs, and as a percentage of total revenue. This assessment featured two sets of activities. First, the low cost scenario included the following activities: corporate affairs, investor relations, media and public relations, corporate communications and foundation, including Transco HQ communications. Second, the high cost scenario included the following activities: corporate affairs, including each of the Transco's HQ communications and customer related activities[109]; and
- Deloitte included an analysis of UK electricity distribution companies' 2004/05 corporate costs[110]. The activities in this study included both corporate and legal areas, but excluded treasury and group finance costs. The activities are incompatible with the list of activities defined by Ofgem for the GDPCR.

10.10 Both the Deloitte and Andersen studies used a narrower activity definition of C&C costs for their benchmarking analysis, as compared with Ofgem's GDPCR list of C&C activities. In order to make these benchmarks comparable with NGN's C&C costs, we adjusted the costs used by Deloitte and Andersen. First, we re-stated the benchmark for the same set of activities as defined by the GDPCR. We did this by using the original activity cost data reported by Deloitte and Andersen in each of their respective reports. The table below summarises the impact of our restatement on the C&C costs used by Deloitte and Andersen.

108 Deloitte TPCR report. Pages 82-83.

109 Andersen Transco report. Pages 47-48.

110 Deloitte TPCR Report, ibid.

Table 79: Transco and National Grid benchmark C&C activity costs

Source	Data	Activity cost £m
National Grid 2004/05	Deloitte C&C costs	20.20
National Grid 2004/05	LECG restated Deloitte C&C costs	34.50
Transco 2001	Andersen C&C costs (low savings scenario)	13.25
Transco 2001	Andersen C&C costs (high savings scenario)	15.33
Transco 2001	LECG restated Andersen C&C costs	37.60

Source: Deloitte. Andersen. LECG analysis.

10.11 We then applied the efficiency saving recommended by Deloitte and Andersen to the restated C&C costs, to calculate efficient costs. Overall, Deloitte recommended an efficiency adjustment from National Grid's 2004/05 costs of between £0.90m and £3.30m. Andersen recommended an efficiency adjustment from Transco's 2001 costs of between £2.61m and £7.03m. The adjusted benchmark costs are shown in the table below.

Table 80: Transco and National Grid C&C activity costs, restated for the GDPCR list of activities, adjusted for efficiency

£m	Low savings scenario	High savings scenario
Transco 2001 (restated)	34.99	30.57
National Grid 2004/05 (restated)	33.60	31.20

Source: Andersen. Deloitte. LECG analysis.

10.12 While we have been able to restate both the Andersen Transco 2001 and Deloitte National Grid 2004/05 C&C activity costs in terms of the GDPCR activities, the Transco benchmark is more than five years old. Therefore, we believe it is more appropriate to use the more up-to-date restated National Grid 2004/05 benchmark as the external benchmark.

10.13 We have not benchmarked the GDNs' C&C costs against the electricity distribution companies. The available information for electricity distribution combines corporate and legal costs, and excludes treasury and group finance costs. This is incompatible with the list of activities defined by Ofgem for the GDPCR.

10.14 We believe that the electricity distribution benchmark would not add to our analysis. By inference, it appears that the GDNs appear more efficient than the electricity distribution companies. While we have not compared C&C costs directly, because the scope of activities in the available information is not the same, we note that Deloitte found National Grid's 2004/05 C&C costs to be more efficient than the electricity distribution costs benchmark[111]. Our analysis has also shown that in general, the GDNs C&C costs are more efficient than National Grid's 2004/05 C&C costs.

Benchmarking C&C costs between GDNs

10.15 A key driver of C&C costs is the size of a company's operations. We have chosen to use total controllable and non-controllable operating costs to rebase the GDNs' C&C costs because we believe that they are a reasonable indicator of the relative size of a GDN's operations and because the Deloitte external benchmark used the same metric. The metrics we have used are shown in the table below.

Table 81: C&C costs as a percentage of total controllable and non-controllable operating cost across GDNs in 2006/07

	NGGD	NGN	SGN	WWU
Benchmarked C&C costs 2006/07 (£m, 2005/06 prices)	7.94	1.76	1.68	2.06
2006/07 performance	1.31%	1.05%	0.48%	1.21%

Source: GDNs. GDPCR 5 year BPQ tables B1 and B2. LECG analysis.

10.16 We have calculated the median and top quartile results from the comparative GDN performances. We have benchmarked NGGD's C&C cost performance against other GDNs in 2006/07.

[111] Deloitte TPCR Report. Page 83. We assume that this finding was based on a comparable datasets.

Table 82: NGGD performance against other GDNs in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency ratio	Implied savings £m
Low savings	1.13%	1.31%	0.87	1.06
High savings	0.91%	1.31%	0.69	2.44

Source: LECG analysis.

10.17 Under the high saving scenario, our analysis suggests potential efficiency savings of £1.06m. Under the high saving scenario, our analysis suggests potential efficiency savings of £2.44m.

Benchmarking costs against third party studies

10.18 We have compared NGGD's C&C costs as a percentage of total operating costs against the third party benchmarks. We have set out in the table below the National Grid benchmarking metric.

Table 83: National Grid benchmarking metric

Metric	Low savings 2004/05 £m	High savings 2004/05 £m
Restated C&C costs	33.60	31.20
Total regulated operating costs	2,827	2,827
C&C cost / total regulated operating costs	1.19%	1.10%

Source: National Grid. Deloitte. LECG analysis. We have included total operating costs for Transco's transportation business as well as for NGC's transmission and interconnectors businesses. Transco plc. "*Regulatory accounting statements 2004/05*". p10. NGC plc. "Regulatory *accounts 2004/05*". Page 6.

10.19 The table below shows NGGD's C&C cost performance against the benchmark.

Table 84: NGGD performance against C&C function third party study benchmark (2006/07)

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	1.19%	1.31%	0.91	0.72
High savings	1.10%	1.31%	0.84	1.24

Source: Deloitte. LECG analysis.

10.20 Under the high saving scenario, our analysis suggests potential efficiency savings of £0.72m. Under the high saving scenario, our analysis suggests potential efficiency savings of £1.24m.

10.21 We note that Deloitte found efficiencies within National Grid's 2004/05 corporate affairs costs, of between 7% and 24% of benchmarked costs[112]. We have restated National Grid's costs for a wider scope of C&C activities, taking the efficiencies derived by Deloitte. This analysis has given a range of further NGGD efficiencies between 8% and 14% of benchmarked cost, as shown in the table above. We would expect this range to narrow if the company is seeking efficiency savings over time.

10.22 We have not benchmarked GDN costs to the electricity distribution companies, as discussed in paragraph 10.14.

[112] Deloitte TPCR Report. ibid.

Cost trend and qualitative review

10.23 NGGD's C&C forecast is shown in the table below.

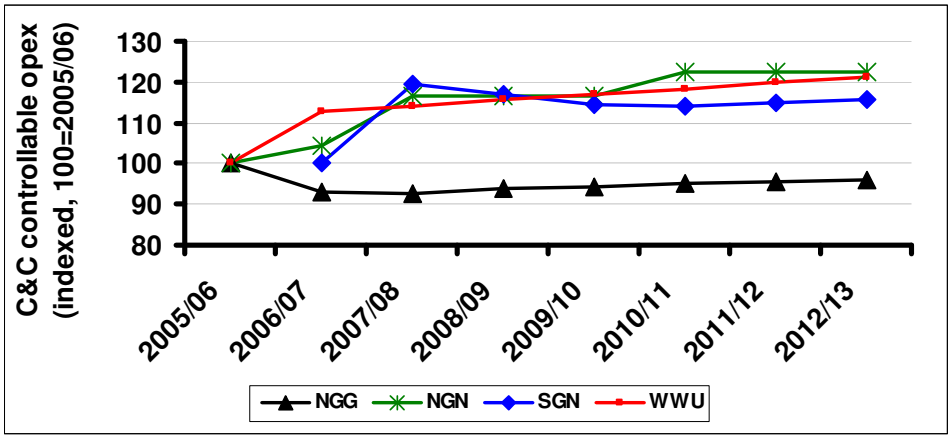
Table 85: NGGD adjusted forecast C&C costs in 2005/06 prices

(£m, 2005/06 prices)	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-13/14
C&C per BPQ (£m)	11.57	10.67	10.59	10.68	10.73	10.77	10.82	10.87	0.3%
LECG adjustments	(3.03)	(2.73)	(2.67)	(2.67)	(2.67)	(2.67)	(2.67)	(2.67)	
Adjusted C&C costs	8.54	7.94	7.92	8.01	8.06	8.11	8.15	8.20	0.5%
Annual growth rate	-	(6.9%)	(0.4%)	1.1%	0.7%	0.5%	0.5%	0.6%	

Source: NGGD. GDPCR 5 year BPQ table B2. LECG analysis. Adjustments explained paragraph 10.4.

10.24 The figure below shows the forecast trend in C&C costs for each of the GDN groups, after LECG adjustments, over the price control period.

Figure 6: Forecast GDN adjusted C&C costs



Source: Each of the GDNs. GDPCR 5 year table B2. LECG analysis. SGN is indexed starting at 2006/07.

10.25 Between 2006/07 and 2012/13, NGGD forecasts a £0.26m increase in annual expenditure on C&C, in real terms, after LECG adjustments. NGGD stated that the "*cost profile for Corporate costs is broadly flat with the plan assuming that*

significant upward pressure from real earnings & pension increases can be mitigated by efficiency savings"[113].

10.26 NGGD has provided a breakdown of forecast C&C efficiencies across the price control period[114]. We have adjusted a number of Group level C&C activities to other cost categories. Based upon this reallocation of activities, NGGD has allocated its forecast C&C efficiencies between FAR (17%), HR (7%) and the remaining C&C (76%) activities. The table below shows the annual forecast efficiency savings, allocated to the different cost categories, as well as to the adjusted C&C activities.

Table 86: NGGD C&C efficiency savings, allocated between cost categories

2005/06 prices	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Total annual unadjusted C&C efficiency saving (£m)	1.02	0.22	0.02	0.12	0.02	0.12	0.02
Annual efficiency saving from C&C activities adjusted to F&A (£m)	0.17	0.04	0.00	0.02	0.00	0.02	0.00
Annual efficiency saving from C&C activities adjusted to HR (£m)	0.07	0.02	0.00	0.01	0.00	0.01	0.00
Annual efficiency saving from unadjusted C&C activities related to adjusted C&C (£m)	0.78	0.17	0.02	0.09	0.02	0.09	0.02
Cumulative savings to adjusted C&C (£m)	0.78	0.94	0.96	1.05	1.06	1.16	1.17

Source: NGGD. Response to LE-NGG-135.

10.27 We have been able to benchmark investor relations activities, amounting to £0.19m[115], which Ofgem disallowed as part of the TPCR. Ofgem stated that National Grid's investor relations were responsible for "*interaction with institutional equity investors and market analysts*"[116]. It concluded that these costs, allocated to the transmission business, should have been absorbed into National Grid's treasury function.

113 NGGD. Response to question LE-NGG-112.

114 NGGD. Response to question LE-NGG-135.

115 NGGD. Response to question LE-NGG-088.

116 Ofgem. "*Treatment of National Grid's corporate centre costs for TPCR*".

10.28 Ofgem made this assessment as part of the TPCR, and the potential efficiencies identified related specifically to National Grid. In reviewing the BPQ data, it is not clear that all GDNs have separated out costs related to investor relations activities from their other corporate costs. As such, we have included investor relations costs in the benchmarking analysis. Any duplication between investor relations and treasury or other corporate costs should form part of the inefficiencies found through this assessment. As such, we do not propose to make an explicit adjustment for investor relations costs as additional efficiencies.

Conclusions

10.29 When compared against the other GDN cost performance in 2006/07, we found NGGD to be inefficient. Under the low savings scenario, we found efficiencies of £1.06m, and under the high savings scenario, we found efficiencies of £2.44m.

10.30 The external benchmark also found NGGD to be inefficient. Under the low savings scenario, we found efficiencies of £0.72m, and under the high savings scenario, we found efficiencies of £1.24m. Ofgem expects that the GDNs should at least achieve the benchmarks set by the other GDNs.

10.31 We have analysed NGGD's C&C trend. NGGD has not provided further details that would enable us to confirm the trend. This might need to be revisited once Ofgem concludes on allowable increases in real wage rates.

10.32 From the costs that we have benchmarked, we highlight that Ofgem excluded investor relations costs from the TPCR. NGGD reported an allocation of investor relations of £0.19m in 2006/07. We do not propose to exclude these costs from the efficient level, but highlight that we believe that part of the efficiency saving found through the benchmarking exercise relates to the potential duplication. Ofgem is currently considering its position on the treatment of these costs.

10.33 NGGD's cost forecast already includes adjusted C&C efficiency savings. These efficiencies should not be double counted. Ofgem needs to assess the allowance for real cost increases. Our projection of efficient C&C costs over the price control is based on the efficient level of 2006/07 costs derived through our benchmarking analysis. In line with other cost categories, no allowance for general real cost growth has been included in our projection, if they are above benchmarked efficient costs.

10.34 Our conclusions under the low savings scenario are shown in the table below.

Table 87: LECG conclusions - low saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted C&C costs (£m)	8.01	8.06	8.11	8.15	8.20
LECG conclusions - low saving scenario (£m)	6.88	6.88	6.88	6.88	6.88
Implied efficiency savings (£m)	1.13	1.18	1.22	1.27	1.32

Source: LECG analysis.

10.35 Our conclusions under the high saving scenario are shown in the table below.

Table 88: LECG conclusions - high saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted C&C costs (£m)	8.01	8.06	8.11	8.15	8.20
LECG conclusions - high saving scenario (£m)	5.51	5.51	5.51	5.51	5.51
Implied efficiency savings (£m)	2.50	2.56	2.60	2.64	2.69

Source: LECG analysis.

11 Human resources

Introduction

11.1 In this section, we set out our findings in relation to NGGD's controllable human resources ("HR") costs. We first provide an overview of the activities performed by NGGD. We then summarise our benchmarking analysis of controllable HR costs in 2006/07. We then review HR costs over the period 2006/07 to 2012/13 and provide a high-level qualitative review of the factors underlying the forecast. Finally, we provide our conclusions on the efficiency of NGGD's HR costs. We have not performed any historical trend analysis, for reasons explained in paragraph 6.3.

Overview

11.2 Controllable HR operating costs for 2005/06 totalled £12.53m. These costs are forecast to total £15.78m[117] in 2006/07. We have benchmarked HR costs from 2006/07, as costs in 2005/06 did not represent a steady state year, for reasons explained in paragraph 4.13

11.3 Ofgem defined HR activities to include the full range of professional activity from recruitment to retirement and from professional HR advice to directly resolving grievances[118]. Specific activities include the costs of payroll; HR advice to management and staff; management development; provision of technical training and the costs of both graduate trainees and apprentices[119]. We have included employee relations costs to ensure comparability with the external benchmarks. We have included pension administration and learning and development within total HR costs. However, from this total we make certain adjustments to ensure comparability across benchmarks, which are explained below.

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117 NGGD. GDPCR 5 year BPQ table B2. We have subsequently adjusted the level of total FAR cost, as described in 11.4.

118 Ofgem. "*Guidance to BPQ 5 year: Appendix 2*".

119 GDNs differed in their treatment of graduate and apprentice cost and not every GDN trains graduates and/or apprentices. Some GDNs have included the costs of the training scheme within HR costs, while others have also included the salary costs of graduates/apprentices being trained. The external benchmarks did not explicitly include the costs for graduates/apprentice training schemes or the salary costs of staff being trained. We have removed these costs from the HR cost benchmarks and they are assessed in turn, in our qualitative assessment. NGGD operates both graduate and apprentice training schemes. Both the salary and training costs for graduates and apprentices are included in the HR cost. NGGD. Response to LE-NGG-106.

11.4 We have made three adjustments to the figures submitted by NGGD to derive total HR figures;

- NGGD included costs related to de minimis services, amounting to £0.92m in 2006/07[120]. We have included further details of this adjustment in Section 5;
- NGGD included payroll processing costs in its HR cost category, amounting to £0.25m in 2006/07[121]. We have added this activity cost into the finance, audit and regulation function in order to be consistent with external benchmarks; and
- NGGD included an allocation of group HR costs in corporate centre and communication, amounting to £0.78m in 2006/07[122]. These costs have been reclassified as HR costs.

11.5 We asked NGGD for a breakdown of HR costs[123]. This information was not provided to the level of activity costs, although NGGD has provided specific activity costs, when further requested. The table below summarises HR costs at a high level of aggregation, submitted by the NGGD and our adjustments for 2006/07.

Table 89: Total 2006/07 HR costs

Controllable operating activities	2006/07 £m
Total costs provided by NGGD	15.78
Less adjustment to remove support service costs associated with de minimis activities	(0.92)
Less payroll processing reclassified to finance, audit and regulation	(0.25)
Add group HR reclassified from corporate centre and communication	0.78
Adjusted total HR costs	15.39

Source: NGGD. LECG cost visit to NGGD, 17 November 2006; GDPCR 5 year BPQ table B2. In 2005/06 prices. * Further details of the adjustments to remove costs associated with de minimis activities from controllable opex are included in Section 5.

120 NGGD. Response to LE-NGG-094.

121 NGGD. Response to LE-NGG-092.

122 NGGD. Response to LE-NGG-088.

123 Question LE-NGG-008.

11.6 Unfortunately, we have not been able to benchmark total HR costs, as defined in the table above, due to reasons of comparability. Therefore, we have created a subset of HR costs to ensure consistency between comparators. Our comparison includes the following activities: recruitment to retirement and professional HR advice to directly resolving grievances; HR advice to management and staff; provision of technical training [124]; and employee relations[125].

11.7 Specifically, therefore, we have excluded learning and development[126], graduate and apprentice training scheme and salary costs[127]. These activities were not included in each of the external benchmarks. In addition, they could also distort the comparison across the GDNs. We comment further on these costs in the qualitative review section below.

Table 90: 2006/07 HR costs used in the LECG benchmarking exercise

Controllable operating costs in 2005/06 prices	2006/07 £m
Total adjusted HR cost	15.39
Less learning and development costs	(4.60)
Less graduate and apprentice salary costs	(2.50)
Less graduate and apprentice training scheme costs	(3.50)
Total HR costs for benchmarking	4.79

Source: NGGD. Response to LE-NGG-007, LE-NGG-106; GDPCR 5 year BPQ table B2.

Benchmarking analysis

11.8 We have benchmarked NGGD's HR costs against the other GDNs, as well as against external comparisons. We have used total revenue in our benchmarking calculations for HR costs, to ensure consistency with external benchmarks. This approach is consistent with other efficiency studies we have reviewed. We have

124 This includes the capture of training records, compliance monitoring and reporting of all staff records and the scheduling and administration of training requirements, which we understand NGGD includes in its HR function. NGGD. LE-NGG-136.

125 This includes the administration of benefits and the costs of running an employee assistance programme, which we understand NGGD includes in its HR function. NGGD. LE-NGG-137.

126 NGGD. Response to LE-NGG-007.

127 NGGD included graduate and apprentice training scheme costs, as well as the costs of the salaries paid to the graduates and apprentices. NGGD. Response to LE-NGG-106.

also used total FTE figures to benchmark the GDNs. FTEs represent the total staffing full time equivalents across the GDN, including both operational and support service employees.

11.9 The table below shows NGGD's adjusted total controllable and non-controllable operating costs and price controlled revenues for 2006/07.

Table 91: NGGD adjusted data, 2005/06 prices

	2006/07
NGGD adjusted HR cost (£m)	4.79
National Grid Shared Service HR FTE[128]	131.0
NGGD adjusted revenue (£m)	1,077.52
NGGD total controllable and non-controllable operating cost (£m)*	607.83
National Grid, transmission and distribution total FTEs (includes shared service FTEs)[129]	9,917.00

Source: NGGD. GDPCR 5 year BPQ tables B1 and B2; Responses to LE-NGG-109, LE-NGG-141. LECG analysis. * Controllable and non-controllable costs reflect expenditure on price-controlled areas. We have not included de minimis and excluded services within total costs. Total operating costs reflects the adjustments to indirect operating costs mentioned in this report.

Approach to benchmarking HR costs

11.10 We benchmarked the GDNs against comparative companies outside of the gas distribution industry. We identified a number of sources that could have been used:

- GBP HR benchmarking study, 2006[130]. This study was commissioned in 2006 by LECG, specifically for benchmarking the HR functions of the GDNs. This study considered the relevant HR costs from 40 comparable companies (six utility companies, with a further 20 from related industries[131]). The average turnover of all of the companies was £700m and the average FTE was 3,500. Sixteen firms are based in Europe. The

128 National Grid Shared Services function employs 177 HR FTEs, 46 HR staff are engaged in learning and development and pensions management. These activities sit outside our benchmarking assessment. Therefore, we have stripped out the relating FTEs. NGGD. Response to LE-NGG-141.

129 NGGD. Response to LE-NGG-109.

130 GBP. "*HR benchmarking study*". Commissioned by LECG. 2006.

131 The related sectors include manufacturing, mining, technical and wholesale. These industries require logistics, the use of heavy machinery and engineering skills.

activities included compensation, benefits, employee relations, labour relations, training, HR performance management, recruiting, staffing, managing change and diversity, HR policy compliance, HR file management, HR planning and HR organisational development. This set of activities is comparable to the activities performed by the GDNs. We have used this dataset, as it is the most recent benchmarking survey;

- BNA HR department benchmarking and analysis 2004[132]. This study involved a large survey of 950 organisations, across 20 different industries. It was used in LECG's recent benchmarking of Royal Mail's HR costs. BNA present benchmarking metrics for companies of different workforce size. We have used this information to verify the GBP benchmark measures above;
- Deloitte included a PwC/Saratoga study for National Grid's 2004/05 costs in its TPCR Report[133]. National Grid commissioned Saratoga to undertake a benchmarking exercise of its HR function. This study included companies that were comparable with National Grid's UK regulated businesses, as well as companies from its European database. The activities covered were broadly consistent to the activities defined by Ofgem[134]. We have used this information to verify our findings;
- WCCFO SG&A benchmarking metrics[135]. As part of the 2003 finance benchmarking initiative, WCCFO benchmarked a number of corporate functions including HR, for comparator companies. This report is older than the more up-to-date GBP benchmark. We have decided not to include this benchmark in our assessment; and
- Deloitte assessed electricity distribution company HR costs as part of the TPCR. The report does not fully specify the scope of HR activities included in the assessment. However, we understand from its report, that

132 BNA in collaboration with the Society for Human Resource Management. "*HR Department Benchmarking and Analysis*". 2004.

133 Deloitte TPCR Report.

134 The Saratoga benchmark excludes "learning and development" costs. This activity was included in Ofgem's list of cost category activities. Only two GDNs conduct a formal learning and development scheme.

135 WCCFO. "*2003 Finance Benchmarking Initiative*". 2003.

the HR costs included learning and development costs, which sit outside the scope of HR costs defined by Ofgem for the GDPCR.

11.11 We have considered the outcomes of benchmarking between the different studies and have chosen to rely primarily on the GBP study because it represents the most up-to-date dataset and because it has been independently commissioned for the purposes of this report. In addition, we understand its detailed activity composition and can confirm that it is consistent with the activities defined by Ofgem. As verification, we have benchmarked NGN's HR costs against the BNA study and a range of Saratoga benchmarks. The GBP study expressed HR costs as a function of total revenue, while the Saratoga and BNA studies used total operating costs to control for the size of the company.

11.12 We have also compared HR FTEs as a percentage of total FTEs. Each of the GBP, BNA and Saratoga reports contained data for this metric[136]. We have used the GBP results as the benchmark, because this represents the most up-to-date data. However, it is important to realise that a benchmark based on FTEs, is only a partial measure of efficiency. Unlike cost based efficiency metrics, the FTE metric assesses the efficient level of HR FTEs, rather than the efficient level of HR cost, directly. While a high number of HR FTEs could imply a higher HR cost, this is not guaranteed and would depend on relative wage rates. It is also the case that low HR FTEs may mask the true workload of a HR department, if the functions were outsourced. The FTE metric may conclude that a heavily outsourced HR department, with a low number of employed FTEs may be efficient, whereas the HR costs could be either efficient or inefficient. In both of these cases, the HR FTE benchmark efficiency result would not fully assess the true efficiency of the HR costs. We believe therefore that the efficiency of HR costs should be based on the revenue and cost metrics, rather than the FTE metrics.

Benchmarking HR costs between GDNs

11.13 We have used HR costs as a percentage of total adjusted price controlled revenue to normalise the data across the GDNs, as given in the table below.

[136] The Saratoga and BNA studies included the metric "total FTE per HR FTE". We have inverted the results of these benchmarks, in order to make them comparable with GBP "HR FTE as a percentage of total FTE".

Table 92: HR costs as a percentage of total adjusted revenue across GDNs in 2006/07

	NGGD	NGN	SGN	WWU
Benchmarked cost 2006/07 (£m, 2005/06 prices)	4.79	0.78	3.20	0.75
2006/07 performance	0.44%	0.29%	0.54%	0.27%

Source: GDNs. GDPCR 5 year BPQ tables B1 and B2. LECG analysis.

11.14 In addition, we have crosschecked this benchmark, using two further measures. The first measure is based on HR costs as a ratio of total controllable and non-controllable operating costs, as seen in the table below.

Table 93: HR costs as a percentage of total controllable and non-controllable operating costs across GDNs in 2006/07

	NGGD	NGN	SGN	WWU
Benchmarked cost 2006/07 (£m, 2005/06 prices)	4.79	0.78	3.20	0.75
2006/07 performance	0.79%	0.46%	0.91%	0.44%

Source: GDNs. GDPCR 5 year BPQ tables B1 and B2. LECG analysis.

11.15 We have also compared GDN HR FTEs as a ratio of total FTEs.

Table 94: HR FTEs as a percentage of total FTEs across GDNs in 2006/07

	NGGD[137]	NGN	SGN	WWU
Benchmarked HR FTEs 2006/07 (£m, 2005/06 prices)	131.0	9.0	15.0	5.5
2006/07 performance	1.32%	0.75%	0.46%	0.48%

Source: GDNs. GDPCR 5 year BPQ tables B3.1. LECG analysis.

11.16 We have calculated the median and top quartile results from the comparative GDN performances and benchmarked NGGD's HR cost performance against them. The table below shows the results based on HR costs as a percentage of total price controlled revenue in 2006/07.

[137] National Grid's HR costs are incurred by a single department. This department services both the transmission and distribution business. NGGD has been unable to produce HR FTE data for the distribution business alone, but it was able to supply the total National Grid HR FTEs, which include staff from transmission and distribution. Therefore, we have taken total National Grid HR FTE and total National Grid FTE to create the benchmarking metric.

Table 95: NGGD performance against other GDNs, based on HR costs as a percentage of total revenue in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency ratio	Implied savings £m
Low savings	0.37%	0.44%	0.82	0.84
High savings	0.28%	0.44%	0.64	1.73

Source: LECG analysis.

11.17 The table below shows the results based on HR costs as a percentage of total controllable and non-controllable operating costs:

Table 96: NGGD performance against other GDNs, based on HR costs as a percentage of total operating costs in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency ratio	Implied savings £m
Low savings	0.63%	0.79%	0.79	0.98
High savings	0.46%	0.79%	0.58	2.00

Source: LECG analysis.

11.18 The results based on HR FTEs as a percentage of total FTEs are shown below.

Table 97: National Grid's performance against the GDNs, based on HR FTEs as a percentage of total FTEs in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency ratio	Implied savings FTEs[138]
Low savings	0.61%	1.32%	0.46	70.3
High savings	0.47%	1.32%	0.36	84.1

Source: LECG analysis.

11.19 Under the low savings scenario, our analysis indicates a saving of 70.8 HR FTEs. NGGD has an average staff cost of approximately £43,000 per FTE[139]. This implies an annual saving of £3.03m (i.e. £43,000 x 70.3). Under the high savings

[138] NGGD's implied efficiency savings have been calculated using the efficiency ratio and NGGD's benchmarked HR cost.

[139] National Grid's 2006/07 HR staff costs is forecast to be £11.63m, with total FTEs of 471. When the apprentice, graduate and other trainee costs are excluded, the HR staff cost falls to approximately £7.6m, incurred by 177 FTEs. This produces an average FTE staff cost of approximately £43,000. This figure includes costs and FTEs for learning and development, for which we have assumed a similar pay profile, compared with other HR staff. NGGD. GDPCR 5 year Table B2; responses to LE-NGG-106, LE-NGG-124 and LE-NGG-141.

scenario, our analysis indicates a saving of 84.1 HR FTEs. Based on an annual cost of approximately £43,000 per HR FTE, this implies an annual saving of £3.63m (i.e. £43,000 x 84.1).

11.20 Our primary benchmark is based on HR cost as a percentage of total revenue. Generally, the efficiencies found through using this metric are more conservative than the savings found through the HR costs as a percentage of total operating costs metric. Using the metric, under the low saving scenario, our analysis suggests potential efficiency savings of £0.84m. Under the high saving scenario, our analysis suggests potential efficiency savings of £1.73m. The FTE benchmark appears to show that NGGD is less efficient both under the low and high savings scenarios.

Benchmarking HR costs against third party studies

11.21 We have identified a number of relevant benchmarks for assessing HR costs. First, GBP identified a comparator group of companies, using HR costs as a percentage of total revenue.

Table 98: HR costs as a percentage of total revenue using GBP

Sources	Median	Top quartile
GBP 2006	0.28%	0.17%

Source: GBP.

11.22 Second, as verification for the GBP benchmark, we consider the measure HR costs as a percentage of total operating costs, as shown in the table below.

Table 99: HR costs as a percentage of total operating costs, using third party benchmarking metrics

Sources	Median	Top quartile
Saratoga 2004/05 (National Grid comparators)	0.50%	0.30%
Saratoga 2004/05 (European companies)	0.36%	0.22%
BNA 2004 (2,500 employees and above)	0.60%	0.30%

Source: Saratoga and BNA.

11.23 Finally, as a further analytical tool, we consider studies the measure HR FTEs as a percentage of total FTEs, as shown in the table below.

Table 100: HR FTEs as a percentage of total FTEs, using third party benchmarking metrics

Sources	Median	Top quartile
GBP 2006	1.30%	0.80%
BNA 2004 (2,500 employees and above) [140]	0.60%	0.20%
Saratoga 2004/05 (National Grid comparators)	1.27%	0.93%
Saratoga 2004/05 (European companies)	1.06%	0.74%

Source: GBP, BNA and Saratoga. The BNA and Saratoga metrics were reported as FTEs per HR FTEs and have been inverted.

11.24 Our primary benchmark is based on the GBP data. The tables below show NGGD's performance against these benchmarks.

Table 101: NGGD performance against GBP HR costs as a percentage of total revenue

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.28%	0.44%	0.63	1.77
High savings	0.17%	0.44%	0.38	2.96

Source: GBP. LECG analysis.

11.25 Under the low saving scenario, our analysis suggests potential efficiency savings of £1.77m. Under the high saving scenario, our analysis suggests potential efficiency savings of £2.96m.

11.26 The table below shows NGGD's HR costs as a percentage of total operating costs, benchmarked against Saratoga's comparison for National Grid.

[140] The BNA benchmark appears to be an outlier, in comparison to both the GBP and Saratoga results. We do not have access to the original dataset in order to verify BNA's calculations. We have opted not to use the BNA benchmark because there is more up-to-date information available.

Table 102: NGGD performance against Saratoga's National Grid comparator group for HR costs as a percentage of total operating costs

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.50%	0.79%	0.63	1.75
High savings	0.30%	0.79%	0.38	2.97

Source: Saratoga. LECG analysis.

11.27 Across the GDN analysis, we have found that the Saratoga NG survey is more conservative than the Saratoga European Company Survey and the results of this benchmark broadly confirm the results of the GBP study high savings scenario. The BNA 2004 study also broadly confirms this result under the high scenario. Under the low saving scenario, our analysis suggests potential efficiency savings of £1.75m. Under the high saving scenario, our analysis suggests potential efficiency savings of £2.97m.

11.28 Finally, we consider NGGD's HR FTEs as a percentage of total FTEs, benchmarked against GBPs' comparator group.

Table 103: National Grid's performance against the GBP HR FTEs as a percentage of total FTEs metric[141]

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings FTEs[142]
Low savings	1.30%	1.32%	0.98	2.1
High savings	0.80%	1.32%	0.61	51.7

Source: GBP. LECG analysis.

11.29 We have assessed the efficiency of National Grid's HR FTE as a percentage of National Grid's distribution and transmission FTE. We have then implied the efficiency savings against NGGD's allocation of the HR costs. Under the low

[141] National Grid's HR costs are incurred by a single department. This department services both the transmission and distribution business. NGGD has been unable to produce HR FTE data for the distribution business alone, but it was able to supply the total National Grid HR FTEs, which include staff from transmission and distribution. Therefore, we have taken total National Grid HR FTE and total National Grid FTE to create the benchmarking metric, rather than assessing the distribution HR FTE and total distribution FTE.

[142] NGGD's implied efficiency savings have been calculated using the efficiency ratio and NGGD's benchmarked HR cost.

savings scenario, our analysis indicates a saving of 2.1 HR FTEs. NGGD has an average staff cost of approximately £43,000 per FTE[143]. This implies an annual saving of £0.09m (i.e. £43,000 x 2.1). Under the high savings scenario, our analysis indicates a saving of 84.1 HR FTEs. Based on an annual cost of approximately £43,000 per HR FTE, this implies an annual saving of £2.23m (i.e. £43,000 x 51.7). We have not relied on the results of the FTE metrics, for the reasons explained above.

11.30 As further confirmation to our analysis, we note that Deloitte found inefficiencies in National Grid's HR function, as part of the high savings scenario in its TPCR report[144]. Deloitte included a "lower range estimate of zero [efficiencies] reflecting the benchmarking against the NG Selected sample" [145]. However, Deloitte concluded that National Grid's HR function was inefficient by around 10% (i.e. £0.8m in absolute terms), based on an adjustment of staffing levels, using the top quartile result from Saratoga's European company benchmark, as part of its high savings scenario[145]. At the time, National Grid's HR costs, including the costs incurred by transmission and all eight GDNs achieved a cost as a percentage of total operating cost of 0.24%[146]. We note that the same top quartile Saratoga European Companies benchmark, as shown above, would have required greater efficiency savings from NGGD, in comparison to both the Saratoga National Grid comparison and GBP benchmarks. We have opted to use the GBP benchmark because it was independently commissioned for the purposes of the GDPCR, it is more up-to-date and it requires more conservative efficiency savings in comparison with the Saratoga European Companies benchmark.

[143] National Grid's 2006/07 HR staff costs is forecast to be £11.63m, with total FTEs of 471. When the apprentice, graduate and other trainee costs are excluded, the HR staff cost falls to approximately £7.6m, incurred by 177 FTEs. This produces an average FTE staff cost of approximately £43,000. This figure includes costs and FTEs for learning and development, for which we have assumed a similar pay profile, compared with other HR staff. NGGD. GDPCR 5 year Table B2; responses to LE-NGG-106, LE-NGG-124 and LE-NGG-141.

[144] We understand that Ofgem did not require this adjustment in its final proposals.

[145] Deloitte TPCR Report, page 88.

[146] NGGD's HR costs have increased between 2004/05 and 2006/07. NGGD. GDPCR 5 year BPQ table B2.

Cost trend and qualitative review

11.31 NGGD forecasts a fluctuation in HR costs, as shown in the table and figure below.

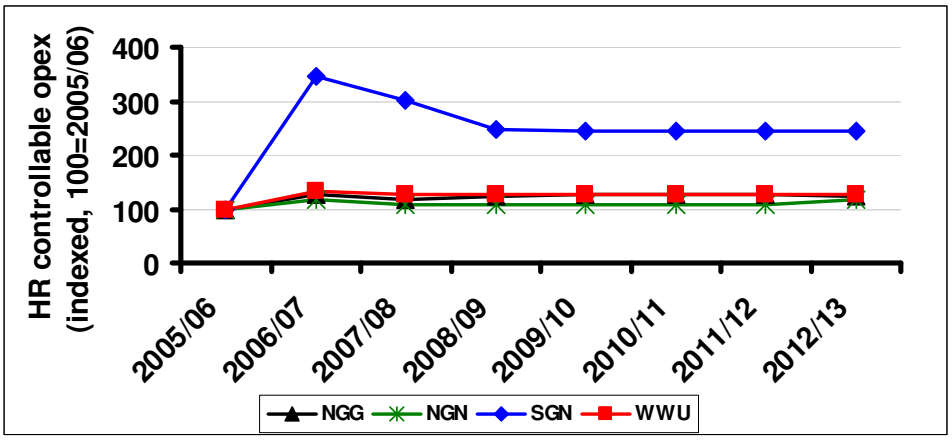
Table 104: NGGD adjusted forecast HR costs in 2005/06 prices

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
HR per BPQ (£m)	12.53	15.78	14.98	15.06	15.61	15.60	15.46	15.35	(0.5%)
LECG adjustments	(0.29)	(0.39)	(0.05)	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	
Adjusted HR operating costs (£m)	12.24	15.39	14.94	15.02	15.58	15.56	15.43	15.33	(0.1%)
Annual growth rate	-	25.7%	(2.9%)	0.6%	3.7%	(0.1%)	(0.8%)	(0.7%)	

Source: NGGD. GDPCR 5 year table B2. LECG analysis.

11.32 The figure below shows the forecast trend in HR costs for each of the GDN groups, before LECG adjustments, over the price control period.

Figure 7: Forecast GDN HR costs



Source: Each of the GDNs. GDPCR 5 year table B2. LECG analysis.

11.34 Between 2006/07 and 2012/13, HR costs decrease by around £0.06m in total, in real terms, after LECG adjustments. HR costs fluctuate across this period.

NGGD explained the change in HR costs between 2005/06 and 2012/13 as follows[147]:

- NGGD included Distribution Support Directorate costs in its HR costs from 2006/07 onwards. These costs covered "*Skills and Competency activities"* and totalled £0.60m in 2006/07[148]. Prior to October 2006, these costs had been included in the work management cost category;
- NGGD stated that it was increasing its distribution apprentice intake, "*as a result of National Grid's demographic profile and nationally recognised skills shortages in the engineering sector*";
- NGGD stated that its graduate recruitment levels up to 2005/06 were higher than normal to catch up with earlier years when NGGD had recruited insufficient graduates. In future years, NGGD planned to reduce its graduate intake costs "*to match [NGGD's] future business requirements*";
- NGGD had forecast a "*real earnings and pensions increase reflecting UK earnings growth and increased pensions contribution rates*";
- NGGD stated that there was an increase in HR workload caused by "*increased effort meeting skills shortages, the increased level of apprentices, policy and procedure development responding to the impact of external legislation, supporting business change programmes and major business initiatives*". We note however, that this additional workload peaks in the benchmarked year, 2006/07, and reduces thereafter, between 2007/08 and 2009/10; and
- the Shared Services Initiative and the introduction of the new ERP system was forecast to "mitigate the upward cost pressure", by 2012/13. NGGD stated that the efficiency savings would equate to a reduction of £0.50m in HR costs between 2005/06 and 2013/14.

11.35 NGGD has profiled its forecast increases in workload and efficiency savings. The efficiencies attributed to the new ERP system and shared service initiative relate to HR activities conducted in 2006/07. Separately, NGGD forecast efficiencies in

147 NGGD. Response to LE-NGG-110 and LE-NGG-111.

148 NGGD. Response to question LE-NGG-120.

the C&C activities. We have adjusted into Group HR costs in HR that were originally defined within C&C. NGGD has allocated 7% of the overall C&C efficiencies to this adjusted activity, as described in paragraph 10.26[149]. The table below shows forecast efficiency savings.

Table 105: NGGD HR change in workloads and efficiency savings

2005/06 prices	06/07	07/08	08/09	09/10	10/11	11/12	12/13
Annual HR workload increase (decrease) (£m)	-	(0.23)	(0.22)	(0.04)	-	-	-
Cumulative HR workload increase (decrease) (£m)	-	(0.23)	(0.45)	(0.49)	(0.49)	(0.49)	(0.49)
Annual efficiency saving from Shared Service Initiative and ERP system (£m)	-	-	-	(0.07)	(0.21)	(0.11)	(0.11)
Annual efficiency saving from C&C activities adjusted to HR (£m)	-	(0.02)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)
Cumulative efficiency saving (£m, from 2006/07)	-	(0.02)	(0.02)	(0.10)	(0.31)	(0.43)	(0.54)

Source: NGGD. Response to LE-NGG-135 and LE-NGG-139.

11.36 NGGD stated that it was increasing its intake of apprentices between 2005/06 and 2012/13. At the start of 2005/06, NGGD employed 50 apprentices, increasing to 100 by the end of the year. Apprentice numbers increased further during 2006/07 and 2007/08. This increase in FTEs explains the growth in salaries. NGGD's apprentice intake, salary costs and training scheme costs are shown below.

149 NGGD. Response to LE-NGG-135.

Table 106: NGGD apprentice numbers, salary costs and training scheme costs, in 2005/06 prices

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Apprentices	100	150	150	150	150	150	150	150	0.0%
Apprentice salary costs (£m, 2005/06 prices)	1.20	1.70	2.00	2.00	2.00	2.00	2.00	2.00	2.7%
Apprentice training scheme costs (£m,)	1.80	2.70	2.70	2.90	3.00	2.90	2.90	2.90	1.2%
Total apprentice costs (£m, 2005/06)	3.00	4.40	4.70	4.90	5.00	4.90	4.90	4.90	1.8%

Source: NGGD. Responses to LE-NGG-006, LE-NGG-106, LE-NGG-113. LECG analysis.

11.37 The table below shows NGGD's forecast graduate and other trainee salary costs and training scheme costs.

Table 107: NGGD's graduate and other trainee salary costs and training scheme costs, in 2005/06 prices

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Graduates and other trainees	35	36	36	36	36	36	36	36	0.0%
Graduate and other trainees salary costs	1.00	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.0%
Graduate and other trainees training scheme costs	1.10	0.80	0.80	0.70	0.70	0.70	0.70	0.70	(2.2%)
Total graduate and other trainees costs	2.10	1.60	1.60	1.50	1.50	1.50	1.50	1.50	(1.1%)

Source: NGGD. Responses to LE-NGG-106, LE-NGG-113, LE-NGG-123, LE-NGG-124. LECG analysis.

11.38 Over the period, 2006/07 to 2012/13, NGGD's graduate FTEs remain constant at 15 and other trainee FTEs remain constant at 21. The cost figures submitted broadly confirm NGGD's explanation of overall HR cost movement.

11.39 NGGD forecast real salary increases across the period. The table below shows HR salary costs, net of apprentice, graduate and other trainee salaries, before LECG adjustments. It also shows HR FTEs for the whole of National Grid's

shared service department. NGGD stated that it could not separate HR FTEs between its distribution and transmission businesses.

Table 108: NGGD salary costs; National Grid HR FTEs, before LECG adjustments, in 2005/06 prices[150]

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
NGGD HR salary costs (£m, 2005/06 prices)[151]	4.38	4.09	4.06	4.23	4.32	4.38	4.42	0.2%
National Grid HR FTEs	177	162	154	153	153	153	152	(2.5%)

Source: NGGD. GDPCR 5 year BPQ table B2; Responses to LE-NGG-113 and LE-NGG-141. LECG analysis.

11.40 NGGD's HR salary costs increase by 0.2% per year over the period. National Grid's HR FTEs fall by 2.5%, per year, on average. This might imply an underlying increase in HR salary costs of 2.7%, per year, on average[152]. However, we note that we are comparing NGGD HR costs against National Grid HR FTEs. Since HR activities are conducted by a shared service department, we have assumed that the FTE trends for NGGD and National Grid as a whole are similar. NGGD has not provided a percentage growth figure for its HR FTEs across the period.

11.41 A number of costs require further comment. First, we did not include learning and development costs in our benchmarking. NGGD reported learning and development costs of £4.60m in 2006/07[153]. The table below shows a comparison of GDN learning and development costs.

150 Figures include HR core, group HR, skills and competency, learning and development and pensions administrations activities.

151 NGGD salary costs are calculated without apprentice, graduate and other trainee salary costs. We have used NG's HR staff cost, allocated using NGGD's allocation to the GDNs percentage supplied in GDPCR 5 year table B2.

152 NGGD's increase in salary cost includes its employer pension contribution.

153 NGGD. Response to LE-NGG-007.

Table 109: GDN learning and development costs, 2006/07

	NGGD	NGN	SGN	WWU
Learning and development cost (£m, 2005/06 prices)	4.60	[redacted]	[redacted]	[redacted]
Total FTEs	4,259	[redacted]	[redacted]	[redacted]
Learning and development cost per FTE (£, 2005/06 prices)	1,080	[redacted]	[redacted]	[redacted]

Source: GDNs. GDPCR 5 year BPQ tables B2 and B3.1. Responses to LE-NGG-091, LE-NGG-129.

11.42 [redacted] NGGD's learning and development cost appears inefficient. [redacted] From our research more widely, it is clear that not all organisations run learning and development programmes. As such, this may be deemed an optional activity. At this stage, we do not propose to take efficiencies from this activity cost. We believe that a cost benefit analysis of such activities should be provided to prove that that they generate net benefits. Ofgem is currently considering its position on the treatment of these costs.

11.43 NGGD reported apprentice, graduate and other trainee salary costs of £2.50m in 2006/07[154]. These costs were not included in the benchmarking exercise because they were not explicitly included in the external benchmarks, or were not included in the HR cost category of any of the other GDNs. We believe that these costs should be assessed as part of the analysis of direct operating costs.

11.44 NGGD reported apprentice, graduate and other new recruit training scheme costs of £3.50m in 2006/07[155]. These costs were not included in the benchmarking exercise because they were not explicitly included in the external benchmarks, or were not included in the HR cost category of each of the other GDNs. The table below shows a comparison of GDN graduate and apprentice training scheme costs.

[154] NGGD. Response to LE-NGG-106.

[155] NGGD. Response to LE-NGG-106.

Table 110: GDN graduate and apprentice training scheme costs, 2006/07

	NGGD	NGN	SGN	WWU
Graduate training scheme costs (£m, 2005/06 prices)	0.8	[redacted]	[redacted]	[redacted]
Apprentice training scheme costs (£m, 2005/06 prices)	2.7	[redacted]	[redacted]	[redacted]
Total graduate and apprentice training scheme costs (£m, 2005/06 prices)	3.5	[redacted]	[redacted]	[redacted]
Total training scheme costs as a percentage of GDN total revenue	0.32%	[redacted]	[redacted]	[redacted]

Source: GDNs. GDPCR 5 year BPQ tables B2; response to question LE-NGG-106. SGN did not incur graduate or apprentice training scheme costs.

11.45 We have provided this information to inform Ofgem's policy decision in this area. Ofgem is currently considering its position on the treatment of these costs.

11.46 The table below shows NGGD's forecast of these costs, which we have excluded from the benchmarking analysis.

Table 111: NGGD forecast of non-benchmarked HR costs, in 2005/06 prices

	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Learning and development (£m)	4.6	3.6	3.6	4.1	4.0	3.8	3.5	(4.5%)
Apprentice, graduate and other trainee salary costs (£m)	2.5	2.8	2.8	2.8	2.8	2.8	2.8	1.9%
Apprentice, graduate and other trainee scheme costs (£m)	3.5	3.5	3.6	3.7	3.6	3.6	3.6	0.5%
Non-benchmarked HR costs (£m)	10.6	9.9	10.0	10.6	10.4	10.2	9.9	(1.1%)

Source: NGGD. Responses to LE-NGG-007 and LE-NGG-106.

11.47 NGGD reported group HR costs of £0.78m in 2006/07, allocated to NGGD[156]. As part of the TPCR determination, Ofgem disallowed a number of National Grid

[156] NGGD. Response to LE-NGG-088.

Group's costs, which had been allocated to NGT. It stated that group HR activities were a duplication of the HR activities conducted by the transmission HR team. As such, they were disallowed. We included the group HR costs within the benchmarking exercise and to the extent that these costs are duplicated, this will show up in our benchmarking results. We have therefore, not made a separate explicit adjustment for these costs.

Conclusions

11.48 Ofgem expects that the GDNs should at least achieve the benchmarks set by the other GDNs. Where an external benchmark presents a more challenging efficiency target, and where it is comparable to the GDN, we adopt the third party benchmark.

11.49 When compared against the other GDNs in 2006/07, we found HR low savings efficiencies of £0.84m and high savings efficiencies of £1.73m. Generally, the GDNs' cost performance was below the external benchmark cost metric thresholds in 2006/07. The most up-to-date GBP cost metric benchmark found low savings scenario efficiencies of £1.77m, while it found high savings scenarios efficiencies of £2.96m. We believe that in this instance it is appropriate to adopt the savings suggested by the third party benchmark.

11.50 We have analysed NGGD's HR trend. At the end of the period in 2012/13, adjusted HR costs are forecast to be £0.06m lower than in 2006/07. NGGD stated a list of reasons for an increase in cost, counterbalanced by reasons for a decrease in cost across the period. While we have been able to confirm some aspects of this explanation, including deriving a real salary increase of around 2.8%, per year, on average[157], the lack of detail in NGGD's explanation has prevented us from confirming each of the cost movements.

11.51 Our benchmarking analysis has revealed potential further efficiencies from NGGD's HR costs, during the forecast price control period. We describe in paragraph 11.35, that NGGD has allocated efficiency savings to Group HR, which was originally included in the C&C cost category, but was adjusted to HR.

[157] We have calculated real salary cost growth of 0.2%, per year, on average, between 2006/07 and 2012/13. National Grid's HR FTEs fall by 2.6%, per year, on average across the period. This might imply that the remaining HR FTEs incur underlying salary costs of 2.8%, per year, on average, between 2006/07 and 2012/13; as discussed in paragraph 11.40.

11.52 We have not been able to benchmark a number of NGGD's HR activities. From these costs, we highlight to Ofgem apprentice, graduate and other trainee salaries (£2.50m in 2006/07, increasing to £2.80m from 2007/08 onwards). Apprentice, graduate and other trainee salaries, should be reclassified and included in the direct operating costs categories. Ofgem is currently considering its position on the treatment of these costs.

11.53 Ofgem needs to assess the allowance for real cost increases. Our projection of efficient HR costs over the price control is based on the efficient level of 2006/07 costs derived through our benchmarking analysis. No allowance for general real cost growth has been included in our projection, if they are above benchmarked efficient costs. In addition, we highlight in the table below the NGGD's costs that are excluded from the benchmark. Ofgem will need to assess these costs separately.

11.54 Our conclusions under the low savings scenario are shown in the table below.

Table 112: LECG conclusions - low saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted HR costs (£m)	15.02	15.58	15.56	15.43	15.33
Less non-benchmarked HR costs (£m)	10.00	10.60	10.40	10.20	9.90
Benchmarked HR costs (£m)	5.02	4.98	5.16	5.23	5.43
LECG conclusions on benchmarked costs - low saving scenario (£m)	3.02	3.02	3.02	3.02	3.02
Implied efficiency savings from benchmarked costs (£m)	2.01	1.96	2.14	2.21	2.41

Source: LECG analysis.

11.55 Our conclusions under the high saving scenario are shown in the table below.

Table 113: LECG conclusions - high saving scenario

	08/09	09/10	10/11	11/12	12/13
Benchmarked HR costs (£m)	5.02	4.98	5.16	5.23	5.43
LECG conclusions on benchmarked costs - high saving scenario (£m)	1.83	1.83	1.83	1.83	1.83
Implied efficiency savings from benchmarked costs (£m)	3.19	3.15	3.33	3.40	3.59

Source: LECG analysis.

12 Legal

Introduction

12.1 In this section, we set out our findings in relation to NGGD's controllable legal costs. We first provide an overview of the activities performed by NGGD's legal function. We then summarise the results of our benchmarking analysis in relation to controllable legal costs in 2006/07. We also summarise our analysis of controllable legal costs over the period 2006/07 to 2013/14 and provide a high-level qualitative review of the factors underlying this forecast. Finally, we provide our conclusions on the efficiency of NGGD's legal costs. We have not performed any historical trend analysis for reasons explained in paragraph 6.3.

Overview

12.2 The National Grid group has a single legal department, providing legal services to the transmission, distribution and non-regulated businesses. National Grid's legal function underwent a major reorganisation following the National Grid/Transco merger in 2002. The merger allowed the combined firm to reduce its legal headcount and the number of external legal service providers. NGGD adopts a key, single-source suppliers approach for specific legal activities. The approach was established based on a spending review carried out by Tite & Lewis in 2004.

12.3 To ensure cost consistency across all the GDNs, we obtained a breakdown of legal costs by activity. We have reviewed this breakdown and have adjusted, where appropriate, the relevant costs to ensure comparability across GDNs. We have also sought to ensure comparability with Ofgem's definition of legal costs, which was included in its BPQ Guidance document[158]. We consider that the activities performed by NGGD and the other GDNs are sufficiently comparable for benchmarking purposes.

12.4 NGGD confirmed that its legal function provides services in the following specific areas: legal advice on energy law and regulation; legal advice on general commercial issues; litigation and disputes; information assurance; employment; risk and compliance; debt collection; property related; general legal services; trading advice; solicitor secondment; and intellectual property.

[158] Ofgem. "*GDPCR BPQ Guidance*". Appendix 2.

12.5 NGGD's legal costs are expected to total £1.96m[159] in 2006/07 and are expected to increase at an annual rate of 1.8% to £2.18m by 2012/13. The table below provides a summary of the costs incurred by NGGD's legal functions.

Table 114: Total 2006/07 NGGD legal costs

Details	2006/07 costs (£m)
Total costs provided by NGGD in its BPQ response	2.08
Less adjustment to remove support service costs associated with de minimis activities from regulated controllable opex *	(0.12)
Adjusted controllable legal costs	1.96

Source: NGGD. GDPCR 5 year BPQ table B2. NGGD response to question LE-NGG-094. * Details of the adjustment to remove costs associated with de minimis activities from controllable opex are provided in Section 5.

12.6 The table below summarises the data we have used in calculating the legal cost benchmarking metrics.

Table 115: NGGD data used in the LECG benchmarking exercise

	2006/07 (£m, 2005/06 prices)
Revenue (£m)	1,135.7
LECG adjusted revenue (£m)	1,077.5
Legal costs (£m)	2.0
Total FTE	5,040.2

Source: NGGD. GDPCR 5 year BPQ table A1, B1.1, B3.1 FTE.

Benchmarking analysis

12.7 We understand through our discussions with the GDNs and our review of third party reports that legal costs are largely transactional in nature. That is, they are driven by the level of commercial activities that occur over a given period. The level of commercial activities would normally be expected to increase with the scale of a company's operation. We consider that within the same industry, revenue can be used as a proxy to reflect the relative scale of a company's operation and the relative level of its commercial activities, even if revenue may not be a direct driver of legal costs.

[159] All costs are expressed in 2005/06 price level unless otherwise stated.

12.8 We recognise that size is not always a driver of legal activity. Other markets maybe more litigious, have a higher number of commercial transactions, or have other factors drive cost, irrespective of size. Caution is required, therefore, when comparing GDN metrics to third party benchmarks. Third party benchmarks will provide an assessment of performance against companies with average legal activity. At this stage, it is not clear whether GDNs face higher or lower legal activity in relation to such third party benchmarks.

12.9 We believe that the following metrics can be used to benchmark NGGD's legal costs:

- legal costs as a function of adjusted revenue. This metric was used in the Deloitte TPCR Report. We consider that revenue provides a good proxy for the scale of operation. This metric normalises legal costs across companies with operations of differing sizes; and
- legal cost as a function of FTEs. We consider that staff numbers also provide an indication of the scale of operation. We have used this metric as a cross check to the results derived from using a cost-revenue metric.

12.10 We have performed two benchmarking exercises. First, we benchmarked cost metrics across the GDNs. Second, we benchmarked each GDN against an independent study. Unless otherwise defined, we have based our low savings and high savings benchmarks on the median and the top quartile data points in the benchmarking samples.

Benchmarking legal costs between GDNs

12.11 We have expressed legal costs as a percentage of adjusted revenue, and per FTE, to normalise legal costs across the different comparators, as shown in the table below. Unless otherwise defined, we have based our low savings and high savings benchmarks on the median and the top quartile data points in the benchmarking samples.

Table 116: Adjusted legal costs and metrics of all GDNs in 2006/07

2006/07	Legal costs as a percentage of adjusted revenue				Legal costs per GDN FTE			
	NGGD	NGN	SGN	WWU	NGGD	NGN	SGN	WWU
Adjusted legal costs	2.0	0.8	1.0	0.7	2.0	0.8	1.0	0.7
2006/07 metric	0.18%	0.31%	0.17%	0.24%	389	704	304	585

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjusted. In 2005/06 prices.

12.12 The table below compares our selected benchmarks to NGGD's performance, and summarises the potential efficiency savings based on legal costs as a percentage of total adjusted revenue.

Table 117: NGGD performance against other GDNs based on legal costs as a percentage of total adjusted revenue in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.21%	0.18%	1.17	-
High savings	0.18%	0.18%	0.98	0.04

Source: LECG analysis.

12.13 The table below summarises potential efficiency savings based on the legal cost per total FTE metric.

Table 118: NGGD performance against other GDNs based on legal costs per total FTE in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	487	389	1.25	-
High savings	367	389	0.95	0.11

Source: LECG analysis.

12.14 Based on legal costs per FTE, NGGD's legal costs appear efficient in comparison to the other GDNs under the low savings scenario. Under the high savings scenario, our analysis suggests a potential annual saving of £0.11m. As stated in paragraph 4.34, legal costs per FTE metric can be affected by a number of factors, including outsourcing strategies, the quality of labour, etc. Consequently,

we have not used this metric and have based our efficiency assessment on legal costs as a percentage of adjusted revenue. Our analysis indicates NGGD's legal costs are efficient under the low savings scenario. Under the high savings scenario, our analysis suggests an annual saving of £0.04m

Benchmarking legal costs against third party studies

12.15 We have compared NGGD's legal costs against third party benchmarks. We have identified a number of independent studies including:

- the WCCFO 2003 benchmarking study[160], which contained legal cost metrics derived from a survey of over 300 of the world's largest corporations. This study defined legal cost as internal legal expenses (e.g. staff costs, systems costs, overhead) and external legal expenses. This study was used in LECG's review of Royal Mail's regulated mail activities;
- the Practical Law Company ("PLC") Best Practice Survey 2006, which included information on 57 leading multinational companies collected in August 2006. The survey included both internal and external legal costs. Approximately 85% of the companies surveyed were based in Europe. The 1999 Best Practice Survey was used in the Andersen Transco Report;
- the HI & LS Benchmarking Study 2004-2005[161]. This study provides information on staffing and spending data, based on 98 European law departments in eight broad industry groups and included both internal and external legal costs. A similar study on US companies was used by Deloitte in the TPCR review, and
- the PwC Global Law Department survey 2001[162], which captured data on the internal and external legal costs incurred by 18 law departments across various industries and regions, including both Europe and worldwide. It expressed legal costs as a percentage of revenue. This report is out of date, so limited reliance should be placed on this data.

12.16 Both GDNs and the studies include internal and external counsel costs, and provide an appropriate benchmark. Analysis of the studies is provided below.

160 WCCFO. "*2003 Finance Benchmarking Initiative*". 2003.

161 Hildebrandt International and Laurence Simons. "*European Law Department Benchmarking Study 2004-2005*". September 2005.

162 PwC. "*Global Law Department Survey*". 2001.

Table 119: External benchmark - legal costs as percentage of revenue benchmarks

Source	Median	Best quartile
WCCFO companies with revenue <USD 1bn, 2003	0.58%	0.46%
PwC European companies, company size unavailable*	0.20%	-
PwC Worldwide companies, median revenue USD 11.3bn	0.40%	-
PLC survey, companies with <USD 1bn revenue, 2006	0.56%	-
HI & LS Study, European companies, Fortune 500 level companies, 2004-2005	0.27%	

Source: WCCFO, PwC, Practical Law Company, HI & LS. Note: * These companies represent a sub group of the sample included in the PwC Law Department survey 2001. The median revenue of the entire sample was £11.3bn.

12.17 Due to economies of scale, we believe that it is more appropriate to benchmark NGGD's legal costs against companies with a similar size (i.e. revenue of less than USD 1bn). We have placed most reliance on the WCCFO survey because: (i) it provides legal costs by company size; (ii) it reports both the median and the top quartile figures; and (iii) the results are consistent with the more recent PLC survey. This study was used in LECG's review of the efficiency cost of Royal Mail's regulated mail activities. The table below details NGGD's performance against the WCCFO benchmarks.

Table 120: NGGD performance against WCCFO legal benchmark in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied savings £m
Low savings	0.58%	0.18%	3.19	-
High savings	0.46%	0.18%	2.53	-

Source: WCCFO. LECG analysis.

12.18 Our analysis indicates that NGGD's legal costs are lower than the selected third party benchmarks.

Cost trend and qualitative review

12.19 We have reviewed NGGD's forecast legal costs for the price control period. The table below shows the forecast trend of the adjusted legal costs.

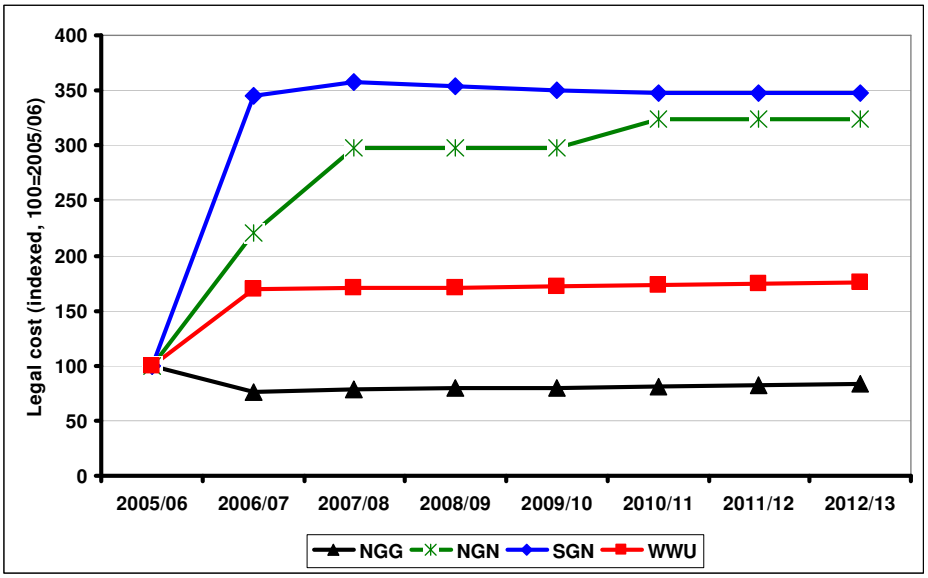
Table 121: NGGD adjusted forecast legal costs

(£m, 2005/06 prices)	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
Legal costs per BPQ	2.80	2.08	2.11	2.13	2.16	2.19	2.23	2.26	1.4%
LECG adjustments*	(0.21)	(0.12)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	
Adjusted legal costs	2.60	1.96	2.03	2.05	2.08	2.11	2.15	2.18	1.8%
Annual growth rate		(24.5%)	3.5%	1.3%	1.4%	1.1%	2.0%	1.3%	

Source: NGGD. GDPCR 5yr Table B2.1. LECG adjusted. Note: * LECG adjustments relate to the removal of the costs associated with de minimis activities from controllable opex. Further details are provided in Section 5.

12.20 The figure below shows the forecast trend of legal costs for each of the GDN groups, after LECG adjustments, over the price control period.

Figure 8: GDNs adjusted forecast legal costs



Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

12.21 We understand from Ofgem that the Unified Network Code has simplified the contractual and legal arrangements in the gas distribution industry, and consequently, operators in the gas distribution industry may be expected to incur lower legal costs in comparison to our third party benchmark. We understand that the Unified Network Code is being modified. We do not have sufficient information to quantify the impact of these modifications on the GDNs' legal costs. In producing our estimate of efficient legal costs, we have not included

any allowance for the additional legal costs that may be incurred because of these modifications.

12.22 We understand from our discussions with the GDNs that there are no specific factors, such as certain geographical areas being significantly more litigious, that would explain any material differences in legal costs between the GDNs. However, differences in legal costs might be explained by differences in local law firm hourly rates. At this stage, we have not been asked by Ofgem to investigate potential differences between legal cost rates.

12.23 NGGD's legal costs were 32.5% higher in 2005/06 than in 2006/07. We understand that higher legal costs were driven by additional legal activities relating to the sale of GDN sales and the preparation of New Service Agreements (i.e. with the newly independent GDNs).

12.24 The table above shows that NGGD's legal costs increase at an annual rate of 1.8%, on average, between 2006/07 and 2012/13. We understand that contractual terms with a number of legal services providers will be reviewed in April 2007. NGGD does not expect any major costs increases. Our review of NGGD's GDPCR BPQ Response shows that the increase in legal costs is primarily driven by the 2% annual increase in staff costs.[163]

[163] GDPCR BPQ Response Table B2.

Conclusions

12.25 The table below summarises our findings:

Table 122: Summary of findings

Benchmark	Low saving £m	High saving £m
Benchmarking of legal costs, as a percentage of revenue, against other GDNs	0.00	0.04
Benchmarking of legal costs, per FTE, against other GDNs	0.00	0.11
Benchmarking of legal costs, as a percentage of revenue, against third party benchmark	0.00	0.00

Source: LECG analysis.

12.26 NGGD's legal costs are lower than third party benchmarks. This does not imply that NGGD's legal function is necessarily efficient. Differences may be driven by market and structural differences between external comparators, as discussed in paragraph 12.21.

12.27 The comparison of NGGD and other GDNs, however, provides some evidence of relative inefficiency. NGGD's legal costs appear efficient under the low savings scenario, but under the high savings scenario, our analysis indicates an annual efficiency saving of £0.04m.

12.28 We have adopted the results of the GDNs benchmarking in calculating the potential efficiency savings. As discussed in paragraph 4.52, we consider that a GDN should at least be able to achieve the same level of efficiency implied in the GDNs benchmark. We may adopt an external benchmark only when it presents a more challenging efficiency target. In this case, we also consider that the third party benchmark may not be fully comparable.

12.29 Legal costs are forecast to increase at an annual average of 1.8%. This is driven by a 2% annual increase in real staff costs. We have not allowed for this increase in our forecast of efficient legal costs. We understand that a different Ofgem workstream is assessing allowable future wage rates. The findings of this work will be reflected in Ofgem's final determination of price controlled revenue.

12.30 Our low savings conclusions are shown in the table below.

Table 123: LECG conclusions – low savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted legal costs (£m)	2.05	2.08	2.11	2.15	2.18
LECG conclusion (£m)	1.96	1.96	1.96	1.96	1.96
Implied efficiency savings (£m)	0.09	0.12	0.15	0.19	0.22

Source: LECG analysis.

12.31 Our conclusions under the high savings scenario are shown in the table below.

Table 124: LECG conclusions – high savings scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted legal costs (£m)	2.05	2.08	2.11	2.15	2.18
LECG conclusion (£m)	1.92	1.92	1.92	1.92	1.92
Implied efficiency savings (£m)	0.13	0.16	0.19	0.23	0.26

Source: LECG analysis.

13 Procurement and logistics

Introduction

13.1 In this section, we set out our findings in relation to NGGD's procurement and logistics ("L&P") costs. We first provide an overview of the activities performed by NGGD. We then summarise the results of our benchmarking analysis of controllable L&P costs in 2006/07. We also summarise our analysis of costs over the period 2006/07 to 2012/13 and provide a high-level qualitative review of the factors underlying the forecast. Finally, we provide our conclusions on the efficiency of NGGD in relation to its L&P activities. We have not performed any historical trend analysis for reasons explained in paragraph 6.3.

Overview

13.2 The L&P activities of NGGD and National Grid's other businesses are performed by a single L&P function. The L&P function has selectively outsourced most its L&P activities, to lower overall costs. For example, in relation to fleet management and operation activities, outsourcing has allowed NGGD to reduce significantly headcount (to only eight FTEs). In some other areas, where the L&P function has an advantage over outsourcing services provides, the activities are retained in-house. These activities include warehousing, where NGGD enjoys low site rental costs

13.3 We understand that outsourcing contracts are awarded through competitive tenders. All outsourcing arrangements will be reviewed in 2007. NGGD states that it has not identified areas for further outsourcing.

13.4 The National Grid procurement function influences the procurement budget of all NGGD departments. NGGD states that this allows NGGD to lever National Grid's buying power and the procurement staff's expertise to reduce the costs of certain inputs, including IT, stationery, consultancy and hotel expenses.

13.5 To ensure cost consistency across all the GDNs, we obtained, from each, a breakdown of L&P activities. We have reviewed these breakdowns and, where appropriate, we have adjusted costs to ensure comparability across GDNs. We have also sought to ensure comparability with Ofgem's definition of L&P costs, as included in its BPQ Guidance.

13.6 NGGD confirmed that its procurement costs included the following activities: day-to-day procurement of goods and services; the procurement of capital goods; contract negotiation and monitoring; setting procurement guidelines and monitor adherence to the guidelines by business units; and managing procurement related IT systems. The table below provides a summary of the procurement costs incurred by NGGD.

Table 125: Total 2006/07 NGGD procurement costs

Controllable operating activities	2006/07 costs (£m)
Procurement costs provided by NGGD	4.3
Adjustment to remove support service costs associated with de minimis activities from regulated controllable opex *	(0.3)
Less fleet management costs reclassified to logistics	(0.4)
Adjusted costs	3.6

Source: NGGD. Responses to question LE-NGG-053 and LE-NGG-103. LECG analysis. * Further details of the adjustments to remove margins from de minimis activities from controllable opex are included in Section 5.

13.7 NGGD has confirmed that its logistics costs include the following activities: transportation; warehousing; fleet management; management of third party logistics services providers; and inventory management. The following table summarises NGGD's logistics costs.

Table 126: Total 2006/07 NGGD logistics costs

Controllable operating activities	2006/07 costs (£m)
Logistics costs provided by NGGD	2.3
Adjustment to remove support service costs associated with de minimis activities from regulated controllable opex *	(0.1)
Add fleet management costs reclassified from procurement	0.4
Add storage costs reclassified from repex (Ofgem adjustment)	1.5
Adjusted costs	4.1

Source: NGGD. Responses to questions LE-NGG-053, LE-NGG-103 and OP-NGG-026. LECG analysis. * Further details of the adjustments to remove margins from de minimis activities from controllable opex are included in Section 5.

13.8 In each of the cost categories, we have made adjustments to ensure comparability of costs across the GDNs. One of these adjustments relates to the reclassification of storage costs previously transferred to repex. It is NGGD's policy to transfer to repex support service costs that relate to repex projects. This policy has been reviewed by Ofgem as part of their work on accounting adjustments to the base year. Ofgem has proposed adjustments to reclassify these transfers to support service costs.

13.9 The following table summarises NGGD's total L&P costs.

Table 127: Total 2006/07 NGGD L&P costs

Cost category	2006/07 costs (£m)
Adjusted procurement costs	3.6
Adjusted logistics costs	4.1
Adjusted L&P costs	7.7

Source: NGGD. Responses to question LE-NGG-053 and LE-NGG-103. LECG analysis.

13.10 L&P costs are forecasted to be £7.7m[164] in 2006/07 and are expected to remain within the range of £7.5m and £7.8m over the price control period. The table below summarises the data we have used in calculating the L&P benchmarking metrics for NGGD.

[164] All prices expressed in 2005/06 price level unless otherwise stated.

Table 128: NGGD data used in the LECG benchmarking exercise

Metric	2006/07 (in 2005/06 prices)
Total opex (controllable and uncontrollable) (£m)	607.8
L&P costs (£m)	7.7
Procurement costs (£m)	3.6
Logistics costs (£m)	4.1
Total network size (km)	131,588

Source: NGGD. GDPCR 5 year BPQ Table A1, B1.1, B2.1. LECG adjusted.

13.11 We have assessed NGGD's L&P costs using two approaches. First, we reviewed the Deloitte TPCR Report on National Grid's L&P costs. Second, we benchmarked NGGD against each of the other GDNs.

Review of Deloitte TPCR Report

13.12 Ofgem commissioned Deloitte to perform an assessment of National Grid's support service costs, including the L&P costs, as part of the 2007-2012 TPCR. The following paragraphs summarises the scope and the conclusions of the Deloitte TPCR Report.

13.13 The Deloitte TPCR Report benchmarked National Grid's L&P costs against UK electricity distribution companies, using the L&P costs as a percentage of total costs metric. This analysis showed that National Grid's L&P costs were efficiently incurred.

13.14 The Deloitte TPCR Report separately assessed National Grid's procurement costs. The assessment was based on a study on National Grid's procurement costs, conducted by the Hackett Group, commissioned by National Grid. The Hackett Group study compared National Grid's procurement costs, as a percentage of total influential spend[165], against third party companies data contained in the Hackett Group database. The Hackett Group study showed that National Grid's procurement costs were 8% over the median companies in the

[165] "Total influential spend" refers to expenditure on the transactions processed and controlled by the procurement function. Total influential spend includes both controllable and non-controllable expenses.

sample, and 16% over the "world class" companies. Deloitte's proposed L&P costs efficiency savings were calculated based on this analysis.

Benchmarking analysis

13.15 L&P costs are driven by the quantity and the value of the goods and services purchased. In addition, certain L&P costs, such as transportation, are influenced by other factors such as the shape and the length of the network. We provide an analysis of these factors in the qualitative review subsection below.

13.16 We have reviewed third party reports to identify L&P cost drivers and the best approach to benchmarking L&P costs. Based on this review, we believe the following can be used to benchmark L&P costs:

- L&P cost / total operating costs. L&P costs relate to the costs incurred in the performance of L&P activities relating to opex, repex and capex purchases. L&P costs are likely to be driven by the quantity and the value of these purchases. We consider total operating costs to provide a good proxy for opex, repex and capex activities. Total operating costs include controllable and non-controllable operating costs. Non-controllable costs primarily comprise of depreciation, which represents a good surrogate for average annual capital expenditure. This metric is consistent with the metric used in the third party benchmarks. It was also was used in the Deloitte TPCR Report[166]; and
- logistics costs / network size. Network size is represented by the length of a GDN's pipeline. Certain logistics costs components, such as transportation and warehousing costs, are likely to increase with the network size.

13.17 We have benchmarked each NGGD against the other GDNs. L&P costs comprise of two components (i.e. logistics costs and procurement costs). To

[166] Deloitte TPCR Report, ibid. Total operating costs include the costs classified under "staff costs". Removing "staff costs" from total operating costs may arrive at a more accurate measure of the value of purchases. We have, however, not undertaken this adjustment due to two factors. First, the levels of staff costs included in the BPQ Tables are impacted by outsourcing and subcontracting arrangements, which have no impact on the total costs of effective employee. Removing costs included under the "staff costs" category may lead to inconsistency across the GDNs. Second, the third party benchmarking metrics included in our report are based on total operating costs (i.e. including staff costs). Including staff costs in calculating WWU's benchmarking metric allows the same metric to be consistently applied across different benchmarking analyses.

support our benchmarking analysis of total L&P costs, we have performed analysis of these components, separately. Unless otherwise defined, we have based our low savings and high saving benchmarks on the median and the top quartile data points in the GDN sample.

Benchmarking of L&P costs

13.18 The table below set out the L&P costs as a percentage of total opex metrics.

Table 129: Benchmarking total L&P costs across all GDNs

2006/07	NGGD	NGN	SGN	WWU
Adjusted L&P costs (£m)	7.7	1.5	2.1	1.8
Benchmarking metric	1.27%	0.92%	0.60%	1.04%

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjusted. In 2005/06 prices.

13.19 The table below compares these benchmarks to NGGD's performance, and summarises the potential efficiency gap.

Table 130: NGGD performance against other GDNs based on L&P costs as a percentage of total opex

Benchmark	Benchmark ratio 2006/07	NGGD ratio 2006/07	Efficiency score	Implied saving £m
Low savings	0.98%	1.27%	0.77	1.79
High savings	0.84%	1.27%	0.66	2.63

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjustments. LECG analysis.

13.20 NGGD's L&P costs appear less efficient in comparison to the selected benchmarks. Our analysis indicates potential annual savings of £1.79 and £2.63m, under the low savings and the high savings scenarios respectively. The savings that NGGD could achieve may be higher than the savings proposed in the Deloitte TPCR Report. We consider that Deloitte did not have the benefits of comparing L&P costs across the GDNs.

Separate benchmarking of procurement costs

13.21 The table below sets out the procurement costs as a percentage of total opex metric.

Table 131: Benchmarking total procurement costs across all GDNs

2006/07	NGGD	NGN	SGN	WWU
Adjusted L&P costs (£m)	3.6	N/A	0.5	0.7
Benchmarking metric	0.60%	N/A	0.15%	0.44%

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjusted. In 2005/06 prices. Note: NGN has not been able to provide procurement costs and logistics costs figures separately. We have excluded NGN in calculating the GDN procurement benchmarks.

13.22 The table below summarises the potential efficiency gap based on procurement costs as a percentage of total opex.

Table 132: NGGD performance against other GDNs based on procurement costs as a percentage of total opex in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving £m
Low savings	0.44%	0.60%	0.73	0.99
High savings	0.29%	0.60%	0.49	1.86

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

13.23 Our analysis indicates that NGGD's procurement costs are inefficient, in comparison to other GDNs. Our analysis indicates annual potential efficiency savings of approximately £0.99m to £1.86m. As a percentage of costs, our analysis indicates a high efficiency savings than the Deloitte TPCR Report. Deloitte compared procurement costs against general market benchmark, whereas our benchmarking is against the other GDNs. It appears that on average, the GDNs are able to achieve lower procurement costs than the market average.

Separate benchmarking of logistics costs

13.24 The table below sets out the metrics used to benchmark logistics costs.

Table 133: Benchmarking logistics costs across all GDNs in 2006/07

2006/07	Logistics costs as a percentage of total opex				Logistics costs per km pipeline			
	NGGD	NGN	SGN	WWU	NGGD	NGN	SGN	WWU
Procurement costs / logistics costs (£m)	4.1	N/A	1.6	1.0	4.1	N/A	1.6	1.0
2006/07 metric	0.67%	N/A	0.45%	0.60%	30.90	N/A	21.80	29.20

Source: All GDNs. GDPCR 5 year BPQ Table A1, B2.1, B3.1 FTE. LECG adjusted. In 2005/06 prices. Note: NGN has not been able to provide procurement costs and logistics costs figures separately. We have excluded NGN in calculating the GDNs benchmarks.

13.25 The table below summarises the potential efficiency gap based on logistics costs as a percentage of total opex.

Table 134: NGGD performance against other GDNs based on logistics costs as a percentage of total opex in 2006/07

Benchmark	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving £m
Low savings	0.60%	0.67%	0.89	0.43
High savings	0.52%	0.67%	0.78	0.88

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjustments. LECG analysis.

13.26 The table below summarises the potential efficiency gap based on logistics costs per kilometre pipeline.

Table 135: NGGD performance against other GDNs based on logistics costs per kilometre pipeline in 2006/07

	Benchmark ratio	NGGD ratio 2006/07	Efficiency score	Implied saving
Low savings	29.20	30.90	0.95	0.22
High savings	25.50	30.90	0.83	0.71

Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjustments. LECG analysis.

13.27 NGGD's logistics costs appear less efficient in comparison to other GDNs. Under the low savings scenario, our analysis suggests a potential efficiency saving of £0.22m to £0.43m. Under the high savings scenario, our analysis suggests a potential annual efficiency saving of £0.71m to £0.88m.

Cost trend and qualitative review

13.28 We have reviewed NGGD's forecast L&P costs for the price control period. The table below shows the forecast trend.

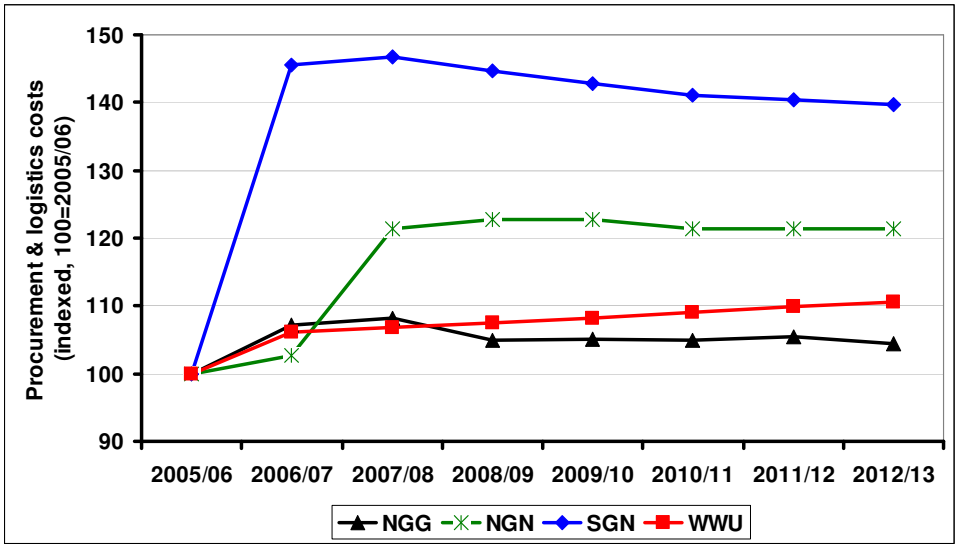
Table 136: NGGD adjusted forecast procurement and logistics costs

	05/06	06/07	07/08	08/09	09/10	10/11	11/12	12/13	CAGR 06/07-12/13
L&P costs as per BPQ	6.18	6.62	6.56	6.32	6.32	6.30	6.34	6.27	(0.9%)
Adjustments*	1.05	1.11	1.25	1.26	1.27	1.27	1.27	1.28	
Adjusted L&P costs (£m, 2005/06 prices)	7.22	7.74	7.81	7.58	7.59	7.57	7.61	7.54	(0.4%)
Annual growth rate (adjusted L&P costs)		7.1%	1.0%	(3.0%)	0.2%	(0.3%)	0.6%	(0.9%)	

Source: NGGD. GDPCR 5yr Table B2.1. LECG analysis. Note: * LECG adjustments related to the removal of L&P costs associated with de minimis activities and the reclassification of storage costs from repex (Ofgem adjustment).

13.29 The figure below shows the forecast trend of the L&P costs for each of the GDN groups, after LECG adjustments, over the price control period.

Figure 9: GDNs adjusted forecast L&P costs



Source: All GDNs. GDPCR 5 year BPQ Table B2.1. LECG adjusted.

13.30 NGGD's L&P costs are forecast to decrease marginally between 2006/07 and the end of the price control period. We understand through our discussion with NGGD that it has planned a number of efficiency improvement initiatives. These initiatives include encouraging individual departments to increase their use of the shared, centralised, L&P function in performing procurement activities, and the introduction of a single Enterprise Resource Planning system.[167]

13.31 NGGD states that these cost savings would be offset by an increase in input costs, including real salary costs and fuel costs. NGGD considers that the scope for further efficiency improvements is limited. The majority of the logistics activities have already been outsourced and market tested. NGGD also considers that there are major operational differences between the logistics functions of the transmission and distribution businesses. Further rationalisations and synergies between the two businesses are thought to be limited[168].

13.32 NGGD has engaged AT Kearney to review its logistics and warehousing strategic. We have reviewed the report produced by AT Kearney ("AT Kearney Report")[169]. The report concluded that there are limited cost savings in re-tendering NGGD's current fleet management outsourcing contracts, and to

[167] LECG visit to NGGD office, 17 November 2006.

[168] LECG visit to NGGD office, 17 November 2006.

[169] AT Kearney. "*National Grid, distribution review presentation*". March 2006.

increase the involvement of third party logistics and warehousing services providers. The AT Kearney Report states that NG may be able to achieve efficiency saving by consolidating primary and secondary depots to reduce transportation costs and improve inventory control. AT Kearney did not provide any estimates of potential efficiency saving.

Conclusion

13.33 The table below summarises our findings:

Table 137: Summary of findings

Benchmark	Low saving £m	High saving £m
Benchmarking L&P costs, as a percentage of total opex, against other GDNs	1.79	2.63
Benchmarking procurement costs, as a percentage of total opex, against other GDNs	0.99	1.86
Benchmarking logistics costs, as a percentage of total opex, against other GDNs	0.43	0.88
Benchmarking logistics costs, per kilometre pipeline, against other GDNs	0.22	0.71

Source: LECG analysis.

13.34 NGGD's L&P costs, based on L&P costs as a percentage of total opex, appear less efficient in comparison to the other GDNs. Our analysis indicates potential annual efficiency savings of £1.79m and £2.63m, under the low savings and the high savings scenarios respectively.

13.35 We have benchmarked NGGD's L&P costs against a third party benchmark. Our analysis indicates that NGGD's performance is significantly more efficient than the third party benchmark. We consider that this may be a result of operational differences and/or comparability issues. As such, we do not base our proposed efficiency saving on the third party benchmarking analysis.

13.36 We have separately benchmarked NGGD's procurement costs and NGGD's logistics costs. The comparison of NGGD's procurement costs against other GDNs indicates an inefficiency of £0.99m and £1.86m, under the low savings and the high savings scenarios respectively. The benchmarking of logistics costs against the other GDNs show a saving of £0.22m to £0.43m under the low

savings scenario, and a saving of £0.71m to £0.88m under the high savings scenario.

13.37 We consider that it is more appropriate to assess the efficiency of the combined procurement and logistics function. Sub-dividing the function into activities increases the risk of erroneous conclusions (e.g. due to comparability, cost allocation and measurement issues across GDNs). It is also important to recognise trade-offs between procurement and logistic activities. An improvement in planning over the timing of purchases, for instance, may increase procurement costs but reduce transportation and warehousing costs.

13.38 NGGD forecasts that L&P costs would decrease at an annual average of 0.4% over the price control period. This is consistent with another GDN. NGGD has forecasted an increase in real staff cost over the price control period. We have not allowed for this increase in our forecast of efficient L&P costs. We understand that a different Ofgem workstream is assessing allowable future wage rates. The findings of this work will be reflected in Ofgem's final determination of price controlled revenue.

13.39 The increase in real staff costs is off set by efficiency improvement. Given that NGGD is inefficient in comparison to the other GDNs under both the high and the low savings scenario, it might be inappropriate to adjust costs in the base year, and then to assume further efficiencies. This might double count available efficiencies. Ultimately, this is a decision for Ofgem. In our analysis, we have adopted a conservative assumption, where adjusted L&P costs remain constant in real terms, at 2006/07 efficient levels.

13.40 Our conclusions under the low saving scenario can be summarised as follows:

Table 138: LECG conclusions - low saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted L&P costs (£m)	7.58	7.59	7.57	7.61	7.54
LECG conclusions – low saving scenario (£m)	5.95	5.95	5.95	5.95	5.95
Implied efficiency savings (£m)	1.63	1.64	1.63	1.67	1.60

Source: LECG analysis. Note: LECG conclusions were arrived at by reducing the 2006/07 adjusted L&P costs (i.e. £7.74m p.a.) by the low savings scenario saving identified in the benchmarking of L&P costs against other GDNs (i.e. £1.79m p.a.).

13.41 Our conclusions under the high saving scenario can be summarised as follows.

Table 139: LECG conclusions - high saving scenario

	08/09	09/10	10/11	11/12	12/13
Adjusted L&P costs (£m)	7.58	7.59	7.57	7.61	7.54
LECG conclusions - high saving scenario (£m)	5.11	5.11	5.11	5.11	5.11
Implied efficiency savings (£m)	2.47	2.48	2.46	2.50	2.43

Source: LECG analysis. Note: LECG conclusions were arrived at by reducing the 2006/07 adjusted L&P costs (i.e. £7.74m p.a.) by the high savings scenario saving identified in the benchmarking of L&P costs against other GDNs (i.e. £2.63 m p.a.).