Gas Distribution Price Control Review Initial Proposals

Response by National Grid Gas Distribution

July 2007

1. This response to Ofgem's Initial Proposals for the 2008 - 2013 Gas Distribution Price Review is on behalf of National Grid's gas distribution business. This section of the response provides a brief overview of the key points; our responses to the questions raised in the proposals are provided in section 2, with supporting evidence and detail contained in section 3.

Section 1: Executive Summary

2. We are pleased to note the substantive progress that has been made in key policy areas and in many cases we are able to support Ofgem's proposals. We also note that the review of financial issues has not yet begun in earnest and we look forward to engaging in this debate between now and the September update. Finally, we acknowledge the 'further work' items that have been identified in Initial Proposals and observe that these will form a significant element of the next price control.

3. As might be expected at this stage of the review, the main focus of our comments is on the initial cost proposals. The transparency of the process means that we are able generally to track how Ofgem have moved from the company business plans, through several iterations of consultants' reports and their own analysis, to the numbers set out in the Initial Proposals. As a result, this response is able to provide a detailed critique of the initial cost proposals to support our overall contention that Ofgem's methodology would not stand up to the detailed scrutiny of a dispassionate third party. In particular:

- the detailed methodology is too fragile to support the level of cuts which Ofgem have applied to the company submissions; and
- overall, in the application of their judgement, Ofgem asymmetrically bias the outcome against the networks.

We calculate that these weaknesses undermine around 75% of Ofgem's proposed opex cuts, leading to a very real risk of under funding for all eight of the gas distribution networks.

4. We would also have expected Ofgem to have taken the time to stand back from their detailed proposals to make sure that the outcomes look sensible 'in the round'. There are, however,

many points in the Initial Proposals where the cost outcomes for individual networks seem implausible when compared against each other.

5. By way of example, one such check would be to ensure that any differences in overall cost per customer across the networks can be explained. Using this check, we note that Ofgem's complex assessment methodologies currently attribute 16% less overall funding to the networks owned by National Grid. Ofgem should ensure that, to the extent such variances remain in the September update, they are understood and explained.

£, 2005/6 prices	NGGD	Other GDNs
Total opex	26	28
Average net capex	11	19
Net repex	29	29
Total Cost	**66**	**77**

Table 1.1 – Proposed 2012/13 cost per customer

6. We have raised a number of methodological points in this response:
   - The apparently detailed combination of bottom-up and top-down opex analysis reduces, on examination, to a rather rudimentary, frontier based, top-down regression.
   - In choosing the variable on which to base this regression, Ofgem have chosen to use a composite variable with lower explanatory power than using straightforward customer numbers.
   - The use of the frontier network to set opex allowances is harsh and fails to recognise the very good reasons that Ofgem and other regulators have conventionally used upper quartile benchmarks, often combined with glide paths.
   - Ofgem's roll forward of cost allowances ignores more recent and robust evidence presented by the networks. National Grid has also submitted further evidence on current cost pressures as part of this response.
   - Ofgem have priced NGG's replacement expenditure following a judgement by their consultants that significant downsizing can be assumed when pipes are replaced. If we applied this judgement in practice there would be significant system failures.
   - The trade-off between operating costs and investment has not been properly considered when setting opex allowances, particularly for maintenance and asset management activities. Effectively, the proposals assume that a "lowest of both" approach is practical.

7. Despite the critical tone of this response overall, we are optimistic that further joint working can mitigate the worst excesses of the Initial Proposals and still provide good value to consumers. We look forward to further discussions with Ofgem between now and the September update.

Section 2: Summary Responses to Questions Raised in the Initial Proposals

Chapter Two - Form, Structure and Scope of Price Control

Question 1: Do you think that a wider deadband on the revenue recovery correction mechanism is appropriate in gas distribution?

8. We continue to support the introduction of a deadband on the revenue recovery correction mechanism and consider that a 5% deadband is appropriate, given the higher revenue volatility seen in gas distribution. Analysis in support of the 5% value is given in section 3, 2.1.

9. With regards other areas of the form of the control, we agree with Ofgem's proposals to include re-openers for TMA and IFRS tax and to continue with pass-through for formula rates (all subject to efficiency tests). We repeat again our proposal that appeal costs in these areas should be logged up and funded to ensure GDNs are not financially penalised for pursuing industry-benefiting actions. Finally, as Ofgem are aware, NGG is currently working with the HSE to determine whether additional requirements in respect of 12 hour rechecks are necessary. The conclusions of this work may require additional funding, and we propose this should be covered by a logging-up arrangement.

Chapter Three - Operating expenditure analysis

Question 1: Do you agree with our approach for setting opex allowances and the proposed allowances we have derived using that approach? Question 2: Do you agree with the proposals to uplift allowances derived from disaggregated benchmarking so that they are consistent with the power of a top down approach.

10. At a conceptual level Ofgem's four stage approach, ie. base year upper quartile benchmarking by activity, rolled forward for workload, productivity and real price effects, then adjusted for regional price differences and, finally, uplifted to a real network's total costs (to remove any cherry picking issues) has the potential to deliver sensible cost allowances. However, there are flaws in how each stage has been executed and the result is that the proposed opex allowances are largely unsubstantiated, unrealistic and would not stand up to scrutiny from a dispassionate third party.

11. Our main concerns, and the steps we think Ofgem need to take as a priority to remedy them, are summarised in the following paragraphs (with further explanation, analysis and evidence provided in section 3), under the headings:

- *Inappropriate methodology* - not least the use of what is primarily a frontier technique;
- *Unsubstantiated assumptions* – particularly regarding productivity; and
- *Inadequate normalisation* - for network differences at activity, cost and GDN levels

12. These weaknesses together we calculate undermine around 75% of Ofgem's proposed opex cuts and lead to a very real risk of underfunding all eight of the GDNs.

A feature of the cost allowances in the Initial Proposals notable by its absence is a general lack of holistic sense check. One such check would be to ensure that any differences in overall cost per customer across the price controls are rational. We have concerns that Ofgem's complex assessment methodologies currently attribute 16% less overall funding to NGG networks. Ofgem should make sure that any such variances that remain in the September update are understood and explained.

£, 2005/6 prices	NGGD	Other GDNs
Total opex	26	28
Average net capex	11	19
Net repex	29	29
Total Cost	**66**	**77**

Table 2.1 – Proposed 2012/13 Cost per Customer

13. This simple analysis also highlights another key weakness in Ofgem's assessment to date, in that the trade-off between operating costs and investment has not been considered when setting opex allowances, particularly for maintenance and asset management activities. Effectively, the proposals assume, albeit implicitly, that a "lowest of both" approach is practical. These concerns are expanded upon in paragraphs 32 to 34.

2.1 Inappropriate Methodologies

a) Use of a Frontier Benchmark

14. Many respondents to the fourth consultation highlighted the risk of 'cherry-picking' that is inherent with disaggregated (ie. activity level) benchmarking and Ofgem's response to this has been to introduce a 5.6% uplift based on top down regression, effectively setting opex for the GDNs as a whole at apparent industry frontier levels. We think this is a wholly inappropriate and unsupportable position.

15. In recognition of the residual errors that are inherent within any regression analysis, past regulatory determinations using a frontier benchmark (including Ofgem's – see section 3, 3.1.1 for a summary of previous determinations) have always adopted the 'protection' of partial closure and glidepaths, to account for the inevitable un-quantified operating differences and data issues. Furthermore, the frontier is only passed for use after rigorous checking for suitability. Without some combination of these protections, an upper quartile benchmark is used, as was the case in DPCR4 where Ofgem stated they *"used the upper quartile benchmark to set costs for the price control as it is more robust than using a frontier that relies on a single company"*[1].

16. There are numerous examples that highlight how Ofgem's analysis is some way from being fully normalised, not least the fact that the results frequently show NGG's four networks as sat at either extreme of the apparent efficiency scale, despite them operating consistent processes, systems and resourcing strategies. In other words, we suspect many of these spreads are more down to overly simplistic comparison methods rather than genuine inefficiency. As an example, NGG currently operate the emergency contact centres on behalf of all GDNs, charging for their use on an appropriate, cost-reflective basis. Ofgem's comparison uses a different cost driver and so generates an entirely bogus efficiency gap on what is a common service, and this gap then goes on to have influence over each company's proposed allowance.

17. We see no basis for Ofgem discarding their previous logic, particularly given that for gas distribution:

[1] Electricity Distribution Price Control Review: Final Proposals, pg 72

- There are fewer data points than electricity distribution, water or sewerage;
- This is the first time comparisons have been used, and there is little demonstrable understanding of the impact of the four disparate operating models in play;
- There is only one year's operating track record available and the apparent frontier company has demonstrated the potential unsustainability of its cost base by failing the critical emergency standard (in what was an exceptionally warm year);
- Total cost reductions since privatisation have matched those achieved in DNOs, i.e. it is not as though there is evidence of significant inefficiencies in GDNs caused by the absence of comparisons for regulators (section 3, 3.1.2, figure 3.1).

18. Accordingly, we strongly believe that all comparative assessments at GDPCR should be based on upper quartile benchmarks and not frontier. Further, given the above points that indicate analysis in gas distribution is likely to be less robust, the use of glidepaths should also be seriously considered as a further safeguard against setting unrealistic allowances.

b) Costs to achieve

19. The Initial Proposals provide no allowance for restructuring costs, which means that costs necessarily incurred by companies as they seek efficiencies would be unfunded and achievement of the cost of capital even for a frontier network is discounted. We believe a distinction should be drawn between efficiency improvements which are needed to reach the 'efficiency frontier' and improvements which are needed to shift the frontier itself.

20. In a competitive market, one would expect the shareholders of a firm which is 'off the pace' to bear the costs of restructuring required to compete with frontier companies. However, frontier companies themselves would normally be able to pass on to customers the costs of staying 'on the pace'. Applied to the GDPCR, this logic would suggest that customers should bear the costs of achieving the frontier shift assumed by Ofgem – including the costs of severance. This is discussed further in section 3, 3.2.

c) Sub-optimal choice of cost driver

21. The vital top down regression in the proposals uses a cost driver comprising 50% customer numbers and 50% length of main. As articulated and evidenced in our response to the fourth consultation document, a single regression driver based on customer numbers is very strongly aligned with GDN's operations and gives the highest correlation (0.93) of all the obvious candidates. Length of main, while the best driver for one or two important operational activities, has little or no direct relationship with large elements of a GDN's costbase, a fact borne out by significantly lower correlation to total cost of 0.70. It seems perverse to

deliberately choose a more complicated driver that has a lower predictive fit over a simple one with a stronger fit.

22. We also acknowledged in our response that a weakness with a single customer number driver is that it would not account for extremes of dispersion, but that this was unlikely to be material with the possible exception of Wales and the West network. Corrupting the strong overall industry fit of customer numbers by introducing an (arbitrary) 50% length driver to resolve what is a single GDN issue does not seem to be a good solution. In fact, it introduces an equal but opposite problem at the other end of the scale, whereby extremely dense networks such as London have their costs underestimated with a length driver – in London's case by a further £2m (in addition to the £3.5m residual London factors such as Congestion Charging and underground ducting that Ofgem are assessing for the September update).

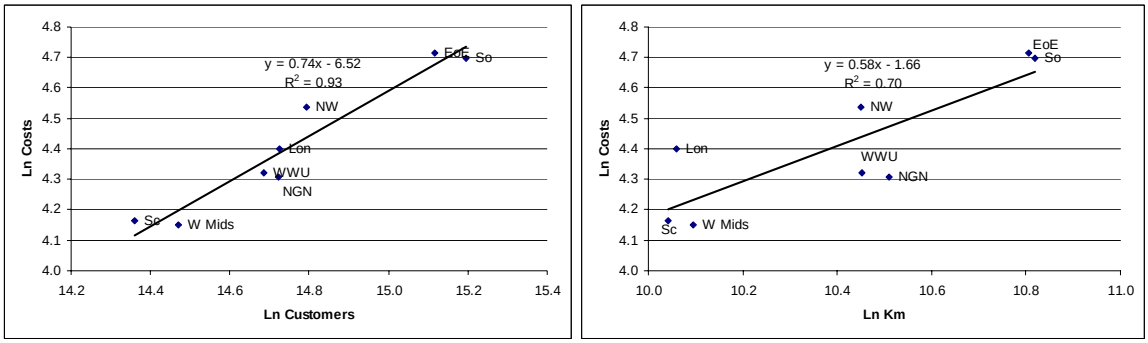

Figure 2.1 - Regression graphs of customer numbers and km

2.2 Unsubstantiated Assumptions

a) Productivity Assumption

23. We strongly disagree with Ofgem's 2.5% pa. blanket productivity assumption. The proposals justify this value from two directions: a bottom-up, engineering judgement based view - which is entirely unsupported by any meaningful analysis (see paragraphs 54 to 58 and section 3, 3.4.10) – and a top-down TFP analysis undertaken by Europe Economics which has a number of substantial flaws. Further detail is provided in section 3, 3.4 but in summary these flaws are:

- **Wrong averages** - Europe Economics mistakenly assume that the rates of TFP growth and input price inflation captured by RPI are average UK TFP growth and average UK input price inflation, so ignoring completely the contributions to these indices coming from goods produced overseas.

- **Wrong dataset** - Europe Economics assert that the machinery and equipment, utility, and communications industries provide the best benchmarks for underlying GDN TFP growth. None of these industries are valid comparators as:
    - The machinery and equipment industry is a capital-intensive sector that bears no resemblance to the GDNs' labour-intensive engineering services;
    - Figures for TFP growth in the utility and communications industries are distorted by the 'privatisation effect' in play over the 1980s and 1990s. Europe Economics claim that they have stripped out this effect, but we do not see how this can be the case as there is no evidence that the utility industry was out-performing economy-wide TFP growth before privatisation.

- **Overstated capital-labour substitution** - The extent to which the GDNs' investment programmes will drive reductions in opex is a verifiable fact and does not require top-down judgments from economic consultants. Section 3, 3.4.2 provides a simple but robust analysis that calculates a realistic value for GDNs of 0.5% pa. Critically, this area of the proposals double counts the benefits from mains replacement – in terms of fewer leaks – as these are already captured in PB Power's roll-forward of the repair activity. Ofgem should also give consideration to the different capital substitution rates that could reasonably be expected between GDNs with different investment strategies (paragraphs 32 to 34).

- **Incompatible application** – whilst we accept that the introduction of comparative assessment should have some effect on future productivity, the 1.1% figure currently assumed in the proposals is not compatible with a benchmark set at frontier levels.

24. Given these serious flaws we believe Ofgem should rely on the alternative framework put forward by the GDNs and First Economics which does not separate TFP growth and input price inflation and does not therefore require Ofgem to make assumptions about the rates of these within RPI. It would not be appropriate to use this approach as a secondary cross-check on the Europe Economics methodology as, put simply, the First Economics work is the right way of looking at frontier shift and the Europe Economics work is flawed and wrong. They are not complementary pieces of evidence.

25. RPI aggregates and averages two quite different trends affecting the products purchased by UK households: below-RPI cost increases in the goods sector and above-RPI cost increases in the service sector. Since the factors that are contributing to below-RPI inflation in the goods sector – most notably globalisation – are of little or no relevance to a GDN, it is entirely logical that Ofgem should find that comparator firms are seeing costs move on an above-RPI trend. This, in turn, implies that there is above-RPI (ie. costs increasing in real terms) frontier shift in network businesses.

26. This seems to be borne out with reference to other recent regulatory determinations. Both OFWAT[2] and the CAA[3] have acknowledged that frontier shifts should be in the region of zero in recent determinations / proposals. Ii is also noteworthy that DNOs' costs have remained flat in the first year of the current control period (ie. a frontier shift of 0%) which has resulted in a 5% overspend against their Ofgem allowances.

27. Sections 3, 3.4.6 to 3.4.10 discusses further why the productivity assumptions in the Initial Proposals are unrealistic and includes some bottom up evidence from DNOs, an analysis of the possible sources of future savings in gas networks and a critique of Ofgem's consultant's views.

b) Real Prices

28. *Contractor Costs* - we explain in paragraph 49 that updating Ofgem's methodology for the latest published information gives a contractor RPE 1.1% higher than that assumed by Ofgem in the Initial Proposals (and 1.65% higher in London).

29. *Pay Awards* - detailed comments are provided in Section 3, 3.5.2, but, in summary, evidence suggests that Ofgem's assumption of 1% pa. is low, not least because it:

- *Does not reflect the growth of total earnings* – a number of the indices Ofgem use only incorporate annual increases to basic salary scales, not total earnings.
- *Relies on short term data* – many credible commentators on earnings growth, including Hay Group, HM Treasury and Inbucon, stress the importance of using long term historical averages rather than point forecasts.
- *Provides a selective presentation* - the proposals quote a figure of 1% from the Incubon report. However, the detail of the report states: *"the correlation between RPI and wage growth will be maintained and overall wage growth will continue to fall within a range of approximately 1.5 -2% above RPI".*

[2] In the "Future water and sewerage charges 2005-10: Final determinations", OFWAT proposed a frontier shift of 0.3% for water[2], rejecting work from Europe Economics who suggested a much higher value.

[3] In the current Airports price control review the CAA recognised that: *"there is a question as to why BAA should necessarily be expected to be able to outperform an RPI-based benchmark that – at least historically – appears to be increasingly driven by goods (such as food, new motor vehicles and clothing) whose cost drivers are not directly linked to its own"[3].*

c) Data Errors

30. There are a number of *bona fide* data errors in the base year analyses. Details are provided in Section 3, 3.6, but in summary the main instances are:

- *Indirect Costs:* A £15m credit entry has been 'lost' between Ofgem's consultants and there remains a double count of IS efficiencies of up to £2m pa. which together result in a significant overstatement of NGG's indirect costs. (section 3, 3.6.1)
- *Atypicals:* a number of one-off credits in 2005/06 totalling £15m have incorrectly been assumed as enduring within the direct cost benchmarking; (section3, 3.6.2).
- *Pensions:* non-formula pensionable pay has been removed twice in the analysis and the incorrect base line rate has been used (section3, 3.6.3);
- *Service Relay after Escape:* we disagree with this 'normalisation' adjustment but, if it is to endure, it should be applied to the repair, not emergency process; (section 3, 3.6.4).
- *Outer Metropolitan area*: all three versions of Europe Economic's top-down regression analysis contained material errors and we are therefore not surprised that this work has been discarded by Ofgem. The uplift analysis in the proposals still contains incorrect adjustments however (section3, 3.6.5).

2.3 Inadequate GDN Normalisation

31. As described in section 2.1 above, there are numerous examples that highlight how Ofgem's bottom-up analysis is some way from being adequately normalised, including bogus efficiency spreads across NGG's networks and 'gap-generating' cost drivers. Ofgem have not explained how they have accounted for the impact of disparate operating and investment strategies on opex. Our key concerns in this area are:

a) Normalising for Different Investment Strategies

32. An area that requires substantive further work between now and the September update is the need to incorporate the impact of the GDNs' differing investment strategies. As can be seen from figure 2.2 below, average annual net capex per customer over the 16 year period 1997/8 to 2012/13 will be 67% higher in sold GDNs than in NGG's networks[4].

[4] Based on GDN capex allowances from the Initial Proposals

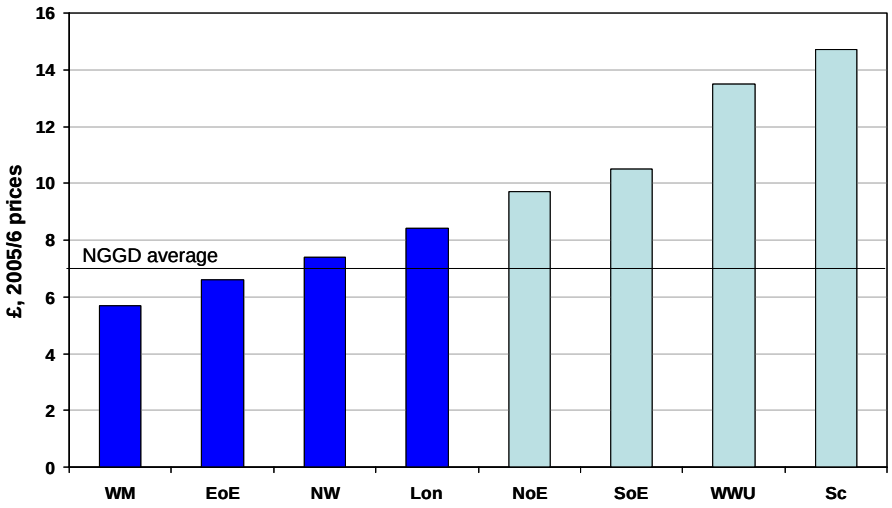

Figure 2.2 Average net capex per customer – 1997/98 to 2012/13

33. It would be reasonable to expect this enduring and very significant difference to have some impact on the current and future operating cost requirements of the businesses. While some of the difference will have come from different capacity requirements, there are many other areas where capex/opex trade-offs are made within GDNs, for example regarding:

- mains reinforcement versus pressure elevation;
- New LTS pipelines for diurnal storage versus continued maintenance of holders;
- Replacement of plant and equipment versus repair.

34. These decisions can have a material impact on relative capex and opex levels – put simply networks with a greater proportion of aged assets require more asset management assessment and incur greater on-going maintenance and repair costs. Although difficult to quantify in detail, analysis based on Ofgem's assumptions for capital substitution suggests a 2.1% difference in opex could be expected after 15 years of divergent investment. NGG's lower capex over this period is consistent with a higher level of opex, but Ofgem's assessment to date and the initial proposals effectively select the 'lowest of both'. Improving the sophistication in this area is an important aspect of the summer assessment work, particularly in the direct opex areas of work management and LTS maintenance. Further detail on this issue, including specific areas for further assessment, is given in section 3, 3.4.2.3.

b) Normalising indirect costs for different levels of capitalisation

35. An outsourced operating model inherently will lead to a higher proportion of support costs being capitalised in the GDN accounts, as shown diagrammatically in Figure 2.3. Support costs are typically recovered reasonably uniformly via all the products supplied, meaning a proportional amount of HR, finance, IS costs etc. will be apportioned to capex and repex invoice lines and so find their way into the investment BPQ. This is in contrast to an in-house model, where accounting policy dictates that only those overheads directly incremental to investment can be capitalised. We have concerns as:

- NGN is almost fully outsourced (to UUOL) and forms the frontier benchmark in Ofgem's top down analysis, so determining all eight GDNs' opex allowances; and
- Ofgem has not been able to provide evidence showing how this inherent extra capitalisation has been normalised out;

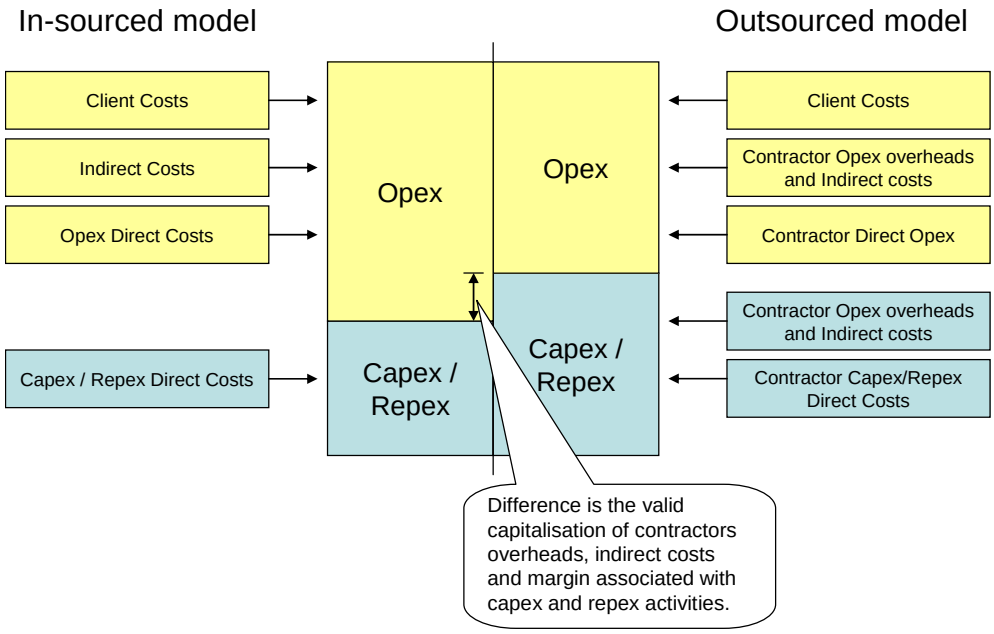

Figure 2.3: Operating Modelling Differences

c) Normalisation for levels of centralisation/marginal costs

36. In the proposals NGG's support activities are presented as significantly less efficient than SGN's, even after accounting for the acknowledged Ofgem error in the analysis (section 3, 3.7.3). We are concerned that a combination of SGN's 'depot' operating model plus some element of marginal charging from SSE (ref: 3.40 in the 4th consultation document) means they are not a comparative benchmark. For SGN's support costs to continue to have influence over any aspect of the allowances, we will need to be reassured that these two effects have been adequately normalised.

2.4 Other Issues

a) Other issues with Ofgem's indirect cost benchmarking

37. LECG use some inappropriate external comparator groups and/or cost drivers in their work, most notably in the use of a Europe-wide benchmark for HR & Finance against which all GDNs show significant inefficiency. Intuitively this is difficult to believe, not least because the networks sold in 2005 were effectively 'greenfield sites' for these activities. Therefore, if the benchmark is valid, it means all three new owners have, independently and from scratch, built HR and Finance functions with around 50% inefficiency within 12 months. This is particularly unconvincing when considering SGN's services include a proportion apparently provided at marginal cost. Detailed scrutiny of the Europe-wide benchmark also reveals a number of weaknesses, and these are described in section 3, 3.8.1.

38. Regarding the choice of drivers, we acknowledge there is always an element of compromise necessary in these types of study, but we consider LECG's selections too simplistic to produce meaningful results in some areas. For example, procurement costs are measured in terms of procurement-cost-per-£opex, which completely ignores the GDNs' very substantial capital and replacement programmes which, of course, draw heavily on procurement activities. We have set out how we believe LECG should refine their selection of benchmarks and drivers in more detail in section 3, 3.8.

39. Finally, we disagree with Ofgem's assumption on future insurance cost trends, which is based on a cyclical approach. This approach does not apply to claims levels and is of limited relevance under a captive arrangement, as used by NGG. This view is supported by industry experts Marsh, who have provided a latest review of the insurance market and NGG's BPQ forecasts. This is discussed further in section 3, 3.8.2.

b) Other issues with Ofgem's direct cost benchmarking

40. Adequate funding of direct operating expenditure must be a priority for Ofgem's cost assessment work, given the compulsory nature of most of the workloads and their critical importance to public safety and security of supply. NGG is concerned that some over-simplifications and omissions in PB Power's work are currently responsible for producing allowances that are not sustainable. The primary over-simplification is a stance that GDNs are generally homogonous, in terms of the assets they contain, the state of those assets at present and the level of capital investment that has been expended on them in the past. Further detail is provided in section 3, 3.9, but our summary concerns, by work category, are given below.

Work Management

41. PB Power has failed to fully understand the nature of the costs held within the Work Management category by overestimating the proportion that are driven by leakage from gas mains. A basic analysis of the main items within this category reveals that customer numbers are a significant driver of much of the cost items (for example, 80% of the annual calls to our contact centres relating to reports of escapes relate to leaks from within the home, not from gas mains) (section 3, 3.9.1).

Repair

42. The initial proposals assume repair workloads in all GDNs will fall at 3% pa. based on a simple analysis of long-term mains replacement rates. PB Power have not accounted for the significant differences in the way GDNs are going to target iron mains over the next five years, nor have they considered how different investment strategies will influence leakage reduction rates (section 3, 3.9.2).

Maintenance

43. Maintenance workloads for gas distribution assets have a strong element of cyclicality and so cannot be reliably benchmarked using a single base-year without some additional adjustment. As an example, the requirement for online inspections in East of England increases from 2 runs in 2005/06 to 18 runs in 2006/7. NGG has provided extensive and detailed condition reports and other evidence to support the non-routine maintenance programme that must be undertaken over the forthcoming period to ensure continued safe and secure operation. These costs have generally not been reflected within the Initial Proposals, leading to costs necessary to avoid significant asset failure and reduced reliability going unfunded. Further detail on the implications of the proposed allowances is provided in section 3, 3.9.3.

Opex Issues still to be resolved

44. We note the issues described in paragraphs 3.70 and 3.71 of the Initial Proposals and look forward to discussing with Ofgem the detailed submissions NGG has already made in these areas. In addition, the proposals did not mention NGG's environmental remediation costs. Further details can be found in section 3, 3.10, but in summary:

Issue to be resolved	**NGG Annual Opex (4 networks)**
Regional factors (London)	£3.5m
Environmental remediation.	£3.5m
Impact of loss of meterwork	£9m
Costs associated with waste management	£4m
Impact of the Traffic Management Act	£14m
Total	**£34m**

Table 2.2 – Issues to be addressed

Question 3: Do you agree that GDNs Emergency Service personnel should be required to carry and use carbon monoxide measuring equipment during gas emergency investigations?

45. In the context of gas emergency investigations the Emergency Service personnels' primary obligation is to make the situation safe, ensuring (in priority order) the protection of life, property and, finally, supply. Undertaking carbon monoxide investigations would hence be a fundamental change and detailed analysis of the impact on the emergency service, and the consequential funding implications, needs to be undertaken. We would support a detailed review, including scientific input, to establish the exact requirements, so as to ensure the activity is reasonably practicable, appropriate, sustainable and valuable to customers.

Chapter Four - Capital and replacement expenditure analysis

Questions 1 & 2: Do you agree with our approach for setting investment (capex and repex) allowances and the proposed allowances we have derived using that approach?

46. We broadly support Ofgem's approach which, similar to opex, is based on a combination of detailed workload assessment, top down benchmarking, bottom up analysis and regional price adjustment. However, this good process has again been undermined by the blanket use of unsubstantiated and unrealistic productivity assumptions and, to a lesser degree, some poor engineering assumptions. In addition, we have concerns in a number of areas regarding aspects of the regression analysis, including the notional unit values used to evaluate work drivers which distort both the overall results and the subsequent split of the recommended allowances to activities (e.g. repex mains and services see section 3, 4.5.1). Together these have resulted in what appear to be unrealistic allowances for work that is characterised by its compulsory and safety-critical nature.

47. Input errors such as these, we believe, would have been identified earlier had Ofgem undertaken some holistic verification of the outputs, for example, by looking to see whether the regional repex unit costs feel 'right' in relation to each other. Is it really sensible for example to propose that unit costs in Wales should be higher than in the South East of England? There has also been insufficient work done to date to account for trade-offs between capex and opex, with allowances impractically set at the lowest of both, as described in more detail in paragraph 32.

48. Urgent work is required in these areas prior to the September update. The following paragraphs summarise our key concerns in more detail.

Real Price Effects (RPEs)

49. We are pleased that Ofgem consider our approach on contractor real price inflation robust. Since the Initial Proposals, updated index information has been published showing a 1.13% pa. differential between the EC Harris TPI and Baxter over the period 2000 to 2006 (compared with Ofgem's figure of 0.8%). The information also forecasts future contractor inflation at 4.45% pa., or 1.95% real inflation relative to Ofgem's RPI. Refreshing the NGG methodology for this latest information produces a figure for contractor real price inflation of RPI+3.08% and this should be reflected in the updated proposals. This increase is consistent with our latest "on the ground" experience where, during the latest annual review of contracts, contractors have cited increasing pressure on labour rates as impacting their ability to retain skilled labour, resulting in real increases for 2007/08 year at or above the above estimates.

50. Our BPQ submission also assumed that contractor prices in London would rise 1.5% faster than other parts of the UK, consistent with EC Harris' regional forecast and supported by historical evidence. In the initial proposals Ofgem suggest that this differential will not continue, as higher prices will attract additional labour from other regions into London. We consider this a very weak justification which cuts against intuition and available evidence. London contractor inflation has been higher than the UK for at least the last 10 years (as shown in the chart below) so why has the 'perfect labour migration' that Ofgem suggests not happened already? Why should it suddenly happen in 2008?

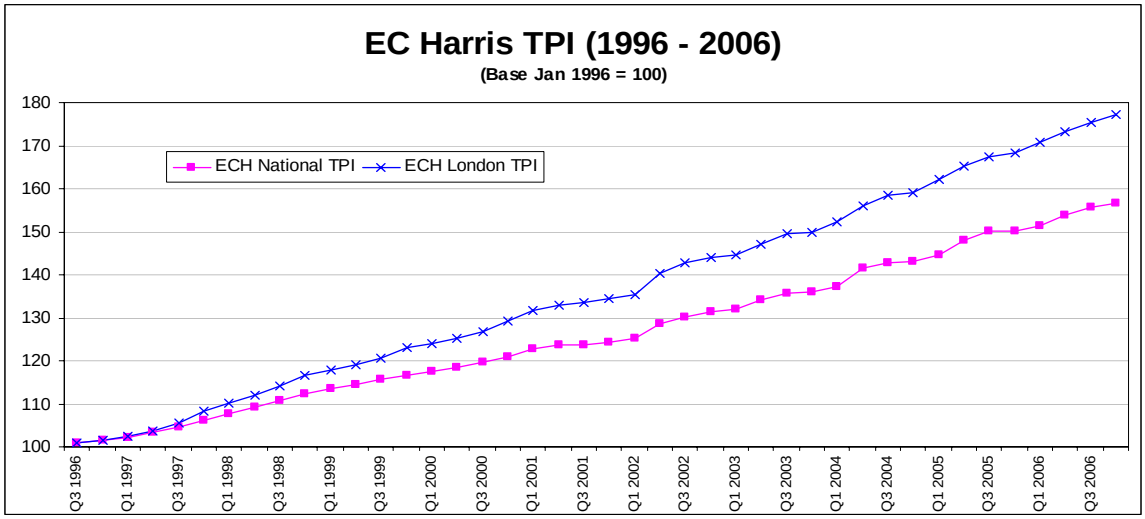

Figure 2.4 – EC Harris Tender Price Index 1996 to 2006

51. In reality, the construction experts with whom NGG interacts expect the rate of differential to actually increase in the medium term, and certainly not disappear, not least because of ongoing demand from some very significant major projects in the capital. The latest EC Harris forecast concurs with this, and gives an average differential for London of 1.67% pa. to 2012, giving a real price effect of RPI+4.75% (ie.3.08+1.67). Data supporting these calculations is provided in section 3, 4.1.

Downsizing

52. When designing a particular mains replacement scheme NGG will usually look to replace the existing main with the largest new main that can be inserted, in order to minimise cost and maintain capacity, and our BPQ reflected this general approach. The initial proposals assume that a fixed proportion[5] of mains over the next five years can be laid in the smallest diameter band (<=75mm), based primarily on a review of historical workloads. This method overlooks the fact that NGG will be replacing mains that are on average 13% larger than those replaced last period. A consequence of Ofgem's method would be the systematic erosion of existing capacity.

[5] 30% for North West and West Midlands, 25% for East of England and 12.5% for London

53. To quantify the impact of Ofgem's assumption NGG has carried out detailed network analysis on a representative sample of actual 2008/09 projects, the lengths involved being equivalent to around 75% of a typical annual programme. In all networks, deploying Ofgem's downsizing assumption caused system pressures to fail and supplies to be lost. To maintain supplies with Ofgem's assumption would require significant additional reinforcement capex. The analysis was also run to calculate the maximum downsizing that could be achieved without losing supplies on these networks and, as the results in table 2.3 below show, in all cases our BPQ assumptions were shown to be reasonable or, in some cases, rather stretching.

GDN	LP network	Mains replaced (km)	Ofgem Downsizing (%)	Maximum actual downsizing (%)	October BPQ downsizing (%)
North West	Morecambe	221	30%	19.5%	24%
East of England	Grimsby	201	25%	17.5%	17%
West Midlands	Rugby	145	30%	15.9%	18%
London	Southend	472	12.5%	4.1%	10%

Table 2.3 – Summary results of network analysis modelling

Further details on and examples of the network analysis are provided in section 3, 4.2.

Productivity

54. Ofgem's assumptions and methodologies for on-going efficiencies are a particularly disappointing aspect of the proposals, in that they have little credible substantiation and are, in most cases, unrealistic. PB Power's method of a 1% 'base rate' with incremental judgements on top is only supported by a superficial 'tick box' analysis featuring no specific evidence or examples. In some areas, Ofgem has subsequently increased PB Power's numbers, again without any apparent meaningful rationale or evidence.

55. The weakness of this whole approach is highlighted by looking at the resulting 'pecking order' of productivity assumptions by activity. Ofgem propose higher productivity from activities that are, in reality, the most difficult to improve. Connections for example attracts the highest productivity assumption of 3%, despite it being a very mature activity from a technological point of view, subject to a rigorous standards of service regime and where jobs are one-off in nature and geographically dispersed.

56. Consequently, we have undertaken a detailed critique of the tick box approach relating to connections. Further detail is provided in section 3, 4.3.1. In summary, we believe there is limited further scope for further productivity improvements beyond the base level of 1%. PB Power envisages that there is greatest scope for productivity improvement (three ticks) in

both clerical support costs and process improvements. However, NGG has already made organisational improvements through centralising and insourcing all support activities, with the benefits from this already built into our plans.

57. PB Power's unrealistic assumption contributes significantly to the allowances for connections being on average 28% below our BPQ, despite no reductions made to workloads. This includes a 22% reduction for West Midlands which is shown by PB Power to be the frontier performer. Connections is an example where the spreads across NGG networks (which rank 1st, 6th, 7th and 8th) raise doubts over some part of PB Power's regression analysis, given that all four are managed and administered centrally, use common policies, processes and systems, and use the same contracting strategy.

58. Further comments regarding the productivity assumptions for mains reinforcement and repex are provided in section 3, 4.3.

LTS

59. We are pleased to note that Ofgem has moved away from PB Power's desktop benchmarking of diurnal storage to a more project specific approach. We also recognise that Ofgem is undertaking further work in this area prior to the September update, particularly with regard to potential impacts of Exit and Interruptions reform. We look forward to discussing further the proposed – and in our view incorrect - deferrals of Peters Green to South Mimms (London) and Audley to South Cheshire (North West) projects with Ofgem. We also acknowledge that capex included in the BPQ for plant rationalisation at holder sites that are identified for disposal in the East of England network should have been covered by offsetting contributions and have rectified this in the June 2007 BPQ update.

60. There are two further developments impacting on LTS forecasts that will be covered during the summer review:

- Construction of the Harefield to Southall pipeline project in London has been deferred by a year and we are re-tendering the works to confirm the expected cost for this major project. Final tender information will be available in the autumn to inform Ofgem's Final Proposals.

- NGGT has recently informed NGGD that it will not be possible to transfer the Nether Kellet to Blackrod pipeline within North West network. Consequently, we have investigated alternative solutions to the storage issues for North West, including the potential development of a salt cavity or the advancement of construction of the Audley to South Cheshire pipeline to 2009/10 and have concluded that the salt cavity

is the most economic solution and have included the impact of these changes in our July 2007 BPQ update.

Other Workload Related Adjustments

Services

61. Ofgem has adjusted the proportion of services that can be transferred rather than re-laid in East of England and London networks, primarily, we believe, on the basis of historical trends. This approach will not accurately predict future proportions in some networks because of unrepresentative workloads in recent years. Within East of England, for example, transfer levels of around 70% were achieved in Derby as a result of the extensive redevelopment undertaken previously by the council, which had necessitated the renewal of many services. We have now moved out of Derby and the proportion of services being transferred in East of England has returned to more typical levels. Numeric evidence is provided in section 3.4.4.1, but the impact of this incorrect assumption is to underfund repex by £8m in East of England.

Abandon to Lay Ratio

62. Ofgem has reduced the length of mains to be laid in its proposals by applying an abandon-to-lay ratio of 1.05:1, determined with reference to historical ratios and other GDNs' forecasts. This method does not account adequately for NGG's progressive use of insertion techniques and would, perversely, require NGG to deliberately increase the proportion of mains replaced by open-cutting from that being achieved today, a much less efficient and more environmentally damaging technique. Further evidence and analysis is provided in section 3, 4.4.2. Ofgem should revert the abandon to lay ratio for NGG's networks to the submitted level of around 1.03:1.

Investment Items not yet considered

63. We note the areas listed in paragraph 4.59 of the Initial Proposals that are still to be assessed during the summer, which include:

- the rising costs of waste disposal – estimated to be £36m – driven by legislative and taxation changes which have currently been excluded from the allowances; and
- the appropriate level of allowance for the replacement of risers in multi-story properties. The allowances currently reflect the GDNs' forecasts.

Regional factors

64. There are also two aspects of the further work on regional factors (over and above labour rates, for which Ofgem's methodology already accounts) of significance to investment allowances. First, the proposals make no account for the proportion of East of England network's investment undertaken in the London Outer Met area, which means that Ofgem

should increase the regional factor for East of England from 0.96 to 0.98 (see Section 3, 4.5.3).

65. Second, no account has been given within the regression analysis of non-labour 'exogenous factors', for example the densely congested nature of London's underground infrastructure which causes excavations in the capital to be 46% larger than the average GDN, which in turn increases unit labour, reinstatement and disposal costs. Further information regarding London factors is provided in section 3, 3.10.

Chapter Five – Outputs

Question 1: Do you support our proposals for changes to the outputs and quality of service arrangements?

66. We continue to support the rationalisation and simplification of the existing regime but have some concerns with the proposals as they stand. We are disappointed that the current proposals do not actually achieve much simplification, and that several opportunities to rationalise have been missed. These points have been set out in more detail within section 3, 5.1 but are summarised below.

Replacement of the overall standards of performance with Licence Conditions

67. We understand why Ofgem have decided to replace a number of the overall standards of service and replace them with Licence conditions, but are concerned that a GDN may become automatically in breach of their Licence, with the associated, serious implications, because of extreme circumstances beyond their control, such as severe localised weather or a number of incidents coinciding. In such circumstances, the drafting of the Licence condition should afford Ofgem some flexibility to avoid triggering a breach automatically, provided the GDN has taken all reasonable steps to meet the requirements.

Transfer of overall standards to guaranteed standards

68. We support the proposal to convert overall standards into guaranteed standards. However in making this amendment, Ofgem have increased the obligations on the GDNs without providing allowance for either an additional level of funding to enable the GDNs to meet the obligations 100% of the time, or an efficient level of compensation payments. We estimate that the increased cost associated with the additional service level will be £350k, and this should be included in September's updated proposals.

Removal of Overall standards and replacement with additional customer satisfaction survey

69. We agree with Ofgem that, although service standards in this area are generally good, it is difficult currently to proactively report on performance, and therefore support the proposal to remove the affected overall standards and include additional measures in the customer satisfaction survey. We consider extra funding that Ofgem propose for the consumer research is reasonable.

Changes to the guaranteed standards of performance

70. We do not agree with some of the changes being proposed to the existing guaranteed standards, particularly in relation to the provision of alternative heating and cooking. We are also concerned with some of the detail in the supply restoration standard and the omission of

a compensation cap for the reinstatement standard. The detail behind these concerns can be found within section 3, 5.1.

Question 2: Do you support our proposals for improving the accuracy of pipeline records?

71. We of course agree with Ofgem that accurate pipeline records are important and we work hard to ensure that we have the most accurate records that we can practically and efficiently achieve. A review of the DR4 process showed that only around 2% of our recorded mains locations are inaccurate, a figure supported by the independently verified data from the National Leakage Tests. This is not to say GDNs can be complacent in this area however, and NGG are engaged on a number of initiatives to improve performance further. With regards Ofgem's proposals, it is important that the GDNs are assessed on measures over which they have direct control and so our views are that:

- It would be appropriate for GDNs to be measured on the timeliness with which they digitise records (with safeguards to ensure measurement on a comparable basis);
- It would not be appropriate to use the absolute number of DR4s and DR8s as a performance metric, as these are strongly affected by underlying variations in records quality which cannot quickly be resolved. The number of DR4s raised per km of main across our networks for example varies by up to 60%, despite consistent processes being in place. Further detail is provided in section 3, 5.2.

Question 3: Is Ofgem's proposed approach to setting allowances for the outputs and quality of service arrangements for 2008-13 appropriate?

72. We are disappointed by the approach that Ofgem has adopted for the determination of the allowances for compensation payments. Compensation payments are driven by the number of incidents in a network and not the number of customers – this can be seen by variations in the number of payments per customer made from year to year in each GDN. We submitted a detailed breakdown of the level of expected cost by each of the current standards in response to the main BPQ. Within the initial proposals, Ofgem has proposed allowances which do not meet the current level of compensation payment required, whilst continuing with the rationalisation of the standards of service, which introduce more compensation payments. Ofgem should fund the GDNs for an efficient level of compensation payments, as set out in NGG's BPQ.

Chapter Six – Incentives

Question 1: Are the proposals for the capex rolling incentive and IQI appropriate?

73. We continue to believe that the differing nature of capital and replacement expenditure justifies a different formulation of incentives. A very high proportion of gas distribution capex is directly customer driven and mandatory, the consequence being workloads are unpredictable and beyond the control of GDNs, as clearly demonstrated by the £0.9bn overspend by the 8 GDNs in the last price control period, of which only 4% was subsequently determined as inefficient by Ofgem. The non-rolling "traditional" form of capex incentive actually tapers down the proportion of any over or underspend apportioned to shareholders as the period – and hence uncertainty – progresses. Repex on the other hand has a supplementary mechanism in place that automatically adjusts allowed revenues for workload variations, much reducing the scope for windfall gains or losses for GDNs and so, in our view, justifying a higher powered incentive.

74. It appears likely however that a rolling incentive, as part of the IQI first seen at DPCR4, will be implemented at GDPCR. Our only further comment here relates to the proposal to remove the 5% uplift that was used in DPCR4 and featured in the GDPCR fourth consultation. The Initial Proposals justify this removal on the grounds that the DPCR4 mechanism was baselined on Ofgem's consultants' raw analysis, in contrast to GDPCR where the baseline is set on Ofgem's 'moderated view' of the consultant's work. This justification does not withstand scrutiny, as the net impact of Ofgem's moderation has been to reduce the GDNs' forecasts by even more than is proposed by their consultants. In the interests of regulatory consistency and transparency, and in the absence of a reasonable justification for change, Ofgem should reinstate the 5% uplift in September's update. In addition, the baseline should be updated for exogenous changes that have occurred since the submission of the October BPQ and incorporated in GDNs' July updates in line with Ofgem's process.

Question 2: Are the proposals for the mains and services replacement incentive appropriate?

75. We believe that the supplementary incentive mechanism is an effective way of managing variations in mains replacement workloads and agree that the proposed developments outlined in the proposals, namely the inclusion of additional diameter bands, the inclusion of separate services matrix values and symmetrical incentives, will improve its effectiveness.

Question 3: Is it appropriate to implement an opex rolling incentive?

76. The periodicity inherent with traditional cost incentives reduces companies' incentives to invest in cost-saving initiatives in the latter years of a control period. Ofgem's 'Developing Network Monopoly Price Controls' work concluded that this can be mitigated either by increasing the savings retention period or through inter-company cost benchmarking (as the benefit for companies 'off the pace' to delaying improvements in any year would be reduced). GDNs are clearly now in a comparative environment and, as such, we consider the justification for rollers on this basis has lapsed.

77. Conversely, it can be argued that improvements across the industry as a whole (ie. the 'frontier shift') would be greater with rolling incentives, even in a comparative environment, as the industry a whole would be able to justify embarking on cost saving initiatives that, while economically efficient, have longer payback periods (as do the majority of the initiatives that remain, after 20-plus years of effective RPI-X regulation). There could therefore be a justification for the introduction of an asymmetric roller at GDPCR, ie. one that extends the period over which cost savings from investments in initiatives are retained, but does not apply to any overspends.

Private Networks

78. We note Ofgem's comments on private gas networks and agree that it may be advantageous, in the interest of public safety, for such networks to be adopted by the GDNs. We are supportive of the proposed principle of a case by case assessment and have provided further detail the implications in section 3, 5.4.

Research & Development

79. Ofgem note areas such as R&D where we would argue a long term sustainable commitment to funding is necessary to deliver consumer benefits over time. Allowances for a single review period alone do not encourage a long term programme of investment.

Chapter Seven – Sustainable Development

Question 1: Do you agree with our assessment of the risks, costs and benefits attributable to the options for facilitating network extensions (Appendix 14)?

80. We agree with Ofgem's assessment of the various options for tackling fuel poverty and we support their decision to implement Option 6.

Question 2: Do you agree with our initial proposal (i.e. Option 3 complemented by a discretionary reward scheme)?

81. We think option 3 may not be in the best interests of fuel poor consumers. The co-ordination of network extension projects has a considerable lead time as a result of:
    a. Complex funding arrangements from a number of different Government departments, NGOs and commercial organisations;
    b. Extensive liaison with the communities and their representatives;
    c. Establishing relationships with organisations able to help with non-infrastructure aspects.

82. As Ofgem demonstrates in the Impact Assessment, the quality of co-ordination across agencies has a material impact upon the level of take-up, and the hence the ultimate success. Consequently, we believe it is important that committed funding is available beforehand. Option 3 would lead to GDNs being expected to commit expenditure over an extended period without any certainty to the final level and duration of funding, which could put such schemes at risk.

Question 3: Do you consider our proposed method to implement Option 6 appropriate (i.e. through GDNs' connection charging statements)?

83. We believe including Option 6 within the charging statement is the most appropriate implementation method.

Question 4: Do you consider the Government's Index of Multiple Deprivation to be an appropriate index to identify which fuel poor non-gas communities qualify for special treatment for gas network extensions? If not, what do you recommend?

84. The criteria used to determine when Option 6 can be used must be clear, objective and unambiguous, as they will form the basis upon which the GDNs will differentiate the way in which network extension projects are funded. Lack of clarity could result in GDNs being exposed to claims of discrimination therefore. We are not socio-economic experts and expect

Ofgem will take advice from more informed parties before determining the final criteria. However, based on our experience from the Stockton Warm Zone, we believe that there is a reasonable correlation between fuel poverty and the Index of Multiple Deprivation (IMD).

Question 5: Do you support our proposals for the introduction of a Discretionary Reward Scheme for GDNs and its format given the larger reward?

85. National Grid supports the introduction of a Discretionary Reward Scheme (DRS) to fund programmes which do not receive an allowance through the price control. We are also encouraged by the scale of the scheme proposed, as there are many potential programmes that could make a material positive impact on gas consumers and wider society.

86. We also agree that the funding, which will be provided by the existing consumers, should be targeted at policies of direct benefit to gas consumers, rather than more general corporate social responsibility activities. However, we do not believe that it would be appropriate at this stage to overly restrict or pre-determine the scope of eligible categories, as this unnecessarily risks discouraging excellent ideas that may yet emerge. For example, we are currently working in conjunction with other GDNs on a number of potential schemes to improve the awareness of gas safety. For activities that are closely aligned to regulatory obligations, the scheme should enable full funding of costs.

Gas shrinkage arrangements

87. The majority of NGG's carbon output comes from shrinkage, of which 88% is associated with leakage from low and medium pressure mains. We note Ofgem's interest in establishing a scheme which more closely reflects the environmental cost of shrinkage and we look forward to working with Ofgem and the industry on this. NGG is currently developing a proposal for a scheme to assess the impact of gas leakage at the project assessment phase which we intend to discuss with Ofgem in the near future.

88. It should also be noted that, while the mains replacement programme contributes to reducing gas leakage, the economics of pipe replacement do not generally as yet justify the proactive replacement of mains on leakage grounds alone.

89. Regarding the current shrinkage framework, we consider that it provides an effective and appropriate balance between encouraging GDNs to limit the amount of gas lost and protection for GDNs and consumers from gas price variations. It is probably appropriate though to replace the current point estimate of the price uplift with a formula-driven methodology within the licence, given the five year duration.

90. Finally, we do not support the suggestion that leakage tests should be updated. The results of the last tests from 2003 are still valid and the costs associated with an update – which would be well in excess of £10m - would outweigh the benefits to customers over the next period.

Chapter Eight – Other Issues

Question 1: Do you agree with our proposed approach to the funding of xoserve?

91. NGGD support the objectives of Ofgem's proposed core and User Pays approach because it is important that the party which is responsible for incremental expenditure bears the additional cost. Further to this, User Pays may remove the disincentive for xoserve to innovate and provide new services. However, whilst we support the objectives of the change, it is important to note that the change is unlikely to result in a significant change to the way in which xoserve is funded in the short or medium term. Further to this, the change will place an additional burden on the Authority because they will be required to act as the key decision maker in the application of a User Pays approach. We have set out how we believe a User Pays approach may work in more detail in Section 3, 8.1, along with our responses to the other xoserve questions set out in the initial proposals.

Chapter Nine – Financial Issues

92. Summarised below are the key points from our response to question 1. Our detailed submission, including a full response to question 2 can be found in section 3, 9.1 – 9.9.

Question 1: What are your views on the factors relevant to our consideration of cost of capital?

93. At a conceptual level, National Grid believes that the key factors relevant to Ofgem's consideration of cost of capital include market evidence on the building blocks of the CAPM model, previous regulatory determinations on cost of capital taking into consideration the differences in risk profiles and any asymmetric risks associated with the regulated package which require an adjustment to the allowed return.

94. We note that for the "modelling assumption" in Initial Proposals, Ofgem has used an aggregate cost of debt figure 20bps below that used in the TPCR. This suggestion appears to take no account of the recent decisive turn in interest rates and as far as we can see the only significant change since TPCR in terms of cost of capital is that the historically low interest rates that have persisted for several years are now on the increase.

95. This presents a problem at this review. In setting the cost of debt for a price control, regulators are seeking to determine a reasonable proxy for the rates that will apply for the next five years. We have very much supported the use of long term trailing averages in previous reviews on the prudent basis that the risk free rate is expected to revert at some time towards a higher longer run average.

96. However, the recent rise in interest rates has seen spot rates rising above the trailing average. Persisting with the use of trailing averages in such an environment is no longer appropriate. Given the generally accepted view that future interest rates are likely to be higher rather than lower, such an approach is likely result in insufficient allowance for debt funding. Therefore, National Grid would argue that the base figure from which to build the debt allowance is the current spot rate. On top of that, we would argue for an additional allowance to cover volatility around the spot rate and further Bank of England interest rate increases.

97. We appreciate that Ofgem may be concerned that moving from a long run trailing average to a "spot rate plus" is asymmetrically tilted against consumers over the interest rate cycle. However consumers can be expected to benefit from this approach: it is more likely to provide networks with positive incentives to invest over the interest rate cycle and it reflects the reality that companies bear the interest rate risk between price controls.

98. Our provisional survey of the market evidence on the components parts of cost of debt indicates that the bottom end of the range for cost of debt is 4.1% (pre tax real). This incorporates a risk free rate, low end estimate of 2.7% based on the current nominal yield on 10yr conventional gilts less the Bank of England inflation expectation and a debt premium estimate of 1.4% which is based on the figure used in TPCR plus an adjustment to reflect the typically lower credit rating of gas distribution businesses compared with transmission. National Grid would expect that Ofgem's allowance for cost of debt to be in excess of 4.1% in order to compensate for interest rate volatility and the possibility of further interest rate rises over the next period.

99. We acknowledge that Ofgem has legitimate concerns regarding the current setting of fixed rates of return for five year periods which may be asymmetrically biased against customers. However, in the time frame available under the GDPCR, National Grid believe that Ofgem is unlikely to be able to resolve all the issues associated with the implementation of debt indexation with or without triggers.

100. National Grid feel that the range for cost of equity used in TPCR is an appropriate starting point for the GDPCR. Clearly however, it is important that in determining its Gas Distribution allowance for cost of equity, Ofgem adjusts this range for the outputs of the relative risk analysis between Transmission and Distribution as well as the adjustment required to cost of equity as a result of any gearing assumption above that used in TPCR (i.e. 60%).

101. We believe that the cost allowances proposed by Ofgem in Initial Proposals are likely to be unachievable. In principle, if the risks inherent in the price control settlement are asymmetric, this could be compensated by an adjustment to the overall rate of return. In deciding on the final rate of return, Ofgem will need to consider where the balance of risk lies in the overall regulatory package.

102. One particular area of asymmetry is the risk that companies will be unable to recover their full regulatory asset value over many regulatory cycles. This risk operates only one way – against the company – and is exacerbated by long regulatory depreciation periods. This is a clear area of comparative difference between network types. Gas distribution has a much longer regulatory depreciation period than, for example, electricity transmission. This difference leaves gas distribution investors exposed to the terminal value risk for many more regulatory cycles. Given that gas is a depleting resource and that gas in homes has been identified as a major source of carbon emissions by the government, it would seem that this terminal value risk is also more likely to be felt in gas distribution than in other networks. This long term uncertainty over investments in gas distribution assets could, conceptually, be addressed through additional return or a review of asset lives.

Summary of Cost Assessment Issues and Recommended Ofgem Actions

Critical Issues

Area	Issue Requiring Addressing	Recommended Action	Para No
Comparison Method	Bottom up analysis is undermined by normalisation issues and is not a reliable basis on which to set allowances	Revert to a top down approach	Various
Choice of Benchmark	Setting the (crucial) top-down benchmark at the frontier is unsustainable, unprecedented and inconsistent.	Set benchmarks at the upper quartile throughout	18
Top Down Cost Driver	Use of a 50:50 'fudge' that is unsupported by analysis and that, perversely, lowers the correlation with GDN costs.	Use the best-fit single driver (customer numbers) and then test for any network specific adjustments	21
Frontier Shift	Poor quality, out of date TFP analysis	Use the superior RPI based approach	23
Investment Strategies	No assessment done to date of the impact on future opex of different levels of investment across GDNs	*Bottom up:* improve assessment of maintenance and asset management *Top down:* sense check allowances on a total-cost-per-customer basis	32
Capitalisation	No account taken of different operating models	Use upper quartile benchmark in top down analysis	35
London Factors	Significant additional costs not yet assessed	Assess for September Update	44
Real Pay Awards	Unreliable assumptions used which ignore historic and external data	Account for growth in real earnings; revert to longer term historical trends	29
Real Contractor Inflation	Method does not use latest data and assumes, unrealistically, that London differential will disappear	Update methodology for latest data and account for enduring London differential	49
Connections Productivity	3% pa. assumption unrealistic and unsubstantiated	Sense check against practical evidence	55
Repex Engineering Assumptions	Downsizing of mains laid will lead to widespread system failure	Assess further evidence and revert to NGG assumption	52
Holistic Review	Some counter intuitive inter-GDN relationships on allowances	Sense check final output of detailed methods	4

Other Issues

Indirect Drivers	Some inappropriate cost drivers	Refine cost drivers	37
Indirect Benchmarks	Suspect external benchmarks for HR & Finance; incorrect insurance trends; inadequate SGN normalisation	Review comparability of benchmarks and latest insurance evidence; consider excluding SGN from analysis	37
Work Management	Inappropriate cost driver – Overestimates impact of leakage and overlooks customer impact	Account for key cost drivers.	41
Repair Volumes	Simplistic 3% blanket assumption	Refine analysis to factor in network specific differences.	42
Maintenance	Insufficient consideration of GDN specific issues and use of single base year for benchmarking	Adjust benchmarking to account for cyclic nature of spend and GDN specific asset condition	43
Notional Values	Distorts regression and allocation of allowances to activities	Test allocation of different GDN rates and ensure allocation of allowance to activities is sensible	46
Outer Met	Regional factor for East of England does not account for 'outer met'	Apply factor of 0.98 for East of England	64
Areas Awaiting assessment	CO; Risers; London Factors; Training & Recruitment; Metering.	Undertake assessments	63