Chapter 6

Proposed Charge Controls

The proposed charge controls for 2G mobile voice termination

6.1 In Chapter 5, as in the May consultation, the Director has reached the provisional conclusion that, given the initial finding of SMP for each operator in the relevant market, direct controls (through a cap) should be imposed on the charges for terminating mobile voice calls on the 2G mobile networks of O2, Orange, T-Mobile and Vodafone. This Chapter sets out in more detail the proposed structure and level for these controls.

6.2 In order to impose a cap on a set of charges, it is necessary to identify:

(a) the appropriate final target *level* (the 'fair target charge') that these charges should be brought down to by the end of the control; and then

(b) *how* these charges should be brought down to this fair target charge.

The fair target charge

6.3 The Director has noted in Chapter 5 that his proposals for regulation, including the charge control, reflect considerations of economic efficiency and the intention to maximise benefits to end-users. He refers to the wholesale termination charge which he believes best achieves these objectives as the "fair target charge".

The proposed approach for setting the fair target charge

6.4 As in the May consultation, the Director proposes to set the target charges on the basis of LRIC plus a mark-up for common costs, based on the equal proportionate mark-up ('EPMU') approach, and an externality surcharge.

LRIC

6.5 The Director remains of the view that the most appropriate and economically efficient basis for regulatory charge controls is forward-looking LRIC. The LRIC of voice termination is the additional cost an MNO incurs to provide termination. This can also be seen as the cost that the firm would avoid if it decided not to provide voice termination, taking a long-run perspective. LRIC based charges correspond more closely to the charges that would prevail in an effectively competitive market than accounting-based measures of cost. It is a fundamental goal of price regulation to mimic the effects of a competitive market and this consideration underpins the use of LRIC.

6.6 LRIC is widely adopted as a regulatory costing technique, for example by other NRAs in Europe, and by the FCC in the US. It has also been identified as the most appropriate methodology to use for setting interconnection charges by the European Commission in its 1998 Recommendation on Interconnection (Recommendation

98/195/EC 8 January 1998). Furthermore, the Competition Commission (CC) agreed with the use of LRIC as the appropriate costing methodology for setting termination charges (see paragraph 2.251 of the CC report).

Economic depreciation

6.7 As stated in the May consultation, the depreciation approach selected by the Director for the LRIC model is economic depreciation (For further details of the conceptual underpinnings, see *Calls to mobile: economic depreciation*, September 2001. For a discussion of the cost path over time using economic depreciation in the LRIC model for key assets, see *Additional Information Concerning Oftel's LRIC Model*, 12 February 2002). This matches the cost of equipment to its actual and forecast usage over the long term. As a consequence, there is relatively little depreciation in years where utilisation is low and relatively high depreciation in years of full, or almost full, equipment utilisation. By contrast, most forms of accounting depreciation are relatively simple. The usual accounting method is to take the actual price paid for equipment (or its replacement cost) and divide by the expected equipment life to reach a depreciation charge for the year (thus adopting a straight-line depreciation profile). The timing of cost recovery under economic depreciation varies from that under accounting depreciation. Between 2001 and 2006 the use of economic depreciation results in a higher per minute cost of terminating calls whilst in years prior to 2001, economic depreciation would have resulted in lower costs compared to an equivalent calculation based on accounting straight-line depreciation.

EPMUs for recovery of common costs

6.8 The Director regards it as appropriate that regulated services contribute to the recovery of relevant common costs and it is his usual practice to add a mark-up on the top of LRIC to allow for full cost recovery. The Director believes that it is appropriate for these costs to be recovered by an EPMU. In the May consultation the Director considered whether he should set the fair target charge in accordance with Ramsey principles, i.e. whether the mark-up for the recovery of common costs should be set on the basis of demand conditions. The argument in favour of this pricing principle is that in theory it minimises the loss in economic efficiency introduced by the departure from marginal cost pricing due to the presence of common costs. However, the Director has reached the preliminary conclusion that the derivation of Ramsey prices, or more generally of welfare-optimal prices, raises complex conceptual and practical issues which does not allow for sufficiently reliable optimal prices to be estimated. The Director believes that EPMU achieves an appropriate balance between practicality and efficiency. Having considered the MNOs' responses to the May consultation on this issue, the Director's view has not changed. Further details on the Director's choice of the methodology for setting the mark-ups for common costs are included in Annex K.

6.9 Further details concerning the implementation of LRIC and the mark-up for common costs, as well as a discussion of the responses to the May consultation, can be found in Annex F.

Externality surcharge

6.10 The decision by a person to be part of a mobile network generates a benefit for fixed and mobile subscribers (the 'network externality'), because they will be able to call or be called by him or, at least have the option to do so. Since callers to mobiles derive a benefit from the called party's decision to subscribe to a mobile network, it seems appropriate to the Director that the charge they pay for the call should reflect this benefit. As in the previous proposals, this is done by adding a further mark up (an 'externality surcharge') to the termination charge which reflects the value of this externality. More details on the network externality and on the relevant surcharge, including a discussion of the responses to the May consultation, can be found below and in Annex G.

The structure of the proposed charge controls

6.11 The previous section dealt with how the fair target charge should be set. This section describes how the Director proposes that current termination charges should be brought down to this target.

6.12 As in the May consultation, the Director proposes to place a cap on the average of the charges levied by each of the four MNOs (i.e. daytime, evening and weekend charges) for terminating voice calls on their 2G networks, weighted by the relative call volumes. The cap shall bring the weighted average charge down to the fair target charge level by 2006.

6.13 However, in recognition that the likely date of publication of the the further Notification and final explanatory statement is now later than anticipated in the May consultation, the Director believes that it is more appropriate for the duration of the charge control to be reduced so that it operates over two periods rather than three, foregoing the previous initial period ending 31 March 2004. However, as before, the Director proposes that the target average charge (TAC) in the first period should be set as an absolute target in pence per minute.

6.14 Furthermore, the Director is concerned that consumers (callers to mobiles) should not suffer as a result of any further delays in implementation. As a result of removing the initial charge control period, MNOs will be able to charge higher prices for call termination up until 31 March 2004 than would have been the case under the May consultation proposals. The Director therefore proposes that the TAC for 2004/05 should be lower than that which would have prevailed under his previous approach in order that consumers are not disadvantaged by the delay in implementation.

6.15 In summary, the Director proposes that:

i. the controls should last until 31 March 2006;
ii. in the first period (1 April 2004 to 31 March 2005) the TAC should be a specified figure, whereas in the following period (1 April 2005 to 31 March 2006) the TAC should be set on the basis of an RPI-X formula (the X is the percentage by which the weighted average charge has to fall in each period to reach the target charge in the final year of the proposed control);

iii. there should be two separate sets of caps for termination of fixed-to-mobile and off-net mobile-to-mobile calls;
iv. the weights in each cap should be based on the volumes of minutes of the relevant traffic experienced by each MNO during the previous financial year;
v. call minutes to ported-in mobile numbers should be excluded from the weights and therefore from the controls; and
vi. since the fair target charges for the combined 900/1800MHz and the 1800MHz MNOs are different, the controls on these two types of operators should be set at different levels.

The control periods

6.16 The Director considers that the charge control regime should last until March 2006. He is of the view that this is the appropriate length of time for a control as it covers the period over which any changes in competitive conditions are unlikely to be material. He also considers that this is the appropriate period over which to bring termination charges down to the fair target charge level. The Director's opinion is that reductions over such a period are preferable to a one-off cut to allow operators and customers to adjust to new levels and structures of mobile charges. However, reductions must be achieved sufficiently quickly to deliver substantial benefits to consumers who should not be disadvantaged by any delays in implementation of these charge reductions (see Annex H for further discussion).

6.17 The proposed controls require that, during each period of the control, the average charge set by the regulated MNO (the Average Interconnection Charge or 'AIC'), does not exceed the charge with which the operator is required to comply (the Target Average Charge or 'TAC'). (More details on how the Director proposes to calculate the AIC and the TAC for this control are contained in Annex I).

6.18 For the first period of the control, the Director is proposing that the relevant TAC should be an absolute target in pence per minute. The TAC shall be different for the combined 900/1800MHz operators (ie Vodafone and O2) and for the 1800MHz operators (ie Orange and T-Mobile). As described in the May consultation, the Director considers this desirable to allow the charges of the four operators to be aligned in two ways:

1) the same TAC could then be set for Orange and T-Mobile, reflecting that they face the same cost conditions as 1800MHz operators (currently Orange and T-Mobile have different average charges); and
2) although the fair charge differs in each year for combined 900/1800MHz and 1800MHz operators, the target charges of the two types of operators in this first period could be set so that the TAC for each is the same amount above the fair charge. Hence the gap between the TAC for the two types of operators would equal the gap between the fair charge for each type of operator, on average, during the first period. One type of operator would not have an advantage over the other, which ensures that a distortion in competition in the retail market is avoided.

6.19 In the following period, the Director is proposing that the relevant TAC should be specified in terms of the RPI-X formula. There shall be a different X for the combined 900/1800MHz MNOs and for the 1800MHz MNOs, since even though the TACs are aligned with the absolute difference in fair charges in 2004/05, a slightly different percentage reduction may be required to reduce these charges to the fair charge in the final period.

Calls from fixed networks and off-net calls

6.20 As in the May consultation, the Director proposes to have two separate sets of controls:

a) one on the charges for terminating voice calls from fixed phones on 2G networks, and
b) one on the charges for terminating off-net (mobile-to-mobile) voice calls on 2G networks.

6.21 He also proposes to set these two sets of controls at the same level. The LRIC of termination does not differ depending on where the call originates. The fair charge, and in particular the externality surcharge, has been set primarily by reference to termination of fixed-to-mobile calls. But this is also the appropriate level to act as a safeguard cap for the termination of off-net calls (see the discussion on bilateral agreement in Chapter 5 for further details).

6.22 As in his previous proposals, the Director believes that the control on each MNO should be placed only on the weighted average of the current three time-of-day charges (day, evening, and weekend) as MNOs should be free to vary these charges provided the overall cap is met.

6.23 However, the Director is still of the view that the charges for terminating fixed-to-mobile and the charges for terminating off-net calls should not necessarily be required to be identical. As described in the May consultation, the purpose of two sets of caps is to avoid the potential for MNOs to load the majority of charges onto one type of call whilst still maintaining compliance with a single cap. The Director believes that this arrangement would not prevent the MNOs from entering into bilateral agreements or setting lower off-net termination charges, if they so wish.

6.24 Since each set of caps refers to a specific type of traffic, the Director also considers that the weights should be traffic-specific. This means that the weights employed to set the TAC and the AIC in each period of the control should reflect the volume of minutes of the relevant type of traffic terminated by each operator during the previous financial year. It is possible that an MNO is not able to identify the origin of the calls that terminate on its network, in which case the Director would expect to give consent to change the weights to reflect total (fixed-to-mobile and mobile-to-mobile) traffic volumes following a request from the MNO. This consent shall only last for the period of the control during which it is requested.

Treatment of ported numbers

6.25 Mobile number portability is the facility which enables subscribers to retain their mobile numbers when switching from one MNO to another. It was introduced in the UK in January 1999. Since then 2.5 million numbers (out of about 50 million) have been ported[28] and the volume continues to rise. Under the current technical and commercial arrangements, calls to a ported number are routed via the 'donor' MNO to the 'recipient' MNO, which then receives the termination charge of the donor MNO (less a Donor Conveyance Charge[29]). Hence, calls to ported numbers are 'ported-in' from the perspective of the recipient network and 'ported-out' from the perspective of the donor network.

6.26 In the May consultation the Director expressed the view that the level of porting of mobile numbers had become significant enough to warrant proper consideration of how they should be treated in the charge controls. He therefore proposed that the controls on the termination charges of each MNO should cover all calls terminated to handsets connected to the MNO's network, including calls to ported-in numbers (referred to in the May consultation as Option 1).

6.27 The Director is aware that the inclusion of ported-in minutes can make it difficult for the MNOs to comply with the charge controls. This is because it requires each MNO to forecast accurately, for each forthcoming control period, the termination charges and the traffic patterns of the other MNOs (whether regulated or not) from which it receives ported numbers. Hence, he also proposed to allow the MNOs in each control period to request for his consent to exclude ported-in minutes, with the proviso that this consent can be denied if there is a concern that there might be manipulation of the charge control arrangements.

6.28 However, having examined the issue further, the Director has now come to the conclusion that including ported-in minutes and then allowing the MNOs to request his consent to exclude them may result in an undesirable outcome. Under such an arrangement the MNOs with lower termination charges would have the incentive to request the Director's consent for exclusion, as the inclusion of ported-in minutes (for which they receive higher termination charges from other MNOs) in their AIC would require them to set their own charges lower in order to comply with their TAC. On the other hand, the MNOs with higher termination charges would have the incentive to retain the lower termination charges of the other MNOs in their control because it would reduce their AIC, allowing them to set their own charges higher and still comply with their TAC. Overall, this would result in a weakened set of charge controls, to the detriment of consumers.

6.29 Hence, the Director has modified his proposals to address this concern. He is now proposing to exclude calls to ported-in minutes from the charge controls. However, the Director is minded to include these call minutes in the controls if a concern arises that the MNOs might be reducing the effectiveness of the charge controls by setting excessive termination charges for calls to ported-in numbers. A more detailed explanation of this proposal is included in Annex J.

[28] Based on confidential operator data supplied to Oftel, August 2003.

[29] This is the charge which, under the current arrangement, is paid by the recipient MNO to the donor MNO for the transit service of routing of the ported call. This charge covers the switching, engineering and transmission costs incurred by the donor MNO in conveying the call to the recipient MNO.

The controls for the combined 900/1800MHz and the 1800MHz operators

6.30 The Director has considered whether there should be different target charges and values of X (ie one for each operator) or whether they should all be subject to the same cap. As in the May consultation, he believes the fair target charges for combined 900/1800MHz and 1800MHz operators should be different and, thus, that the controls on these two types of operators should be set at different levels. However, the Director believes that Vodafone and O2 (the two combined 900/1800MHz operators) should have the same target charges and X as each other, as should the two 1800MHz operators (Orange and T-Mobile), since operators of the same operator-type face the same cost conditions.

6.31 As discussed in detail in Annex F, the Director has not received compelling evidence to deviate from his view stated in the May consultation that he agrees with the CC's conclusion that, at current traffic levels, combined 900/1800MHz and 1800Mhz operators employ a similar amount of network equipment and so have similar costs when considered on an accounting depreciation basis (paragraphs 2.301-2.307 of the CC's report). As described in the May consultation, due solely to the characteristics of the 1800MHz spectrum, rather than operator-specific considerations, 1800MHz operators experience lower site utilisation in the earlier years of their operation than the combined 900/1800MHz operators. This effect, coupled with the use of economic depreciation in the calculation of the fair target charge, means that the average 1800MHz operator's costs can be expected to be higher than a combined 900/1800MHz operator's costs in 2005/06.

The specific proposals

6.32 This last section describes the specific proposals and how these have been derived.

6.33 Table 6.1 and 6.2 below summarise the proposed target average charges and charge caps for mobile-to-mobile 2G voice termination and fixed-to-mobile 2G voice termination respectively. The proposed charge controls for fixed-to-mobile are identical to those for mobile-to-mobile voice termination.

Table 6.1: Proposed charge caps and TAC for 2G mobile-to-mobile voice termination charges

	Combined 900/1800MHz MNOs		1800MHz MNOs	
Year	**O2**	**Vodafone**	**T-Mobile**	**Orange**
	Target average charge		Target average charge	
2004/05	5.65ppm	5.65ppm	6.38ppm	6.38ppm
	Cap		Cap	
2005/06	RPI-10.5	RPI-10.5	RPI-11.0	RPI-11.0

Table 6.2: Proposed charge caps and TAC for 2G fixed-to-mobile voice termination charges

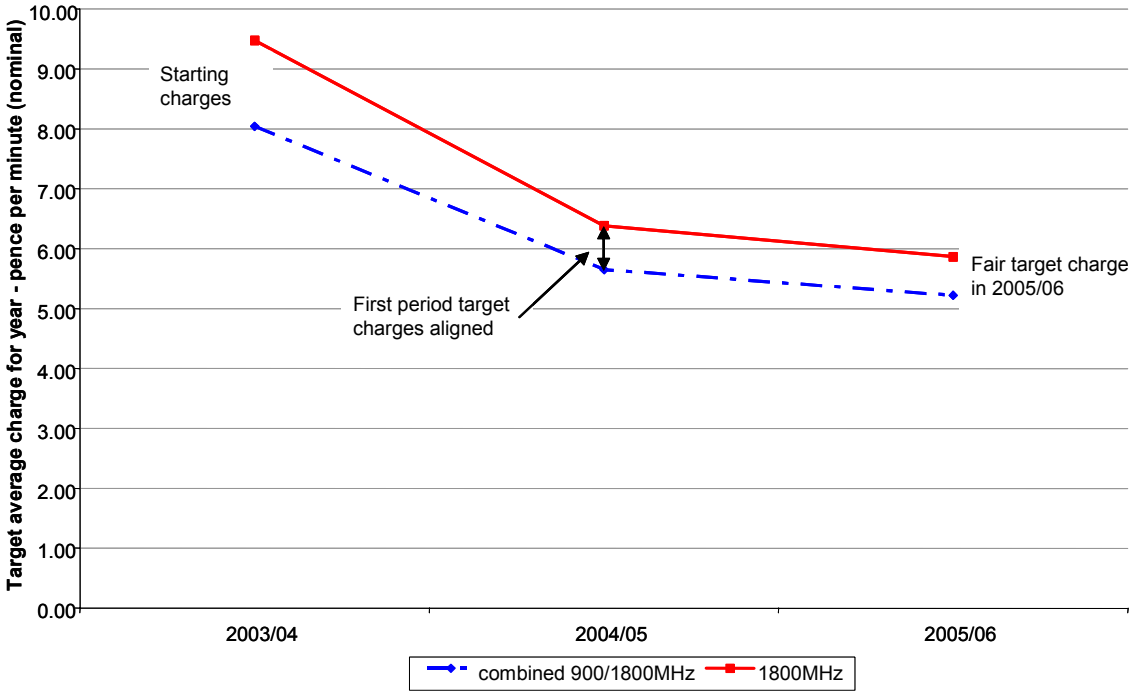
	Combined 900/1800 MHz MNOs		1800 MHz MNOs	
Year	**O2**	**Vodafone**	**T-Mobile**	**Orange**
	Target average charge		Target average charge	
2004/05	5.65ppm	5.65ppm	6.38ppm	6.38ppm

2005/06	RPI-10.5	Cap RPI-10.5	RPI-11.0	Cap RPI-11.0

Derivation of the figures

6.34 As described above, the charge controls are derived by first determining the fair target charge in 2005/06 and then calculating the appropriate percentage by which the current charge should fall each year from the average existing charges in 2003/04, allowing for inflation. A further adjustment is made to align the target charges for the two types of operators in the first period so that the TAC for the two types of operators is the same amount above the fair charge. The approach is illustrated in the figure below.

Figure 6.1: Starting charges and values of X



6.35 The derivation of the fair target charge is described in the section below followed by the calculation of the appropriate percentage reductions and first period target charges.

Derivation of the fair target charge

6.36 The fair target charge in 2005/06 is composed of the LRIC for voice termination with a two-stage mark-up: firstly an EPMU for common costs and secondly a mark-up for the network externality.

LRIC+EPMU for common cost recovery

6.37 The LRIC for voice termination is calculated from a LRIC model developed by Oftel and published in April 2002 (see http://www.analysys.com/ukmobilelric), based on the costs of a reasonably efficient 2G mobile operator in the UK. In its review of

the charges for calls to mobiles, the CC agreed with the general principles underlying the model methodology (see Annex F for further references) and agreed that the April 2002 LRIC model was a suitable starting point for the assessment of the costs of terminating calls on mobile networks (paragraph 2.287 in the CC report).

6.38 However, in the light of the CC's investigation last year and responses to the May consultation, the Director believes it appropriate to consider a number of issues and potential adjustments concerning the output of the April 2002 model. These issues are discussed briefly in turn below with further details provided in Annex F:

a) Cost of capital;
b) Amendments to the LRIC model calculation;
c) Comparison with MNO data;
d) Market share;
e) Network common costs; and
f) Non-network common costs.

a) *Cost of capital*

6.39 The appropriate cost of capital in the context of this market review is the cost of capital for a reasonably efficient 2G mobile operator in the UK. In forming his views about the cost of capital, the Director considered a number of methodologies, but still believes that the main emphasis should be on the use of the Capital Asset Pricing Model (CAPM). The Director has undertaken a fresh analysis of each of the components of the CAPM used to derive an estimate for the cost of capital in the light of more recent information, also giving consideration to comments received in response to the May consultation. On this basis, he estimates the pre-tax real cost of capital to be in the range of 10.3% to 14.3% with a mid-point of 12.25%, which is a small increase from the 12% that he proposed in the May consultation. This results in an increase in the economic cost of termination in 2005/06 of, other things being equal, about 0.03ppm (in real 2000/01 terms), or less than 1%. Further details of the derivation of this range and a discussion of responses to the May consultation are provided in Annex E.

b) *Amendments to the LRIC model calculation*

6.40 In response to the proposals set out in the May consultation, the Director received substantial comments from interested parties submitting that amendments to the LRIC model calculation were necessary. The Director has addressed these responses by amending the LRIC model where he believes it to be appropriate. The issues raised are discussed in detail in Annex F. In summary, the Director has amended the model calculation with reference to:

- a mechanical error regarding 32Mbit/s links resulting in missing links;
- the treatment of removed assets resulting from swapped-out equipment and declining equipment and discrepancy with the calculation of gross book value (GBV); and
- the treatment and allocation of location update costs.

6.41 In Annex F, the Director also addresses comments regarding the allocation of GSM licence fee and network management system (NMS) costs, the lifetime of assets used in the model, and the asset prices used in the model after 2010.

6.42 The overall impact of these amendments is an increase in the economic cost of termination in 2005/06 of about 0.20ppm (in real 2000/01 terms), or about 5%.

c) *Comparison with MNO data*

6.43 As stated in the May consultation, in order to address concerns over the accuracy of the LRIC model, the Director has undertaken a comparison between the outputs of the model and actual cost accounting data from the mobile operators. The Director has derived adjustments to be applied to the output of the LRIC model following the methodology proposed by the CC in its inquiry.

6.44 As described in Annex F, the Director has given detailed consideration to comments regarding the correctness of the network cost information submitted to the CC and its appropriate treatment. In particular, the Director has considered the following issues:

- the treatment of leased network assets;
- the appropriate 'data adjustment' factor (given that the MNOs' submitted information reflects both voice and data services whilst the LRIC model considers a voice-only network);
- the varying proportions over time of capital and operating costs that contribute towards the total economic cost;
- the appropriateness of a total level vs termination-specific reconciliation;
- the number of cell sites of 1800MHz operators in 2001 and subsequent investment;
- the assessment of difference in cost between combined 900/1800MHz and 1800MHz networks; and
- the benefits of a comparison with MNOs' fully allocated cost (FAC) information.

6.45 In summary, the Director finds that an upward adjustment of 35.6% should be applied to the capital costs and a downwards adjustment of 14.9% should be applied to the operating costs in the LRIC model, to reconcile the model's output with the actual costs incurred as reported by the MNOs. These percentage adjustments compare with a capital adjustment of +29.8% and operating adjustment of -12.5% considered in the May consultation. Overall, the net adjustments to the LRIC model figures following comparison with the MNOs' data increase the results for the 2005/06 economic cost by 0.11ppm and -0.05ppm (in real 2000/01 terms) for combined 900/1800MHz and 1800MHz operators respectively. These adjustments are approximately 0.4ppm lower (in real 2000/01 terms) than the adjustments set out in the May consultation.

d) *Market share*

6.46 The output of the LRIC model is based on the costs of an average operator with a 25% market share in 2001, declining to 20% by 2010 following the entrance of the

fifth operator, '3'. There is a question whether the fair charge should be adjusted to take into account the position of an MNO with a market share of total traffic lower than the average. The Director has considered this point further following responses to the May consultation (see Annex F), but maintains that the key cost figure is the fair charge in 2005/06 and whether a market share adjustment, as proposed by the CC (paragraph 2.280 of the CC report), is implemented or not, there would be no adjustment to the fair charge in 2005/06. The Director emphasises that his primary approach in determining the fair target charge has been to base his calculation on an achievable, competitively neutral, and internally consistent market share, rather than to attempt to predict any particular operator's market share in 2005/06.

e) *Network common costs*

6.47 The LRIC model incorporates an EPMU for network common costs. Responses to the May consultation include concerns about the level of these network common costs regarding the Director's treatment of minimum coverage costs relating to traffic capacity as well as the modularity of capacity. As discussed in Annex F, the Director continues to believe that his calculation of network common costs, as well as the allocation of these common costs using EPMU, is reasonable.

f) *Non-network common costs*

6.48 As in the May consultation, the Director has also included an increase in the common cost mark-up for the recovery of *non-network* administrative costs that should be recovered across all areas of the business, including both network and retail services. Following more detailed examination of the information submitted by the MNOs to the CC regarding non-network administrative overheads and the the treatment of these costs, the Director has revised this mark-up to 0.33ppm (in real 2000/01 terms) from his previous figure of 0.30ppm. Details of this calculation and discussion of other responses regarding non-network common costs, notably the treatment of customer acquisition, retention and service (CARS) costs, are provided in Annex F.

The economically efficient externality surcharge

6.49 As mentioned above, the Director considers it appropriate to add a further mark-up (an 'externality surcharge') to the termination charge, which reflects the value of the network externality.

6.50 Deriving a precise value for the economically efficient externality surcharge in theory is a complex and multi-faceted issue. A wide variety of factors should be considered when setting this surcharge. Specifying a model that captures all of the relevant conceptual points would thus be a very difficult task. In addition, such a model would rely on many parameters whose variables cannot reliably be estimated in practice (e.g. the elasticities of demand).

6.51 Several different quantification exercises have been carried out (which are described in more detail in the May consultation and in Annex G). Given the difficulties discussed above, the Director considers that he should not rely on any single estimate of the externality surcharge. Each of them is incomplete because it

only captures a sub-set of the factors and/or because some of the assumptions used (e.g. elasticities) cannot in practice be robustly derived from empirical data. However, the Director considers that each of them, in conjunction with the others, provides a useful insight into the reasonable value for the externality surcharge. The Director has considered comments on the validity of these estimates, and, based on the available evidence, the Director still considers that a reasonable externality surcharge is 0.4 ppm (in real 2000/01 terms). More details on this can be found in Annex G.

The fair target charge

6.52 Taking account of the factors raised above, the Director has determined the fair target charges in 2005/06 to be 4.61ppm and 5.19ppm (in real 2000/01 terms) for combined 900/1800MHz and 1800MHz operators respectively, as shown in the table below. These charges are similar (approximately 0.1ppm lower) to the charges proposed in the May consultation, as well as those determined by the CC and presented in Table 2.11 of their report.

Table 6.3: Derivation of the fair target charge in 2005/06

Pence per minute (real 2000/01)	**combined 900/1800MHz**	**1800MHz**
LRIC+ at 12% CoC (May consultation)	3.53	4.27
Cost of capital adjust (12.25% CoC)	0.03	0.04
Amendments to the LRIC model	0.20	0.20
Capital / Operating cost adjustment	0.11	-0.05
Non-network common cost mark-up	0.33	0.33
Network externality surcharge	0.40	0.40
Fair target charge	**4.61**	**5.19**

Calculation of X for the charge control

6.53 The value of X for the charge control can be calculated from the starting charge (at the beginning of the first period) and the fair target charge (in 2005/06). The starting charge (2003/04) can be derived from the nominal prices charged in 2002/03 after implementation of the 15% reduction in real terms implemented following the CC's recommendation and applied in accordance with the Continuation Notices given to the four MNOs on 23 July 2003, with effect from and including 25 July 2003. Information received from the MNOs in March 2003 confirmed the average charge for combined 900/1800MHz operators to be 9.35ppm (as required by the existing price controls on Vodafone and O2) and showed the average charge to be 11.03ppm for 1800MHz operators. This leads to a starting charge at the beginning of the first period of 7.53ppm and 8.88ppm (in real 2000/01 prices for direct comparison with the fair target charges) for combined 900/1800MHz and 1800MHz operators respectively. The details of this calculation and a discussion of the underlying methodology are presented in Annex H.

6.54 Consistent with the approach taken in the May consultation, by considering the starting charges and target charges in real terms (2000/01 prices), the real percentage reduction can be calculated which is required to reach the fair target charge in 2005/06 after three successive applications of that reduction. As in the

previous proposals, this results in three reductions of approximately 15% for combined 900/1800MHz and 16% for 1800MHz operators (see Annex H for details).

6.55 As outlined in paragraphs 6.11-6.15, the Director's intention is to follow the same approach as set out in the May consultation but to apply an additional amendment to ensure that consumers are not disadvantaged by the delay in implementation of charge reductions. To determine the TAC for 2004/05 for combined 900/1800MHz operators (in real 2000/01 terms), the first step is to apply two reductions of 15% in real terms to the starting charge of 7.53ppm (recognising that under the previous proposals the first of the two reductions would have taken effect before 31 March 2004). As described in Annex H, a further 0.28ppm is then subtracted to avoid disadvantaging consumers by the delay in implementation. This leads to a combined 900/1800MHz target charge of 5.14ppm (in real 2000/01 terms) for 2004/05. As indicated by Table 1 of Annex H, the gap in the fair charges for the two types of operators in 2004/05 is 0.67ppm which when added to 5.14ppm gives a target charge of 5.81ppm (in real 2000/01 terms) for the 1800MHz operators. Expressed in nominal terms, the target average charges for 2004/05 are 5.65ppm for combined 900/1800MHz operators and 6.38ppm for 1800MHz operators.

6.56 To complete the calculation, the value of X in the RPI-X control for 2005/06 can be derived from the real percentage reduction necessary to reduce the TAC for 2004/05 to the fair target charge in 2005/06. The following table shows the results of this calculation for combined 900/1800MHz and 1800MHz operators separately.

Table 6.4: TAC in 2004/05 and RPI-X for 2005/06

	combined 900/1800MHz	**1800MHz**
2004/05 target charge (real 2000/01 ppm)	5.14	5.81
2004/05 target charge (nominal ppm)	**5.65**	**6.38**
2005/06 target fair charge (real 2000/01 ppm)	4.61	5.19
Value of X for 2005/06 (rounded)	**10.5%**	**11.0%**

6.57 In conclusion, the Director proposes that the target average charge for 2004/05 should be set at 5.65ppm for combined 900/1800MHz operators and 6.38ppm for 1800MHz operators, followed by a charge control of RPI-10.5 for combined 900/1800MHz operators and RPI-11.0 for 1800MHz operators in the remaining period (2005/06).

Cost benefit analysis

6.58 The Director recognises that regulatory intervention is appropriate only when there is a reasonable expectation that its benefits will exceed its costs.

6.59 The Director's analysis of the welfare gains from regulation is contained in Annex L. In that annex, he compares a situation where termination charges are brought down via the charge control to the Director's fair target charge and where other prices are assumed to be set on a Ramsey basis; and an unregulated scenario in which MNOs set high termination charges, but are assumed to make no economic profits. This analysis is similar to the calculation in the May consultation, and later

explained further on the Oftel website (see http://www.oftel.gov.uk/publications/mobile/2003/gain0703.htm).

6.60 On the basis of the above analysis, the estimated gain in total welfare from regulation of mobile termination at the fair charge is approximately £225m per quarter in 2005/06 (in 2003/04 prices). The Director estimates that over the period of the charge controls, this would translate to a present value stream of benefits of approximately £1,640m. Further details are contained in Annex L. The Director's reservations about the relevance and practicality of deriving Ramsey prices means that this estimate should not be regarded as precise. Rather, it should be seen as an indication of the direction and broad magnitude of the effect of regulation.

6.61 The Director therefore considers that there are substantial welfare gains associated with regulation of termination charges at the proposed fair charge.