Appendix 2 - Operating costs

I Overview

1 As highlighted in our main response the gap between us on the operating costs of meeting our obligations is £203m, albeit that £47m of this gap relates to issues which Ofgem explicitly see as still under consideration. If this position is maintained for Ofgem's Final Proposals **it will effectively reduce the base rate of return that we can expect to earn in the forthcoming price control period by approximately 40 basis points**.

2 This conclusion is made prior to any assessment of the further incremental under-funding of opex that may result from any increased maintenance and repair actions required to mitigate Ofgem's proposed reductions to our capital investment programme should these also not be rectified prior to Final Proposals.

3 We believe that the above position arising from the Updated Proposals hinges around four broad categories of Ofgem reductions from our proposed allowance:

(a) **£56m** of excess efficiencies that go well beyond any reasonable assessment of potential future efficiencies that could be extracted from our operations.

(b) **£72m** of erroneous reductions in the proposed allowance associated with:

(i) assuming the benefit in Transmission of costs passed on to other National Grid activities despite Transmission not incurring the costs in the first place;

(ii) removing certain costs from allowances despite those costs not forming part of allowances in the first place; and

(iii) choosing to ignore increased cost allocations for certain cost areas because of the implementation of the new Ofgem approved cost allocation methodology despite the methodology being neutral in aggregate to the business and despite countervailing reduced cost allocations being accepted.

(c) **£29m** of under-funding arising from the exclusion of certain categories of cost in the name of "Ofgem policy", many of which fail to recognise the inherently efficient nature of these costs and their proper attribution to the regulated businesses.

(d) **£47m** of issues that are still work in progress, but currently have a default of reduced / zero remuneration.

4 Together these reductions lead to an allowance that is inconsistent with us simultaneously delivering on our obligations and achieving a return equal to our deemed cost of capital.

5 We believe that the only proper solution to this issue is at least a **£150m increase in the opex allowance** in order to avoid the position that the funding of this risk will be from within the base rate of return.

6 The scale of the gap between National Grid and Ofgem on opex is deeply disappointing as there seems to be little recognition of:

(a) the scale of challenge we set ourselves in our submissions through our Transmission Efficiency Challenge ("TEC") which we set at levels significantly more demanding than those included within Ofgem's frontier shift;

(b) the broad endorsement of the efficiency of our operations as evidenced in the consultants' reports;

(c) the maturity of our TO businesses; and

(d) the fact that not all cost reductions can be achieved without investment.

7 The remainder of this appendix deals with the key issues underlying the funding gap to be resolved in five further sections:

(a) in **Section II** we define the size of the funding gap between Ofgem's Updated Proposals and National Grid's submissions for opex remuneration;

(b) in **Section III** we comment on the excess efficiency improvements proposed by Ofgem;

(c) in **Section IV** we set out certain errors in Ofgem's analysis that remain unresolved in the Updated Proposals;

(d) in **Section V** we comment on the costs excluded from our opex allowances seemingly as a result of Ofgem policy; and

(e) in **Section VI** we comment on issues where Ofgem's work is incomplete.

8 Finally, **Section VII** provides answers to specific opex related questions posed by Ofgem in their Updated Proposals.

II The funding gap

9 This section builds on the data presented in the Ofgem Updated Proposals and further detailed workings that have been exchanged between Ofgem and National Grid to form:

(a) a corrected version of the gap between Ofgem and National Grid as presented by Ofgem in their Updated Proposals; and

(b) a view of further factors that need to be taken into account in order to gain a full financial picture of the opex issues that remain unresolved.

Correction to Ofgem Updated Proposals

10 The numbers presented by Ofgem in their Updated Proposals require some adjustment in order to make them internally consistent and suitable for like for like comparison such that they can be used to express the gap that exists between Ofgem and National Grid. The numbers as currently presented by Ofgem are summarised in the following table:

Summary of Ofgem Updated Proposals Data	**NGET £m**	**NGG £m**	**Total £m**
National Grid Foreast [A]	896	324	1,220
Ofgem Initial Proposals [B]	709	282	991
Ofgem Updated Proposals [C]	754	293	1,047
Ofgem Movement from Initial Proposals [C - B]	45	11	56
Gap Expressed by Ofgem [A - C]	**142**	**31**	**173**
Gap %	**16%**	**10%**	**14%**

11 The Ofgem Updated Proposals of £1,047m, however, are not directly comparable the National Grid forecast of £1,220m owing to:

(a) the exclusion of £71m of opex remunerated as quasi capex by Ofgem in their Updated Proposals where these costs feature in the National Grid forecast of £1,220m; and

(b) the inclusion of £75m of non-operational capex remuneration in the Ofgem Updated Proposals where these costs formed part of our capex submission and do not feature in the National Grid forecast of £1,220m.

12 The following table corrects for these two differences and sizes the gap on a like for like basis at around £177m. It is important to note that the corrected gap in relation to NGG of 15% is significantly wider (by 5 percentage points) than that in the Ofgem presentation of the numbers.

Corrected Gap Analysis	NGET £m	NGG £m	Total £m
National Grid Foreast [A]	896	324	1,220
Ofgem Updated Proposals	754	293	1,047
Plus: Quasi Capex remunerated in Capex	69	2	71
Less: Non-Operational Capex remunerated in Opex	- 55	- 20	- 75
Corrected Ofgem Updated Proposals [B]	**768**	**276**	**1,043**
Corrected Gap [A - B]	**128**	**49**	**177**
Corrected Gap %	**14%**	**15%**	**15%**

Further outstanding factors

13 This corrected version of the numbers presented in Ofgem's Updated Proposals, however, does not factor in the full range of issues associated with Ofgem's assessment of opex that remain outstanding (and where each has a discernable financial impact) where resolution is essential prior to the publication of Final Proposals.

14 Our response to Ofgem's Initial Proposals and subsequent presentations to GEMA focussed on a headline gap of £266m that reflected precisely this full range of issues. The following table builds on the corrected £177m base to provide a full expression of the current gap comparable to our original £266m baseline.

Complete Picture of Updated Proposals Gap	Total £m
Corrected Ofgem Updated Proposals Gap	**177**
Quarry and Loss of Development Claims	12
Excluded Services	14
Complete Picture of Updated Proposals Gap	**203**

15 In evaluating Ofgem's Updated Proposals (and in turn Final Proposals) we must take account of the full spectrum of unresolved issues and these currently amount to £203m.

III Areas of difference with Ofgem's efficiency driven adjustments

16 We note Ofgem's comment in their Updated Proposals that they have not made (and will not seek to make) further adjustments to our opex allowances in relation to our assumed levels of real pay growth. We welcome this decision as we feel that our case in this area is strongly supported by both historical trends and forecasts for the sector and economy as a whole.

17 This section now sets out the remaining areas of difference that persist between Ofgem and National Grid in relation to Ofgem's proposed efficiency adjustments associated with consultants' reviews:

(a) insurance;

(b) quasi capex;

(c) shared services;

(d) corporate centre;

(e) electricity engineering;

(f) gas engineering; and

(g) information systems.

Insurance

18 Our response to Ofgem's Initial Proposals set out significant issues associated with Ofgem's treatment of insurance costs because of both:

(a) an arithmetical flaw associated with Ofgem's deduction of its proposed efficiency savings from a flat extrapolation of our 2004/05 insurance costs as opposed to the rising linear trend projected in our submissions against which the efficiency savings had been calculated; and

(b) Ofgem's assumption that efficiency savings can be achieved through assuming a cyclical projection for the insurance market. In aggregate we identified a £35.8m under-funding of our insurance costs.

19 We are disappointed to find that despite the robustness of our response to the Initial Proposals, Ofgem's Updated Proposals still reflect an under-funding in the order of £33.7m. This section now goes on to address the causes of this under-funding.

20 The following table compares the Initial Proposals and Updated Proposals insurance allowances calculated by Ofgem by regulated entity:

Ofgem Initial and Updated Proposals Compared	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total £m
Initial Proposals						
- NGET	5.1	3.6	4.9	6.7	8.9	**29.2**
- NGG	4.7	3.8	4.6	5.6	6.8	**25.5**
- Total	**9.8**	**7.4**	**9.5**	**12.3**	**15.7**	**54.6**
Updated Proposals						
- NGET	6.0	5.3	6.8	8.4	10.0	**36.5**
- NGG	3.3	2.9	3.8	4.7	5.5	**20.2**
- Total	**9.4**	**8.2**	**10.6**	**13.1**	**15.5**	**56.8**
Movement						
- NGET	1.0	1.7	1.9	1.7	1.1	**7.3**
- NGG	(1.4)	(0.9)	(0.8)	(0.9)	(1.2)	**(5.2)**
- Total	**(0.4)**	**0.8**	**1.1**	**0.8**	**(0.2)**	**2.1**

21 Ofgem have completely revised their calculation basis in the Updated Proposals such that they now:

(a) select our insurance costs for 2005/06 as the base point for their extrapolation; and

(b) fix the ratio of insurance costs allocated to NGET and NGG at 2005/06 levels rather than reflecting the correct ratios identified in our submissions.

22 By changing this calculation basis the net effect of Ofgem's Updated Proposals is to correct for only £2.1m of the £35.8m under-funding identified in our response to their Initial Proposals. The table above also highlights that Ofgem's new calculations give rise to a worrying swing in allowances between NGG and NGET that casts great doubt over the process being adopted.

23 Ofgem's use of 2005/06 as a base point is effectively taking a snap shot view of both costs and allocations ratios and applying these to the entire price control period. This approach is inconsistent with the new allocation methodology approved by Ofgem. Each of these points is now dealt with in turn.

2005/06 super-efficiency

24 The Marsh report analyses National Grid 2005/06 Insurance costs as base year costs and compares these against their expected estimate of efficient insurance costs. Marsh conclude:

25 "the Marsh estimated insurance costs at the expected level are approximately £28.6m, this compares to an actual spend by National Grid of £26.6m. This represents a variance of just under £2m in National Grid's favour and therefore **highlights the competitiveness of National Grid's premium spend."**

26 The Ofgem calculations based on the Marsh report then go on to project insurance cost forecasts for the period 2006/07 to 2011/12 using a series of percentage adjustment factors to replicate the Marsh market cycle, however,

in calculating these factors and the subsequent annual opex allowances **Ofgem have proceeded from the wrong starting point**.

27 The following table sets out the error in Ofgem's calculations in detail. Effectively, Ofgem, in attempting to replicate the Marsh market cycle assume that costs will initially step down by 10.3% from £28.6m in 2005/06 to £25.6m in 2006/07. This initial step down then forms the first step in a series of cumulative adjustments that extrapolate from our actual insurance costs for 2005/06 to form opex allowances out to 2011/12.

28 Such a calculation is clearly wrong given that Marsh have already recognised that our 2005/06 cost of £26.6m is effectively super efficient versus their £28.6m theoretical estimate of an insurance cost for 2005/06. As the Ofgem allowances stand, rather than representing the Marsh cyclical view of the market they factor in super-efficiency. The correct starting point for Ofgem's calculations was in fact the 3.8% step down from £26.6m in 2005/06 to £25.6m in 2006/07.

29 Part two of the following table sets out a corrected Ofgem opex allowance and highlights the additional £4.1m of funding that is required to correctly reflect the Marsh market cycle in our allowances.

Insurance Market Cycle Base Point	**2004/05 £m**	**2005/06 £m**	**2006/07 £m**	**2007/08 £m**	**2008/09 £m**	**2009/10 £m**	**2010/11 £m**	**2011/12 £m**	**Total 2007/08 to 2011/12 £m**
Part 1 - Ofgem Derivation of Market Cycle									
Adjusting Factors & Opex Allowances									
Marsh "Expected" Market Cycle		28.6	25.6	22.7	19.7	25.7	31.6	37.6	
Ofgem Market Cycle Factors			-10.3%	-11.5%	-13.0%	30.2%	23.2%	18.8%	
(Percentage Annual Changes)									
Ofgem Opex Allowance									
- NGET		7.6	6.8	6.0	5.2	6.8	8.4	10.0	**36.5**
- NGG		4.2	3.8	3.3	2.9	3.8	4.7	5.5	**20.2**
Total		**11.8**	**10.6**	**9.4**	**8.1**	**10.6**	**13.1**	**15.5**	**56.7**
Part 2 - Corrected Derivation of Market Cycle									
Adjusting Factors & Opex Allowances									
Marsh "Expected" Market Cycle		26.6	25.6	22.7	19.7	25.7	31.6	37.6	
Ofgem Market Cycle Factors			-3.8%	-11.5%	-13.0%	30.2%	23.2%	18.8%	
(Percentage Annual Changes)									
Corrected Ofgem Opex Allowance									
- NGET		7.6	7.3	6.5	5.6	7.3	9.0	10.7	**39.2**
- NGG		4.2	4.0	3.6	3.1	4.1	5.0	5.9	**21.7**
Total		**11.8**	**11.4**	**10.1**	**8.7**	**11.4**	**14.0**	**16.7**	**60.9**
Increase required to correct Ofgem allowances				**0.7**	**0.6**	**0.8**	**1.0**	**1.1**	**4.1**

Cost allocation ratios

30 In supplementary submissions we have explained several cases in which Ofgem have adopted flat extrapolations of cost allocations performed for 2004/05 as a basis for setting allowances rather than the cost allocation methodology that Ofgem have themselves approved as part of the Transmission Price Control Review process.

31 A similar issue arises in the case of Ofgem's proposed insurance allowances where rather than follow the allocation ratios set out in our submission that were derived from the newly approved methodology Ofgem have chosen to fix the allocation ratios this time at 2005/06 levels.

32 The following table illustrates the allocation ratios used by Ofgem compared with those in our submission. It is clear from the trend in our submission that 2005/06 was a transitional year in relation to allocation ratios and that they stabilise at different levels over the period of the Transmission Price Control Review.

Insurance Allocation Ratios	2004/05 %	2005/06 %		2007/08 %	2008/09 %	2009/10 %	2010/11 %	2011/12 %
Part 1 - Ofgem Updated Proposals								
(Allocation ratios fixed at 2005/06 levels)								
- ETO		23%		23%	23%	23%	23%	23%
- GTO		14%		14%	14%	14%	14%	14%
- ESO		5%		5%	5%	5%	5%	5%
- GSO		3%		3%	3%	3%	3%	3%
- Non-Transmission		55%		55%	55%	55%	55%	55%
Total		**100%**		**100%**	**100%**	**100%**	**100%**	**100%**
Part 2 - National Grid Submission								
(Approved Cost Allocation Methodology Ratios)								
- ETO	19%	23%		29%	29%	29%	29%	29%
- GTO	15%	14%		16%	16%	16%	16%	16%
- ESO	4%	5%		5%	6%	6%	6%	6%
- GSO	1%	3%		4%	4%	4%	4%	4%
- Non-Transmission	61%	55%		46%	45%	45%	45%	45%
Total	**100%**	**100%**		**100%**	**100%**	**100%**	**100%**	**100%**

33 The revised Ofgem approach for setting our insurance opex allowances seems to hinge around selection of 2005/06 as a base year for extrapolation when 2005/06 was both:

(a) "super-efficient"; coupled with

(b) a low allocation ratio to Transmission.

34 Such an approach seems particularly one-sided. The following table takes the Ofgem insurance opex allowances that we have previously corrected for the super-efficiency of 2005/06 and applies the further correction required in order to bring those allowances in line with the approved cost allocation methodology

Insurance Opex Allowances Corrected for Approved Cost Allocation Methodology Ratios	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total 2007/08 to 2011/12
Part 1 - Ofgem Updated Proposals						
(Corrected for Super-Efficiency in 2005/06)						
- ETO (NGET)	6.5	5.6	7.3	9.0	10.7	**39.2**
- GTO (NGG)	3.6	3.1	4.1	5.0	5.9	**21.7**
Total	**10.1**	**8.7**	**11.4**	**14.0**	**16.7**	**60.9**
Part 2 - Corrected Allowances						
(Using Approved Cost Allocation Methodology Ratios)						
- ETO (NGET)	8.2	7.1	9.2	11.4	13.5	**49.4**
- GTO (NGG)	4.1	3.6	4.6	5.7	6.8	**24.8**
Total	**12.3**	**10.7**	**13.9**	**17.1**	**20.3**	**74.2**
Part 3 - Incremetnal Adjustment to Allowances						
- ETO (NGET)	1.7	1.5	1.9	2.4	2.8	**10.2**
- GTO (NGG)	0.5	0.4	0.6	0.7	0.8	**3.1**
Total	**2.2**	**1.9**	**2.5**	**3.1**	**3.6**	**13.3**

Linear v cyclical market projections

35 National Grid note Ofgem's view that market cycles are historically evident in the commercial insurance market, however, National Grid is concerned that an extrapolation of the Lloyd's Non-Marine Index as presented in the Updated Proposals is inadequate and does not accurately reflect the increasing risks and exposure the regulated businesses face over the next price control period for the following reasons:

(a) The Lloyd's market underwrites only a very small percentage of National Grid's risk because it cannot offer the breadth of cover and limits obtained elsewhere. Given this, most of our captive reinsurance is placed in the Company Market.

(b) The Non-Marine index is too general and does not reflect the difficulties in obtaining appropriate insurance cover for National Grid.

(c) Non-Marine risks cover a wide variety of structures, ranging from buildings to factories and hence do not always include utilities (indeed these are often classified separately as energy risks)

(d) Utilities have unique general liability and property damage / business interruption risks.

36 Marsh effectively presented two projections of the index for Ofgem in their report, one a linear extrapolation and the other an attempt at extrapolating the historically cyclical nature of the insurance market. The Marsh report documents certain limitations associated with their analysis of cyclicality for Ofgem. The cyclicality work undertaken by Marsh appears to have been drawn out from their report in isolation by Ofgem given that **Marsh clearly state in their report that the National Grid premium forecasts are "…significantly less than our projected premiums" and "query the viability" of our low growth rate.**

37 We consider Ofgem's selection of the Marsh market cycle forecast to be a low probability / high cost reduction case that is unlikely to be borne out by fact. We totally disagree with the severity of the resulting downward adjustments to our opex allowances and propose that Ofgem **at the very least** take account of each of the potential views of the market put forward by Marsh (and over which they clearly did not express a preference for the cyclical over the linear in their report) in order to mitigate the severity of their Updated Proposals and to take a more balanced approach.

Insurance - conclusions

38 We have already noted how:

(a) in our response to the Initial Proposals we identified a £16.0m arithmetical flaw contributing to the £35.8m gap that existed at that time; and

(b) how Ofgem, in their Updated Proposals have altered the basis of their calculations rather than increasing our opex allowances in line with the correction of this flaw; yielding an allowance that has improved by only £2.1m thus closing the gap only to £33.7m.

39 The Ofgem Updated Proposals relating to Insurance, advocating an allowance of just 63% of our forecast, are not a credible view of future TO insurance costs. The proposed allowance flies in the face of Marsh's endorsement of our forecast as evidenced in their report and whilst we accept that there are alternative bases that could be used to project our insurance costs a reduction of 37% is untenable.

40 In this response we have set out two stages of arithmetical correction to Ofgem's Updated Proposals that:

(a) correct for £4.1m of "super-efficiency" that is now being extrapolated from 2005/06; and

(b) a further £13.3m correction associated with the newly introduced fixing of allocation ratios at 2005/06 levels.

41 Following these two stages of correction the resulting opex allowances would total £74.2m which compared with our £90.5m submission would represent a reduced £16.3m (18%) gap. We believe that this would then present an arithmetically correct representation of the Marsh market cycle.

42 We believe that Ofgem should then take additional steps to mitigate the severity of their proposed market cycle adjustments (i.e. explicitly assuming a trough in premia) in order to present a more balanced and central view of the insurance market.

Quasi capex

43 As described in our response to Ofgem's Initial Proposals we welcome Ofgem's recognition of the concept of "quasi capex" expenditure, however, we totally reject their associated £13.8m efficiency adjustment.

44 For reference the following table illustrates the individual items of quasi capex expenditure in our submissions and the transfer from our opex allowance to our capex allowance made by Ofgem. The £13.8m adjustment arose from Ofgem simply adding in a lower value to our capex allowances than they deducted from our opex allowances.

Quasi Capex	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total £m
NGET						
Tower Foundations & Steelwork	5.3	5.3	5.3	5.3	5.3	
Cable & OHL Decommissioning	1.1	1.7	0.3	0.5	2.5	
Substation Decommissioning	0.0	0.7	2.8	3.9	8.3	
Circuit Breaker Refurbishments	1.3	2.4	2.1	2.2	2.1	
Asbestos Removal	5.0	5.0	5.0	5.0	4.5	
Sub Total NGET	**12.7**	**15.1**	**15.4**	**16.8**	**22.7**	**82.7**
NGG						
Compressor Decommissioning	0.2	1.8				**2.1**
Quasi Capex transferred to Capex	**12.9**	**16.9**	**15.4**	**16.8**	**22.7**	**84.8**

45 Ofgem have clarified that the individual components of the proposed efficiency are:

(a) £9.9m in respect of overhead line (OHL) tower foundations and steelwork; and

(b) £3.9m in respect of substation decommissioning.

46 We believe that these adjustments are inappropriate given that:

(a) For OHL steelwork and foundation repairs

(i) KEMA accept the need case for repairs and recommended that at least the level of expenditure as outlined in the FBPQ be adhered to.

(ii) Recent National Grid pre-sanction engineering work has identified an increased volume of repairs, beyond that represented in our own FBPQ submission.

(iii) In so far as KEMA has looked into costs, its analysis has been directed at our likely increased expenditure above our FBPQ forecast. In the context of this work, KEMA expressed concerns that that our steelwork costs are 1.5 times the cost of international utilities. We reject this assertion.

(b) For Substation Decommissioning in the majority of occasion's replacement of a substation and subsequent decommissioning of the existing substation is the only efficient and achievable option.

47 In summary we believe that these issues have not been properly addressed or concluded upon within this part of the review and we would welcome as part of due process the opportunity to discuss it with both Ofgem and/or KEMA (despite Ofgem's resistance to a three way close out meeting) to progress the development of an allowance that represents (as a minimum) our FBPQ submission.

Tower foundations and steelwork repairs expenditure

48 Our FBPQ submission included £26.5m for the repair of OHL tower steelwork and foundations.

49 Ofgem's adjustment to our submission is without substance since KEMA in their assessment on behalf of Ofgem accept the need case for these repairs and as stated on page 63 of their report

*"KEMA recommends that **this item of expenditure as outlined in the FBPQ (i.e. £5.3m pa) should be adhered to** until NGET has provided a detailed explanation of how and when these additional costs were identified"*

50 KEMA's remark was made in the context of a presentation we made on 4th May 2006 which highlighted that since the FBPQ submission £16.5m of OHL steelwork and foundation work for 2006/07 has been sanctioned and a further £12.7m is required for 2007/08. This increase results from detailed pre sanction engineering work prior to scheme sanction identifying a higher volume of repairs (in particular on buoyant tower foundations). This level of cost is significantly higher than the annual allowance of £5.3m pa in our FBPQ and we forecast this trend to continue beyond 2007/08 with costs projected to be at the top of the range.

51 It is a fact that KEMA were therefore effectively stating that the £26.5m in our FBPQ should be a minimum allowance and that the allowance should not be increased above £26.5m until NGET have provided a more detailed explanation of the drivers. Ofgem, however, appears to have misinterpreted the KEMA report and have instead presented a proposed efficiency adjustment that remunerates us at a level below £26.5m.

52 We have attempted to piece together how Ofgem can have interpreted the KEMA report as a basis for an efficiency adjustment and can see only one hook in the KEMA report with any negative connotations:

"KEMA experts indicate the costs of steelwork as suggested by NGET are approximately 1.5 times the cost of international utilities and there should be little reason for this."

53 It is totally unclear how KEMA has carried out this evaluation as they do not provide any detail of the unit cost comparator in their assessment, however, what is clear from the report is that KEMA's own calculations of the proportion of total steelwork repair costs per tower in our FBPQ submission are incorrect

54 KEMA include in their assessment an assumption regarding the ratio of tower steelwork replacement to foundation repairs by suggesting that approx £7m of the £26.5m of the total expenditure is for foundation work and £19.5m (74%) is for steelwork repairs. This assumption is incorrect and KEMA have vastly overestimated the steelwork element which is in fact around 15% of the total expenditure with tower foundation repairs actually making up the bulk of the spend (85%). This was explained to KEMA in our 4th May presentation.

55 This misconception may explain why KEMA incorrectly asserted that our steelwork costs are too high and given that this was the only negative

connotation in their report in relation to this issue may also be the flawed basis of the currently unexplained Ofgem efficiency adjustment.

56 If indeed this is the case then on average we estimate that out of the 300 circuit km of full refurbishment approx 160 L6 towers and 160 L2 towers will require steelwork repairs (on average 200kg) and re-muffing (£5k per L6 and £4k per L2) repairs of which approx 30 to 40 will require substantial additional foundation repairs (at approx £85k per tower). Hence we forecast that approx £4.6m per annum will be spent on foundation repairs and only £700k per annum on steelwork repairs. Thus even if KEMA's assertions in relation to steel costs were true then the efficiency adjustment would only be £1.2m.

57 We do not, however, concur with KEMA's views on steel costs and in support of the costs used in our FBPQ submission for steelwork repairs we can assure Ofgem that they are taken from our OHL framework agreements which consist of competitively tendered rates for materials and activities which are consistent with the rates used in our capital plan (nor have these rates been deemed inefficient in relation to Ofgem's assessment of our historical capex).

58 Our suppliers source raw materials including steelwork on the global market and therefore our steel costs will be comparable to costs experienced by other international utilities with the only potential difference being that our unit costs may additionally include fabrication and erection of the structures on site.

Substation decommissioning

59 KEMA's view of our substation replacement strategy appears to be that replacement should be carried out selectively and in-situ, rather than by replacement of the whole substation.

60 For the avoidance of doubt, we do indeed consider the option of replacing individual items of switchgear, but in the majority of cases, it is not feasible or efficient to carry out anything other than a whole substation replacement thus leading to decommissioning expenditure being incurred.

61 As for overhead lines, replacing individual switchgear items is considered at each site, but the reality is that there are only very limited occasions where this is an efficient, or even feasible, option because:

(a) the substation infrastructure is also in poor condition, having been constructed at the same time as when the switchgear was installed, such that replacement using existing infrastructure would result in early write off of the new circuit breakers in a short period of time;

(b) the substation infrastructure is insufficient to meet the current requirements;

(c) replacement in-situ within an existing substation is often unachievable from either a health and safety or security of supply perspective.

62 For these reasons, in the majority of cases, replacement of a substation is the only efficient and achievable option and KEMA have offered no evidence to suggest otherwise. Thus we believe the forecast as proposed in our FBPQ should be allowed in full.

Shared services

63 Ofgem's Updated Proposals reflect an overall £7.2m efficiency adjustment applied to our FBPQ cost profile. This is a fundamental change in approach from their Initial Proposals where a similar level of efficiency adjustment was applied but to our normalised 2004/05 cost base.

64 Our response to Ofgem's Initial Proposals accepted this as an adjustment to our normalised 2004/05 cost base given that it seemed reasonable considering the savings likely to arise from our transition to a UK Shared Services Organisation would all take place after 2004/05 and therefore it was a way for Ofgem to factor in an appropriate level of savings.

65 Deduction of such an efficiency adjustment from our FBPQ profile that already fully reflects the savings from UK shared services is simply double counting. **This is a new error that has been introduced to the calculation of our allowances by Ofgem as part of their Updated Proposals and hence our allowances should be increased by £7.2m.**

Corporate centre

66 Deloitte, acting for Ofgem on the Transmission Price Control Review assessed the activities and costs of our corporate centre functions and we noted their high level conclusions in our response to the Initial Proposals:

(a) "…the Corporate Centre has not shown any evidence of major inefficiencies"; and

(b) benchmarking versus DNO Corporate Centre costs "…indicated that overall costs are in the top quartile…", i.e. the most efficient quartile.

67 Our response to the Initial Proposals pointed out that Ofgem's proposed reductions in this area appeared entirely at odds with the findings of Deloitte and in addition that Ofgem's proposed cost reductions included specific instances where:

(a) costs are unavoidable such as our annual audit fees and the costs for production of our annual report which are both statutory requirements;

(b) inconsistency arises in relation to Ofgem's proposed reductions, other costs that stand unchanged and Ofgem's approach to financability e.g. striking out the costs of our investor relations function against a backdrop of a required equity injection; and

68 Regrettably, Ofgem have not materially acted on these issues and we sense that our corporate centre activities are being viewed as a "soft target" for

efficiency adjustments. We still see no evidence of similar arbitrary reductions ever having been proposed in the DNO reviews.

69 Thus we do not believe that the Updated Proposals are justified by any substance and therefore the £21m gap to our submission should be re-considered and significantly reduced within Final Proposals.

Electricity engineering

70 Ofgem's Updated Proposals continue to feature significant levels of downward adjustment to our electricity engineering opex allowances.

71 The total efficiency based gap between Ofgem and National Grid amounts to £27.7m and is summarised in the following table:

Ofgem Electricity Engineering Efficiency Adjustments	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total £m
Inspection and Maintenance Cost	1.7	2.7	3.7	4.6	5.6	**18.2**
Protection and Control PDSA's	0.0	0.0	0.0	1.0	1.0	**2.0**
OHL Component Replacment	0.5	0.5	0.5	0.5	0.5	**2.5**
Construction Revenue Schemes	1.0	1.0	1.0	1.0	1.0	**5.0**
Total	**3.2**	**4.2**	**5.2**	**7.1**	**8.1**	**27.7**

72 This section now addresses each item in turn.

Inspections and maintenance costs

73 KEMA conclude from their modelling that "against a background of an increasing asset base and ageing network, some increases in NGET's Engineering opex is to be expected". However they go on to say that "conversely, the replacement of assets with newer, less maintenance intensive design should alleviate these upward cost drivers to certain extent".

74 For this reason KEMA suggest there is scope for efficiencies in NGET's Engineering opex for the period 2005/06 onwards of 0.5% - 1.5% pa. They identify four areas in particular and these are reproduced in the table below. Note that these numbers do not tally with those used by Ofgem, however, we have not been provided with a set of numbers that reconciles to work from.

KEMA Proposed Efficiencies (Central View)	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m
Transformers	0.75	0.75	0.75	0.75	0.75
Site Care	0.70	1.05	1.40	1.75	2.10
Switchgear	0.30	0.45	0.60	0.75	0.90
PDSAs	0.20	0.30	0.40	0.50	0.60
Combined Total	**1.95**	**2.55**	**3.15**	**3.75**	**4.35**

75 In KEMA's response to our question (NG1029) they assert that a number of the issues that we raised in our response to the Initial Proposals in relation to the inclusion of inappropriate costs in their benchmarking analysis have effectively already been dealt with in their recommendation that our

allowances should fall in the higher part of the their benchmark range. Ofgem effectively seek to remunerate us in the low part of that range.

76 In addition, we see that KEMA's response only addressed a small sub-set of the issues that we raised in our response to Initial Proposals as KEMA have not taken into account the issues highlighted in relation to:

(a) incorrect assumptions with regard to circuit breaker asset volumes;

(b) oversimplification of engineering opex parameters for all asset classes; and

(c) flawed benchmarking of transformer maintenance costs;

77 These are now discussed in more detail below.

Circuit breaker volumes

78 KEMA have proposed an opex efficiency adjustment on the basis of the numbers of ABCBs (Air Blast Circuit Breakers) that will be removed from the system. **This efficiency adjustment does not take into account the impact of Ofgem's own capex recommendations which suggested that ABCB removal should be deferred further**. Unless Ofgem's capex proposals on this issue are to be changed a much lower volume of ABCBs should be assumed to be removed from the system, thus Ofgem need to amend this effect in order to make their proposals consistent.

79 The KEMA opex benchmarking correctly identified that our FBPQ submission would remove 296 ABCBs from the system. We believe that Ofgem capex proposals will reduce this by approximately a third. Consequently, to make the OFGEM proposals whole, the KEMA opex efficiency adjustment should be reduced by a similar margin. Please note that for the avoidance of doubt, we do not accept that the capex for ABCB replacement should be reduced.

80 As we explained to KEMA at the FBPQ workshop presentations, we modelled the impact of replacing ABCBs with SF6 breakers in our FBPQ submission and KEMA are factually incorrect when they say we have not. We believe that their calculations fail to take into account the increased costs arising from the numbers of new SF6 breakers and associated bay equipment that will be added to the system.

81 In order to correct this Ofgem will need to reverse out their proposed efficiency adjustment.

Engineering opex parameters

82 Our opex FBPQ submission is based on a detailed bottom up analysis. By comparison, the crude oversimplification arising from KEMA's approach raises serious questions as to the efficacy of any efficiency adjustments proposed for any asset class. KEMA has not provided any justification for the engineering opex parameters they used to derive their opex benchmarks (see

page 102 of the KEMA report) and their opex parameters specifically do not take the following items into account:

(a) NGET's Network is significantly older than most comparators, and consists of old technologies that will only be changed slowly through asset replacement. Maintenance costs are technology dependant. KEMA's engineering opex parameters seem to be based on modern technologies (e.g. the cable parameter is based on XLPE rather than oil filled cable). Any benchmarking methodology which does not take into account the age and technology of a network is simply flawed.

(b) It is inappropriate to use only one percentage for all different types of circuit breaker. As KEMA themselves acknowledge it takes approximately three times as much resources to maintain an ABCB as an SF6 breaker. Any benchmarking methodology that does not reflect such issues is further flawed.

(c) The percentages used are unsupported by any evidence or external references and we can do nothing but reject such analysis in the face of the sophistication of our own work.

Transformer maintenance costs

83 The KEMA results are significantly at odds with the well established ITOMS international benchmarking in which we participate where the results show us to be a strong performer. We believe that the ITOMS process is a far more robust basis for benchmarking than that carried out by KEMA and consider Ofgem's decision simply to ignore ITOMS as selective and arbitrary.

84 Taken together, the clear limitations of KEMA's simplistic Engineering opex benchmarking and the contradictory output from this analysis relative to the more established ITOMS benchmarking, we believe this should lead Ofgem to conclude that the efficiencies proposed by KEMA are not sufficiently robust to inform the setting of our allowances. **The proposed efficiencies in this area should thus be removed.**

Protection and control PDSAs

85 Ofgem propose an efficiency adjustment of £2m over the last two years of the FBPQ period based on KEMA's assessment of our operating expenditure. KEMA conclude that "NGET does not appear to be maximising the economies of scale with respect to PDSAs procurement as the number of bays increases".

86 We feel that KEMA in their conclusions have not taken into account that PDSA costs are driven by increasing complexity as well as increasing volumes in our FBPQ submission.

87 PDSAs were introduced during the last review period and current agreements are now becoming much more comprehensive. In particular PDSAs now include a full obsolescence management clause whereby, for the agreed asset life, the manufacturer commits to keeping the system repairable and

they are contractually obliged to retain their design expertise. This level of support was not available in earlier PDSAs.

88 This and other areas of PDSAs will continue to be developed with manufacturers to ensure we extract the full benefits of future agreements including:

(a) managing obsolescence not previously included in less comprehensive PDSAs;

(b) better positioned to realise the full asset lives; and

(c) and to enable us to develop long-term strategies for protection and control assets, as without PDSAs we rely solely on availability of spares.

89 Our FBPQ submission does show an increase in PDSA costs into the future, as the number of protection bays subject to agreements increases. The nature of the services included in the individual agreements will be considerably enhanced, however, we have set ourselves a significant challenge in our FBPQ submission by forecasting **reducing** unit costs - as illustrated in Table 25 of KEMA assessment. Therefore, any economies of scale savings will be largely offset by the increasing cost pressure on unit costs as agreements become more complex.

90 In addition it should also be noted by Ofgem that by ensuring we realise the full asset lives significant elements of future capex can be avoided or delayed. The additional costs associated with early asset replacement would far outweigh any increase in PDSAs cost.

91 In summary the additional complexity drives the level of PDSA unit costs and as current agreements are due to expire in 2009/10 we expect pressure on unit prices to increase. This will largely offset any economies of scale savings as the number of bays covered increase therefore we believe that it is entirely inappropriate to apply an efficiency adjustment in this area over and above the significant challenge we have set ourselves to reduce unit costs in the FBPQ period.

OHL component replacement

92 The NGET FBPQ sets out plans for increased allocations to opex of expenditure of £1.1m p.a. on overhead line component replacement to address component defects that will not otherwise be addressed through capital asset replacement plans.

93 KEMA recognise the need for increased component replacement given the condition based evidence of deteriorating fittings. However KEMA observe that they have not seen sufficient evidence to substantiate our forecast cost for this work and consequently suggest a reduction of up to £0.5m p.a. may be appropriate. We reject totally this recommendation for two reasons:

(a) we do not consider lack of depth in **their** review to be an appropriate basis to assert that sufficient evidence to support our case does not exist; and

(b) the recommendation demonstrates that KEMA have fundamentally misunderstood that the projected increase in opex represents primarily a swing between wholesale component replacement that can be capitalised under our accounting rules to more selective and piecemeal component replacement that must be treated as opex under our accounting rules.

94 A significant element of the sum in question relates to OHL linesman formerly working on capital works who in future will be working on opex maintenance. KEMA's recommendation therefore implicitly requires us to reduce linesman headcount and we do not believe that any logical basis is set out for this in their findings.

95 During the HBPQ period NGET's resource focus has been upon remedial repairs of a range of Overhead Line generic defects which posed risk to public and system performance (defective insulator replacements, defective suspension insulator dowel pin replacements, replacement of spacers causing conductor damage) under schemes driven by the issue of Engineering Modification Instructions (EMI). During this period repair of other component defects was carried out only on a prioritised reactive basis. The EMI work is now drawing to completion.

96 We reject totally the flawed efficiency adjustment proposed in relation to OHL component replacement. Our FBPQ was constructed on a sound basis in order optimise asset integrity and maintain:

(a) public safety;

(b) system security; and

(c) safe tower access;

Construction revenue schemes

97 The proposed £1m pa reduction in our opex allowances that Ofgem have applied to our construction revenue scheme costs results in unacceptable levels of opex allowance for the entire TPCR period, a problem specifically evidenced by looking at the year 2008/09 as an example.

98 The allowances as they stand for 2008/09 amount to only £0.1m which given the level of activity identified in our HBPQ and FBPQ submissions is clearly inadequate.

99 Our FBPQ submission sets out the opex requirements for Other Construction Revenue Schemes as detailed below:

(a) Included is £250k of transport costs for the replacement of one failed transformer pa. NGET can expect to experience 2-3 transformer

failures pa based on recent historical transformer failure rates .This expenditure is unavoidable. The KEMA opex report supports this as it states that opex provision has been made for transportation of a strategic spare following one failure as the transport costs for transformers sourced direct from suppliers would be classed as capex.

(b) £850k has been included for 'as-yet-unidentified' schemes. This figure is an informed average, based on historical expenditure. We accept that the level of expenditure for these schemes is difficult to forecast however the lowest year of expenditure experienced at £0.3m in 2004/05 is still three times Ofgem's proposal for 2008/09. This cost has been as high as £1.1m in 2003/04.

100 Since our FBPQ submission we have identified a number of schemes in 2005/06 principally with respect to 'System Driven Change' including £409k following High Marnham Power Station closure and £266k to facilitate temporary diversions following the failure of the Dartford Tunnel cables.

101 Clearly Ofgem's proposals will not adequately fund such unavoidable activities and we believe that this £5.0m adjustment needs to be removed simply in order to make the Ofgem proposals credible and robust to the typical engineering issues and costs that arise on our system.

Gas engineering opex

102 We highlighted in our response to the Initial Proposals that the majority of the proposed engineering efficiencies in relation to NGG result from TPA's proposal to close six compressor stations after 2007/08. We still do not feel that the case for the closure of the compressor sites has been made and it is a quite extraordinary assumption to assume at this time of significant uncertainty in future gas flows.

103 As we have set out separately, the planning scenarios identified by TPA do not reflect the range of operating requirements, and only represent "snapshot scenarios" and are limited in their ability to reflect running hours required at each site. These scenarios are based on a small number of fixed views of potential supply, and do not reflect the full range of potential flows from these supply points. Furthermore, the scenarios assume idealised steady state conditions and do not reflect the full range of operating conditions such as planned or unplanned machine outages, management of linepack and managing changing supply profiles.

104 However, if Ofgem do wish to proceed with this narrow range of supply scenarios we believe it would be essential that it was explicitly stated by Ofgem that any opex costs incurred at the sites assumed to be closed at particular points of time during the next price control would be 'logged-up' and recovered (including financing costs) in the following price control period (2012/13-2016/17). This would ensure that no economic loss would be made by National Grid in the event that this Ofgem imposed planning assumption proves to be incorrect.

105 Setting aside the proposed efficiencies in respect of compressor station closure it is particularly regrettable that Ofgem propose to reduce Pipeline and AGI maintenance in respect of marker posts expenditure and corrosion control and painting expenditure given the compelling need-case for this maintenance.

Information systems

106 National Grid would welcome an opportunity to review a breakdown of the IS efficiencies that sit behind the Ofgem Updated Proposals as, in the absence of any detailed information, we can only respond to the points raised in the benchmarking report produced by Compass for Ofgem (26 May 2006).

107 In general, National Grid does not believe that Compass' extrapolation approach to IS cost forecasting is legitimate and we believe our own carefully constructed IS plans are far more likely to be accurate. Over the three efficiency areas applied under Ofgem's Initial Proposals our previous response is summarised below:

(a) On **Infrastructure Services**, which are largely outsourced, any adjustment is out of keeping with Compass' general finding that this contract is highly competitive. As with any contract of this nature, it is the whole deal which is important and it is not valid to conclude inefficiencies on the basis of a relatively small number of measures where costs are higher than the reference group.

(b) On **System Integrator (SI) Rates** our SI opex in the base year (2004/05) was only £1.6m, none of which was allocated to NGET. Our SI services are also supplied under competitively tendered framework agreements. Therefore, we believe any NGET adjustment to be inappropriate and the overall adjustment likely to be heavily overstated.

(c) On **Use of Contractors in Applications Support**, the contractors used primarily support the SO electricity Balancing Mechanism System, critical to market operation. This is an SO system and therefore any TO adjustment is inappropriate.

IV Errors in the Ofgem Updated Proposals

108 This section analyses certain serious flaws inherent in the Ofgem Updated Proposals as they currently stand principally in respect of four issues:

(a) The **mistaken calculation of the upward cost pressures** from an analysis of 2004/05 which has not been normalised to be consistent with the 2005/06-2011/12 data. This has led to a £23.5m understatement in allowances because the costs included for 2004/5 (most notably in respect of Engineering costs) include items which are not comparable to the costs between 2005/6-2011/12.

(b) The **omission of the upward cost profile for Central inputs** within Electricity leading to a £22.2m understatement – this increase in costs is principally a reflection of the change in cost attribution and allocation which has been described in a separate submission to Ofgem.

(c) The **omission of the upward cost profile for Property** leading to a £13.5m understatement – this increase is demonstrably a function of the change in cost allocation across the whole of Transmission which was proven to be neutral to the total cost base. Again a separate submission has already been made to Ofgem on this issue.

(d) The **failure to fully recognise certain of the cash costs** included within our FBPQ submission leading to a £12.6m understatement.

Mistaken calculation of the upward cost profile

109 Following receipt of Ofgem's Updated Proposals calculations on October 12 it can be clearly identified that Ofgem have failed to properly calculate the upward cost profile that should have been inserted into the 'Upward cost drivers' row of the allowances calculation.

110 This error has arisen because the calculations used to derive the upward cost profile have used 'non-normalised' data for 2004/05. This means that the 2004/05 costs include atypical (i.e. non-recurring items) that inflate the base year costs relative to the 2005/06 – 2011/12 costs which do not include such atypical items.

111 Since the appropriate normalisation adjustments have been agreed within the shared calculation of the Recurring Cash Controllable Costs (RCCC) it can easily be identified how the costs presented in OP4027 for 2004/05 should be amended. These calculations are set out in the following table:

Electricity TO

Operating Unit	2004/05 per OP4027	P&L Normalisation adjustments			Corrected Normalised 2004/05 accounting costs	Total value of 2004/5 adjustment	Impact on 2007/8-11/12 Allowances
		Investment for efficiency	Severance				
Engineering Services	72.1	(3.0)			69.1	3.0	**15.0**
Network Strategy	19.1		(0.1)		19.0	0.1	**0.5**
Total ETO						3.1	**15.5**

Gas TO

Operating Unit	2004/05 per OP4027	P&L Normalisation adjustments			Corrected Normalised 2004/05 accounting costs	Total value of 2004/5 adjustment	Impact on 2007/8-11/12 Allowances
		Merger / restructuring - added back to ECOC	Merger / restructuring - Ofgem normalisation	Network Sales			
Engineering Services	29.8	1.3	-2.2	-0.4	28.5	1.3	**6.5**
Commercial	1.8			-0.3	1.5	0.3	**1.5**
Total GTO						1.6	**8.0**

Total ETO + GTO	**23.5**

112 Thus we believe properly normalising the 2004/05 data within the calculation of the upward cost profile would lead to a £23.5m increase in the proposed allowance.

The omission of the upward costs profile for central inputs

113 The term “Central Inputs” refers to a central accounting adjustment entity forming part of our electricity TO opex numbers in our submissions to Ofgem where certain non-operating unit specific transactions are recorded.

114 One of the important adjustments that historically we have made in this entity (and specifically in 2004/5) is the onward reallocation of an appropriate share of certain costs to non-electricity TO activities (the electricity SO, Interconnectors and other unlicensed activities) where these have in the first instance been captured as part of the electricity TO.

115 As part of the adoption of the Ofgem approved new “Unified Cost Allocation Methodology” the basis of cost allocation changed. This change included a movement to more direct attribution of costs to non-electricity TO activities leaving only a much smaller proportion of costs requiring such onward reallocation from the electricity TO.

116 The significant step change in the level of onward re-allocation from the electricity TO required under the Unified Cost Allocation Methodology is clearly visible in Part 1 of the following table where re-allocations in 2004/05 of £7.3m drop to average only £2.8m for the period of the Transmission Price Control Review.

Central Input Allocations	2004/05 £m		2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total 2007/08 to 2011/12 £m
Part 1 - National Grid Submission								
(In Line With Ofgem Allocation Methodology)								
- Interconnectors	(0.7)		(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	
- Business Services	(6.5)		(2.7)	(2.8)	(2.6)	(2.7)	(2.6)	
Total	**(7.3)**		**(2.9)**	**(2.9)**	**(2.8)**	**(2.8)**	**(2.7)**	**(14.1)**
Part 2 - Ofgem Updated Proposals								
(Flat Extrapolation of 2004/05)								
- Interconnectors	(0.7)		(0.7)	(0.7)	(0.7)	(0.7)	(0.7)	
- Business Services	(6.5)		(6.5)	(6.5)	(6.5)	(6.5)	(6.5)	
Total	**(7.3)**		**(7.3)**	**(7.3)**	**(7.3)**	**(7.3)**	**(7.3)**	**(36.5)**
Resultant Under-Funding			**4.4**	**4.4**	**4.5**	**4.5**	**4.6**	**22.4**

117 The Ofgem Updated Proposals, however, base the level of re-allocation on a flat extrapolation of the levels experienced in 2004/05 as can be seen in Part 2 of the table with the following consequences:

(a) too great a deduction is made from our allowances than is warranted; and

(b) Ofgem effectively make a deduction in relation to costs that are not in the baseline numbers for the electricity TO in the first place (these costs now being subject to more direct attribution non-electricity TO activities).

118 Ofgem will need to increase our opex allowances by £22.4m in order to make their Final Proposals arithmetically accurate with levels of onward re-allocation of costs from the electricity TO linked to the level of costs being incurred in the baseline numbers.

The omission of the upward cost profile for property costs

119 There are certain similarities between the omission of the upward cost profile for property costs to the issue set out above associated with the allocation out of central inputs.

120 In each case Ofgem are extrapolating an unrepresentative number from 2004/05 which is:

(a) at odds with the Ofgem approved Unified Cost Allocation Methodology; and

(b) unrepresentative of our future costs based on the approved Unified Cost Allocation Methodology as presented in our submissions to Ofgem.

121 The following table sets out:

(a) in Part 1 the property costs allocated to our ETO and GTO activities under the Unified Cost Allocation Methodology; and

(b) in Part 2 Ofgem's flat extrapolation of 2004/05

122 The resultant £13.6m under-funding is clearly evident.

Property Allocations	2004/05 £m		2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total 2007/08 to 2011/12 £m
Part 1 - National Grid Submission								
(In Line With Ofgem Allocation Methodology)								
- ETO	8.2		11.1	10.9	10.9	11.0	11.0	
- GTO	2.7		2.7	2.7	2.6	2.6	2.6	
Total	**10.9**		**13.8**	**13.6**	**13.6**	**13.6**	**13.7**	**68.2**
Part 2 - Ofgem Updated Proposals								
(Flat Extrapolation of 2004/05)								
- Interconnectors	8.2		8.2	8.2	8.2	8.2	8.2	
- Business Services	2.7		2.7	2.7	2.7	2.7	2.7	
Total	**10.9**		**10.9**	**10.9**	**10.9**	**10.9**	**10.9**	**54.6**
Resultant Under-Funding			**2.8**	**2.6**	**2.6**	**2.7**	**2.8**	**13.6**

123 The reason for the increase in property costs allocated to our ETO and GTO activities from £10.9m in 2004/05 (under the old methodology) to an average of £13.6m for the Transmission Price Control Review period was the adoption of the newly approved allocation methodology.

124 During discussions in the cost allocation workstream prior to Ofgem's approval of the new methodology it was made entirely clear that the consequences of their approval would include:

(a) increased property cost allocations to ETO and GTO activities; offset by

(b) countervailing reductions in other allocated costs leaving our TO activities broadly neutral.

125 In relation to all other allocated costs the Ofgem Updated Proposals are based on the Unified Cost Allocation Methodology. Ofgem's avoidance of the approved methodology specifically for property costs effectively means that all of the benefits of reduced allocations to our TO activities have been factored in to their proposals without the countervailing increase in property allocations. **We believe that Ofgem's approach to property allocations is selective and arbitrary and the resultant £13.6m under-funding needs to be addressed in their Final Proposals.**

Failure to recognise certain cash costs

126 Appendix 3 of Ofgem's Updated Proposals set out a summary of respondent's views to the Ofgem Initial Proposals. Paragraph 1.3 states that:

"NGET … more generally believes allowances should be set on the basis of accounting costs and not Ofgem's view of cash costs".

127 This statement entirely fails to represent National Grid's views and is particularly surprising given that Ofgem were in possession of the

supplementary submission addressing Economic Cash Operating Costs ("ECOC") and normalisation adjustments where we illustrated how in fact it is Ofgem's proposals that fail to recognise cash costs properly with significant under-funding as the result.

128 A separate supplementary submission set out how Ofgem have allowed in their Updated Proposals for:

(a) the difference between accounting and cash costs; and

(b) "normalisation" adjustments.

129 Again there are certain similarities to the two previous arguments that we have set out centred around Ofgem's flat extrapolation of 2004/05 values that fail to represent the numbers that will be experienced in the Transmission Price Control Review period and in this case specifically:

(a) fail to remunerate National Grid for cash costs that rise above the profile of accounting costs; and

(b) deduct "normalisation" adjustments extrapolated from 2004/05 from the baseline of our submission that does not, in all instances, include such values in the first place.

130 The following table summarises these two effects and highlights the resultant under-funding. **Ofgem will need to address this problem and increase our opex allowances by £12.6m to compensate**. It is important also that Ofgem note that this adjustment is merely a correction to the arithmetic of their normalisation work and that National Grid still differ with Ofgem over the merit of certain normalisation adjustments which we will cover in detail in Sections V and VI of this document.

ECOC & Normalisation Adjustments	**National Grid £m**	**Ofgem £m**	**Gap £m**
Difference between ECOC and Accounting Costs	6.2	120.9	**(114.7)**
Normalisation Adjustments	(17.5)	(144.8)	**127.3**
Resultant Under-Funding	**(11.3)**	**(23.9)**	**12.6**

V Areas of difference with Ofgem's policy driven adjustments

131 This section sets out the areas of difference that persist between Ofgem and National Grid in relation to costs disallowed by Ofgem seemingly as a matter of policy in respect of:

(a) employee share scheme costs;

(b) costs to achieve; and

(c) related party margins

Employee share scheme costs

132 Our response to Ofgem's Initial Proposals set out how Ofgem had made "normalisation" adjustments to our cost base in relation to costs associated with the application of FRS20 "Share Based Payments". The impact on our opex allowance of a "normalisation" adjustment is multiplied by a factor of five as it results in under-funding in every year of the price control period. This issue remains unresolved with Ofgem and the total impact of this adjustment is set out in the table below:

Share Based Payments	**Total £m**
Ofgem "Normalisation" Adjustments	
- NGET	3.3
- NGG	0.6
Single Year Impact	**3.9**
Total PCR Period Impact	**19.5**

133 We continue to maintain that this is not an appropriate adjustment for two reasons:

(a) The costs are in fact cash rather than non-cash because the requirements of the Inland Revenue dictate that inter-company balances are settled in cash, These charges were made by National Grid Group (the issuer of shares) to operating companies including NGET and NGG and were therefore settled in cash.

(b) Extending the option to staff to join employee "sharesave" schemes reflects best remuneration practice and is part of our overall efficient remuneration package.

134 Deloitte, acting for Ofgem on the Transmission Price Control Review recognised in their report that Ofgem need to give consideration to how the

cost to National Grid of such employee share schemes should be remunerated and proposed that Ofgem consider either:

(a) their re-inclusion in the 2004/05 base year i.e. the reversal of this overall £19.5m adjustment; or

(b) the setting up of an alternative form of remuneration.

135 As far as we are aware no work has been undertaken by Ofgem to evaluate an alternative form of remuneration under option (b) and in our view a new mechanism would introduce unnecessary complexity to our regulation therefore **National Grid propose option (a) the simple reversal of the £19.5m adjustment made by Ofgem.**

136 This issue is independent from the issues raised in Section IV of this document in relation to normalisation adjustments because:

(a) this issue is related to whether or not a normalisation adjustment should have been made by Ofgem; whereas

(b) Section IV of this document simply covered the adjustments required in order to reflect Ofgem's proposed normalisation adjustments correctly within our allowances irrespective of their validity.

Costs to achieve

137 Our HBPQ submission and subsequent responses to Ofgem's March consultation document and Initial Proposals set out very clearly our historical performance versus regulatory allowances and identified atypical "costs to achieve" efficiency savings as being one of the prime causes of our aggregate under-performance against regulatory opex allowances.

138 Regrettably we have not had sufficient engagement from Ofgem on this issue and the Updated Proposals continue to perpetuate the fallacy that future efficiency savings can be achieved **"free of charge"** i.e. that in all instances change programmes can self finance over the period of a Transmission Price Control Review despite Ofgem having already deducted the potential savings required to generate a positive NPV on any investment from our forward opex allowances.

139 Costs to achieve major change programmes are typically opex investments and include such costs as:

(a) staff severance;

(b) re-organisation costs;

(c) training costs;

(d) outsource and negotiation costs; and

(e) IS investment where although such costs may be accounting opex, Ofgem's proposals seek to remunerate IS investment for NGET and NGG TO activities as regulatory opex (non-operational capex).

140 Our FBPQ submission for the period 2007/08 to 2011/12 clearly set out that we would be incurring costs to achieve the transition to a UK Shared Services organisation and indeed Ofgem, based on recommendations from Deloitte, have proposed future efficiency savings in this area. **Ofgem, however, have explicitly excluded these costs from our opex allowance thus rendering their Updated Proposals internally inconsistent with a further £5.7m under-funding to be addressed.**

Related party margins

141 Our response to Ofgem's Initial Proposals set out how Ofgem had made "normalisation" adjustments to the NGET cost base in relation to related party margins. The impact on our opex allowance of a "normalisation" adjustment is multiplied by a factor of five as it results in under-funding in every year of the price control period. This issue remains unresolved with Ofgem and the total impact of this adjustment is £4m (£3.5m in respect of NGET and £0.5m NGGT).

142 Our response to Ofgem's Initial Proposals set out that we did not believe such an adjustment to be sound given that the associated services are:

(a) negotiated at arms length;

(b) provided on a commercial basis; and

(c) priced competitively in relation to the external market.

143 We understand that Ofgem are seeking to apply a policy of disallowing related party margins in instances where less than 75% of related party business is with other entities. We do not believe that an arbitrary 75% limit is sufficient enough basis to determine an appropriate treatment and given that the risk associated with service provision sits with the related party **we believe that Ofgem should reverse this £4m adjustment and treat these services as if they had been provided by any other external entity.**

144 As with Shared Based Payments, this issue is independent from the issues raised in Section III of this document in relation to normalisation adjustments because:

(a) this issue is related to whether or not a normalisation adjustment should have been made by Ofgem; whereas

(b) Section IV of this document simply covered the adjustments required in order to reflect Ofgem's proposed normalisation adjustments correctly within our allowances irrespective of their validity.

VI Further outstanding factors relating to opex

145 We recognise that not all of the work intended to be completed in the TPCR for opex had been completed at the point of preparing the Updated Proposals. Thus we understood that the following to be explicitly 'work in progress':

(a) Operational telephony – because Mott McDonald were still completing an efficiency assessment for Ofgem.

(b) CNI Security – because there was considerable uncertainty over the scope and costs of the proposed security enhancements.

(c) Quarry and Loss of development – because further workshops were scheduled to consider the status of current claims.

(d) Excluded Services - because this work has been scheduled to be completed at the very end of the review.

This section now considers each of these issues in turn:

Operational telephony

146 Ofgem's Updated Proposals reflect a £9.8m (10%) reduction to our submission resulting from their arbitrary extrapolation of our 2004/05 cost levels over the period 2007/08 to 2011/12 rather than adopting our FBPQ cost profile. This curious basis (lacking in transparency) for setting allowances is neither explained in the Updated Proposals nor justified by any finalised report from Mott.

147 Our submission set out a number of clear upward cost drivers for Operational Telephony that Ofgem have chosen not to recognise including:

(a) refreshment of operational telephony system assets;

(b) connection of new customers;

(c) expansions of the electricity transmission network; and

(d) BT 21st Century Networks.

148 It is perfectly reasonable for Ofgem to reserve judgement on the efficiency of our proposals awaiting the outcome of the Mott review, however, we are concerned that they have effectively taken the decision to cut our allowances prior to having any supporting rationale.

149 We note that Ofgem's recent questioning in relation to OpTel seems to be heading down the line of re-opening the original decision taken by National Grid many years ago to contract for these services with the company formerly known as Energis (subsequently acquired by Cable and Wireless). We do not consider this a valid area for review by Ofgem as they appear to be re-

opening an issue that was concluded at the relevant time in previous regulatory reviews.

150 We are confident in our cost projections and look forward to early sight of the Mott McDonald report for review and factual accuracy checking. In the meantime we reject Ofgem's apparent presumption that they will find a £9.8m efficiency reduction and expect our allowances in the Ofgem Final Proposals to reflect our upward cost drivers appropriately.

Critical National Infrastructure security

151 From the detailed workings exchanged between National Grid and Ofgem we can deduce that Updated Proposals as they currently stand feature:

(a) £7.4m of funding for baseline NGET CNI opex requirements; and

(b) no funding in relation to baseline NGG CNI opex requirements.

152 Since our FBPQ submission there has been significant development of our CNI investment programme. The key developments are:

(a) Competitive tender for initial tranche of sites including proof of concept (PoC) sites

(b) Security solution reviewed by the Security Services at PoC sites leading to increased scope of works

(c) PoC sites identified increased actual cost of delivery

(d) In receipt of costing information for a further 2 electrical and 2 gas sites

(e) Overall number of sites firmed up following review with Dti and Security Services

153 Together these developments has led to a revision of our forecast cost of the investment programme and associated ongoing opex. In considering **just the opex considerations** the table below sets out our revised opex forecast.

Revised CNI Security Opex	**2005/06**	**2006/07**	**2007/08**	**2008/09**	**2009/10**	**2010/11**	**2011/12**	**Total**
Electrical Sites								
Number of Designated Sites	2	6	6	6	5			25
Ongoing Opex £m	**0.10**	**0.45**	**0.90**	**1.22**	**1.49**	**1.49**	**1.49**	**7.15**
Gas Sites								
Number of Designated Sites		2	8	8	8	3		29
Ongoing Opex £m		**0.15**	**0.62**	**1.02**	**1.42**	**1.59**	**1.59**	**6.39**
Total Ongoing Opex	**0.10**	**0.60**	**1.51**	**2.24**	**2.91**	**3.08**	**3.08**	**13.53**

154 The revision has led to a reduction in the level of opex for both electricity and gas sites as reported in our FBPQ submission.

155 We are currently in discussion with Ofgem to seek agreement that in principle the efficient level of ongoing opex costs incurred in operating and maintaining the enhanced CNI Security arrangements at each of the designated sites will be fully remunerated.

Quarry & loss of development claims

156 Quarry and loss of development claims arise mainly under the terms of legacy deeds entered into many years ago by predecessor organisations in order to facilitate pipeline construction on third party land.

157 Under the terms of these deeds, land owners and/or land users are entitled to seek compensation for mineral extraction or development restrictions imposed because of the presence of gas pipelines. In recent years, National Grid has experienced claims of increasing volume, value and complexity.

158 Our legal liability for loss of mineral extraction has been previously established and the management and potential settlement of claims of this nature is part of our ordinary course of business.

159 National Grid, however, was recently subject to civil action by a quarry developer who sought additional compensation for their subsequent inability to use a quarry for landfill operations. The claimant was successful in its case against National Grid thus establishing a precedent for our additional liability for landfill. **As Ofgem are aware, National Grid appealed this arbitration ruling and within the last few days have had notice that our appeal has failed**. We are currently reviewing the detailed judgement and intend to discuss the credibility of a further appeal with Ofgem over the coming weeks.

160 Initial discussions with Ofgem appear to be leading towards a distinction being made between mineral and landfill liabilities given the current uncertainty around the outcome of the appeals process in relation to landfill and this seems entirely reasonable. We therefore propose that:

(a) baseline remuneration be provided for mineral related claims; and

(b) subject to Ofgem undertaking in their Final Proposals to appropriately review and remunerate our potential landfill liabilities following the outcome of the appeals process that this issue be dropped from the current Transmission Price Control Review.

161 As Ofgem are aware the total £12m accounting cost associated with future quarry and loss of development claims was presented separately in our submission in order to highlight it for a potential new regulatory treatment. This means that for Ofgem to provide us with appropriate baseline remuneration for mineral liabilities a two stage adjustment needs to be performed:

(a) Stage 1 – identifying the potential future cash flows associated with quarry and loss of development claims (as opposed to their accounting costs); and

(b) Stage 2 – isolating those cash flows associated with mineral liability only.

162 The following table sets out our current cash flow forecast for quarry and loss of development claims that was shared with Ofgem following a recent workshop on the subject.

Quarry & Loss of Development Claim Future Cash Flows	2007/08 £m	2008/09 £m	2009/10 £m	2010/11 £m	2011/12 £m	Total £m
Mineral - Known	1.0	0.8	0.8	4.7	2.4	**9.7**
Mineral - Unknown		1.3	1.3	1.3	1.3	**5.2**
Landfill	10.9					**10.9**
Total	**11.9**	**2.1**	**2.1**	**6.0**	**3.7**	**25.8**

163 The table clearly shows that at present we are only forecasting a future landfill cash flow in relation to the specific claim under appeal, however, should we not be successful in the appeals process we fully expect the precedent established to lead to further claims.

164 The future mineral cash flows amount to £14.9m in total; however, there is a £5.2m contingency to cover typical levels of new future claims within this total. **The baseline remuneration we are seeking to agree with Ofgem is a figure in the range of £9.7m for known claims to £14.9m allowing for a typical level of new future claims**.

165 We have discussed with Ofgem whether remuneration for quarry and loss of development claims should be treated as opex or capex. **We further propose that these costs being remunerated as regulatory capex (through separate reporting to Ofgem as quasi-capex)** as this would:

(a) have the benefit of smoothing the impact on generations of customers over time; and

(b) provide a simple mechanism for the treatment of potential future landfill liabilities whereby such costs could be accounted for as quasi-capex and (as with all regulatory capex) be the subject of efficiency review by Ofgem as part of the next Transmission Price Control Review prior to their admittance to the NGG TO RAV.

Excluded services

166 Ofgem effectively had two options for the treatment of excluded services activities in the Transmission Price Control Review. These were to:

(a) set aside the costs of excluded service provision presented in our submissions and model our price controlled income without an adjustment for the associated excluded services income; or

(b) include allowance for the costs of excluded service provision within our opex allowance and offset the associated excluded services income prior to modelling our price controlled income.

167 The costs of excluded services provision were not included in Ofgem Updated Proposals opex allowances therefore it seems likely that Ofgem are pursuing option (a).

168 Paragraph 7.27 of the Updated Proposals states that Ofgem's proposals in this area will not be presented until December.

169 While we have no reason to assume that Ofgem's proposed treatment will be detrimental to National Grid, excluded services remains on our list of issues contributing to the gap until we are in a position to review a hard proposal from Ofgem for how they will be treated.

VII Answers to specific opex related questions

170 This section sets out answers to specific opex related questions posed by Ofgem in their Updated Proposals.

Question 9.6

Do you agree with our view that an Innovation Funding Incentive is appropriate?

171 National Grid continues to encourage the stimulation of investment in the electricity transmission sector. We reiterate our support for the introduction of an Innovation Funding Incentive for electricity transmission.

172 National Grid has continued to deliver an active electricity and gas research and development programme. Management of this programme enables us to inform on appropriate levels of resource requirements, expected benefits and the difficulties and risks in implementing innovative solutions. As such National Grid proposes that any transmission Innovation Finding Incentive scheme should include:

(a) recognition that transmission benefits need to address long, medium and short term issues and are mostly achieved through avoided costs and risk mitigation with only a small element aimed at direct cost savings,

(b) higher than 80% level of recovery, with a flat profile, for R&D expenditure to reflect the types of benefit accrued and also to reflect that our main FBPQ submission does not include any expenditure to recover the other 20%, a level of 100% is proposed,

(c) an overall IFI funding level greater than 0.5% to ensure sufficient funds are available to encourage significant additional innovation above the current level of National Grid's on-going R&D programme, a cap of 1% for the transmission IFI scheme is proposed,

(d) a limit of 30% for the recovery of internal costs,

(e) one common document for the application of the IFI schemes.

173 As referred to previously (IP12.3) National Grid strongly supports measures to incentivise the delivery of environmental benefits, and this is in line with the emphasis on environmental issues within the Government R&D agenda. Environmental drivers form part of the current R&D prioritisation scheme within National Grid and as such, our existing and planned R&D programmes include a limited number of environmental projects. Projects to promote environmental studies beyond a regulatory requirement are however inevitably prioritised below those delivering short term business benefit. An environmental innovation incentive is therefore proposed in addition to the basic transmission IFI scheme. An additional fund to enable environmental related innovation to be addressed would be beneficial not only to the operation of the networks but also deliver indirect benefit to all consumers via understanding and implementing methods to limit global climate change. Our

preference, for administrative efficiency, would be for additional environmental improvements to be funded through the inclusion criteria under a single IFI scheme

174 Based on Ofgem's view that an Innovation Funding Incentive scheme is to be adopted in electricity transmission and the above proposals, National Grid would welcome further participation in the development of the form of the scheme. In particular National Grid would welcome an active role in the development of the Good Practice Guide in conjunction with the ENA.

Question 10.5

Do you agree with our view that an Innovation Funding Incentive is appropriate?

175 National Grid welcomes recognition that there is a strong case for Innovation Funding for gas transmission and that it is therefore appropriate to introduce an Innovation Funding Initiative (IFI).

176 The challenges of the changing gas market will lead to requirements for new knowledge, ways of working and operating the system. In addition there are drivers for change beyond the control of the company, e.g. the introduction of IPPC regulations, Large Combustion Plant Directive and European C-trading scheme. Potential areas for innovation that have been identified for research and development under a gas transmission Innovation Funding Incentive scheme include:

(a) Environmental initiatives, both energy reduction and emissions,

(b) Gas flow and related activities,

(c) Understanding the ageing network,

(d) Optimisation of the network,

(e) The introduction of new technology from basic materials to major assets

(f) Improved asset management

(g) Understanding the long term implications of energy legislation, technology changes and gas flows on the NTS.

177 As referred to in Question 9.6, National Grid proposes that any transmission IFI Scheme should include recognition of the timescales involved in achievement of benefits from short to long-term, full cost recovery including up to 30% of internal costs and a greater level of funding to encourage additional innovation in the transmission sector.

178 Also as referred to in answer to Question 9.6, it is proposed that an additional allowance is made for projects providing environmental benefit. The long term nature of the benefits of environmental research makes the justification of demonstration and deployment of environmental projects problematic under

the current IFI eligibility criteria. For administrative efficiency it is proposed that these projects are funded under a single IFI Scheme.

179 Based on Ofgem's view that an Innovation Funding Incentive scheme is to be adopted in gas transmission and the above proposals, National Grid would welcome further participation in the development of the form of the scheme. In particular National Grid would welcome an active role in the development of the Good Practice Guide in conjunction with the ENA.

Question 11.1

180 Do you agree that licensees should be incentivised to reduce leakage of SF6? Do you agree the incentive should be set for 5 years?

181 In principle, National Grid would be supportive of an incentive mechanism to reduce leakage of SF6. We would also support 5 years as being a sufficiently long time period to reflect long term progress in this area. We have set out below some of the points that would need to be considered in developing such an incentive regime:

(a) We believe any proposed incentive scheme should be measured against a long-term goal (e.g. 5 years) as year-on-year specific reductions are constrained by factors such as system access, resource availability, leak repair solutions, one-off defects, etc.

(b) Any incentive could take a number of forms. A one-off payment at the end of the control period if leakage rates are reduced by a specified amount could be considered. Similarly, an incentive scheme based upon the trading price of CO2 within the EUETS could be considered i.e. the payment relates to the value of the environmental benefit not just the cost of leak repairs.

(c) Any incentive scheme should as a minimum allow the Transmission Licensees to recover their costs both opex and capex associated with reducing emissions

(d) Any incentive scheme needs to recognise that significant SF6 losses can occur as a result of unforeseeable equipment failures and such losses should not be included in the overall leak rate as they are by definition unforeseeable and therefore outside of any management control.

(e) Establishing current leak performance is clearly a prerequisite ahead of agreeing licensee specific leak rates. Any incentive scheme must require all transmission licensees to provide the same level of detail both in terms of SF6 inventory and performance. Similarly, an audit mechanism would need to be agreed along with the treatment of any costs associated with undertaking and complying with audit findings.

(f) The incentive scheme needs to resolve any conflict between environmental objectives and efficient capital expenditure (e.g. replacing assets ahead of their anticipated asset life to reduce emissions). Similarly the financial treatment of mid-life refurbishment

of early designs of GIS substations needs to be agreed prior to the implementation of any incentive scheme.

(g) Any proposed incentive scheme needs to take into account the voluntary reduction in leak rates achieved during previous regulatory periods, as it will be increasingly difficult to achieve the same level of performance going forward.

(h) Early equipment designs containing SF6 were not designed or manufactured to the same leak rate specifications as modern equivalents and therefore an underlying leak rate will be inevitable until such time as this equipment is replaced. A zero leak rate is not achievable even with the best available technology and to achieve leak rates of below 2% of mass installed would require the replacement of early designs of equipment. There is a finite limit in terms of leak detection, currently approximately 1x10-5 cc/sec (around 1%).

(i) Finally, any proposal to contain the emissions of SF6 must recognise that there is no available alternative to the use of SF6 as an arc interruption medium at transmission voltages (i.e. above 132kV). Consequently installed SF6 inventory will continue to increase for the foreseeable future and leak rate performance should therefore be measured against the individual licensees installed mass.