



Office of Utility Regulation

Investigation into Wholesale Broadband Pricing

Draft Decision

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Office of Utility Regulation

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1. Introduction

Following its audit of broadband service quality and pricing in Guernsey, the Office of Utility Regulation (“OUR”) identified concerns relating to the pricing of Cable & Wireless Guernsey’s (“C&WG”) wholesale ADSL service. These concerns were set out in OUR 05/14R¹ and include the pricing of this service for residential users, which was found to be above the level in other jurisdictions used as benchmarks, while the margin between the pricing of the wholesale service and the corresponding retail service offered by C&WG appeared low in comparison with benchmark jurisdictions. This suggested the level of wholesale broadband costs did not provide sufficient margin for competing ISPs to cover costs.

In Summer 2005, C&WG announced publicly that it would be enhancing the broadband service to all customers (wholesale and retail) by doubling the bandwidth available for no increased charge (“Double Broadband”). Following the announcement a number of ISPs raised concerns with the proposal. To allow for discussion on those issues C&WG delayed the introduction of “Double Broadband” until September 2005.

C&WG also reduced the wholesale rate for the service by around £2.00 (for example the cost of the wholesale residential service was reduced from £19.50 to £17.50 per month) pending an OUR investigation into the level of wholesale charges for broadband provision. This was an interim price reduction pending the conclusion of a detailed pricing investigation which the OUR announced it would undertake into wholesale broadband prices.

Since September, the OUR and C&WG have worked closely to identify the information needed to carry out this investigation and the Director General (“DG”) would like to thank C&WG for its co-operation on this matter. This notice sets out the DG’s analysis and findings following the conclusion of this investigation and his proposed decision with regard to C&WG’s wholesale prices for Broadband services.

¹ [Audit of Broadband Services in Guernsey. Information Notice \(OUR 05/14R\)](#)

2. Structure of this Paper

The remainder of this paper is structured as follows:

- Section 3:** Provides background to the investigation
- Section 4:** The basis for the DG's powers in this area is explained in terms of the regulatory and licensing regime;
- Section 5:** Discusses the issues raised by the investigation and key inputs for the investigation;
- Section 6:** Sets out the three main approaches considered by the DG;
- Section 7:** Explains the DG's provisional view as to the approach for assessing C&WG's broadband service; and
- Section 8:** Conclusions and future process are detailed.

Comments

Interested parties are invited to submit comments in writing on the matters set out in this paper to the following address:

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Comments are invited on this draft decision. The period for comments will run from 21st February to 21st March 2006. All comments should be clearly marked "**Comments on Investigation into Wholesale Broadband Pricing**" and should arrive before 5pm on 21st March, 2006.

In line with the policy set out in Document OUR 05/28 – "Regulation in Guernsey; Revised Consultation Procedures", the DG intends to make any further comments received available on the OUR website. Any material that is confidential should be put in a separate Annex and clearly marked so that it can be kept confidential. However the DG regrets that he is not in a position to respond individually to the responses to this consultation.

This document does not constitute legal, technical or commercial advice; the DG is not bound by this document and may amend it from time to time. This document is without prejudice to the legal position or the rights and duties of the DG to regulate the market generally.

3. Background

In September 2005 the OUR met with C&WG to explain the approach the OUR intended to take in estimating the level of wholesale ADSL prices required for C&WG to make a reasonable return in the provision of these services. The meeting provided an opportunity to discuss with C&WG the data sources and inputs to the investigation and the method the OUR intended to use in analysing C&WG's wholesale ADSL prices. This meeting was also used as the basis for agreeing the work plan and timetable to ensure the investigation was completed by the end of January 2006. At C&WG's request an extension of a week to this deadline was requested and granted. Since January 2006, there have been a series of meetings with C&WG to discuss certain aspects associated with this proposed decision.

This draft decision provides the DG's consideration of the evidence and data submitted by C&WG and presents the three main approaches considered by the DG together with his view of the appropriate approach to making this assessment.

4. Regulatory and Licensing Regime

Section 5(1) of the Telecommunications (Bailiwick of Guernsey) Law, 2001 ("the Telecoms Law"), provides that the DG may include in licences such conditions as he considers necessary to carry out his functions. The Telecoms Law specifically provides that such conditions can include (but are not limited to):

- conditions intended to prevent and control anti-competitive behaviour²; and
- conditions regulating the prices, premiums and discounts that may be charged or (as the case may be) allowed by a licensee which has a dominant position in a relevant market³.

In accordance with these provisions, C&WG's Fixed Telecommunications Licence contains a Condition (Condition 31) which states, inter alia, that:

"The Director General may determine the maximum level of charges the Licensee may apply for Licensed Telecommunications Services within a Relevant Market in which the Licensee has been found to be dominant. A determination may;

- a) provide for the overall limit to apply to such Licensed Telecommunications Services or categories of Licensed Telecommunications Services or any combination of Licensed Telecommunications Service;*
- b) restrict increases in any such charges or to require reductions in them whether by reference to any formula or otherwise; or*

² Condition 5(1)(c) of the Telecommunications (Bailiwick of Guernsey) Law, 2001.

³ Condition 5(1)(f) of the Telecommunications (Bailiwick of Guernsey) Law, 2001.

c) provide for different limits to apply in relation to different periods of time falling within the periods to which the determination applies.”

This condition allows the DG to regulate the prices that a licensee charges for its telecommunications services in a way and for a time that he deems appropriate, provided the licensee has a dominant position in the relevant market.

In OUR 05/19, the DG determined that C&WG is dominant in the:

- wholesale fixed-line telecommunications market:
- the retail fixed-line telecommunications market:

Therefore the DG is empowered to regulate the charges applied by C&WG for wholesale broadband services.

5. General issues relevant to the assessment

5.1. Discounted cash flow approach

An assessment of whether the return earned by C&WG as a provider of wholesale broadband services is reasonable can be made by evaluating the historic and projected cash flows generated by that business. Where returns exceed a level regarded as reasonable, a dominant wholesale provider of broadband services such as C&WG would be required to adjust its prices to ensure an excessive return was not made from retailers of broadband services who have little or no alternative but to acquire wholesale broadband services from C&WG.

In the OUR's analysis a "reasonable return" is referenced to C&WG's average estimated cost of capital (or Weighted Average Cost of Capital – "WACC"). The OUR also proposes to allow C&WG to recover some of its fixed and common costs from ADSL services in contrast to a purely incremental cost approach. In undertaking the investigation the OUR required the production of a time series of cash flows generated by C&WG's wholesale ADSL service. The time series starts with the initial investment in broadband networks and carries on into the future. Whether C&WG's wholesale service makes a reasonable return is assessed by calculating the Internal Rate of Return ("IRR") of the cash flows and comparing this with the company's cost of capital for the project. A cash flow based approach is widely used when evaluating new investments and projects are viable when the $IRR > WACC$ (or equivalently Net Present Value >0).

Such an approach is reliant on assumptions, including forecasts of key input costs and revenues where these are available to a reasonable level of accuracy and allocated to particular years. Beyond a certain time period, projections on an annual basis may not be sufficiently reliable and further, more general assumptions, may need to be made about average revenues and costs over the remaining period for which a business can reasonably be expected to generate returns. Subject to such assumptions, net cash flows can be projected to a finite or infinite time horizon depending on what is considered reasonable. Where a finite time horizon is appropriate a view is required as to the appropriate time period, while some account of the economic value of remaining assets at the end of this period might also be taken into account – referred to as the 'terminal value'.

The discounted cash flow approach therefore calculates the present value of a stream of cash flows that combine the annual forecast cash flows with a residual or terminal value. This would allow for an assessment of the level of return by C&WG earned from its wholesale broadband business that can be compared with what is considered reasonable for such a business.

The DG believes that the above general approach is appropriate for this investigation as the rapid growth in ADSL subscribers since the launch of services in 2002 suggest past unit costs on a Fully Allocated Cost ("FAC") or Current Cost Accounting ("CCA") basis is not a reasonable basis for forward pricing. In these circumstances

costs are initially high as the assets are new (i.e. little cumulative depreciation) and asset prices are high and falling rapidly and with a low number of subscribers unit costs tend to be higher due to lack of economies of scale. Similarly forward looking unit costs on a FAC/CCA basis are also misleading as a form of setting prices as in the long term prices need to be above CCA costs in order to recover losses made in the early years of operation.

5.2. Terminal Value

All three of the OUR's approaches are based on the DCF technique and in any price-setting analysis of this type the over-riding objective, from a regulatory perspective, should be a matching of costs to the associated benefits. Hence, if customer revenues included within the cashflow timeframe are derived from investments that were made prior to the start of that timeframe then it would be appropriate to factor in the cost of those historic investments, to the extent that they provide some ongoing economic benefit, in the DCF analysis.

The OUR has decided to recognise such past investments in full and, in accordance with the matching principle, has also included historic revenues generated from those investments and associated operating costs. It is worth noting that the same argument for matching costs to associated benefits is equally applicable to the far end of the timeframe and the inclusion of a terminal value is a means of ensuring such a match.

The terminal value can serve two purposes in a DCF analysis:

- It provides a means of matching economic costs of tangible and intangible assets to the benefits included within the timeframe; and
- It can be used to capture the value of any economic rents that are projected to be realisable beyond the DCF timeframe.

The first of these reflects the remaining economic value of any assets at the end of the timeframe while estimating the value of any economic rent requires a view about the stability and longevity of future net cashflows beyond the forecast timeframe. In circumstances where there is ongoing value to the business that has no clearly defined time limit, models have been developed to estimate this value. For example, in circumstances where a sizeable customer base is reasonably expected to continue to pay for a form of broadband service indefinitely into the future, either in its current or some advanced form, a perpetuity model such as Gordon's Growth Model may be appropriate.

Proposed Decision

The DG proposes to assess the reasonableness of C&WG's pricing levels using a discounted cash flow approach, based on a C&WG's average estimated cost of capital of 12% and allow C&WG to recover some of its fixed and common costs from ADSL services

5.3. Issues considered by the OUR

This section sets out the scope of services for this investigation, issues around the appropriate time period for the analysis, implications of proposed investment in NGN and assumptions about data inputs.

5.3.1. Scope

The OUR proposes to assess the demand for all network ADSL services in Guernsey, rather than individual ADSL services. Thus it has estimated both costs and revenues (including transfer charges) for the provision of all ADSL connections, both business and residential. This approach will avoid having to make subjective decisions about the appropriate allocation (recovery) of fixed costs common to all ADSL services. In order to understand whether the DSL service is making a proportionate contribution to fixed and common costs the OUR proposes to include costs that take account of common costs and hence calculate an IRR on this basis. The cost of capital used is expressed on a pre-tax and nominal basis.

5.3.2. Time period

Investment in the assets required to support the provision of wholesale broadband services has associated risks, and returns should be commensurate with those risks. An important aspect is the time horizon over which the resulting net cash flows are to be taken into account. A feature of network type investment, such as the provision of wholesale broadband services in Guernsey, is that initial outlays are more generally recovered towards the later stages of the asset life given the significant upfront investment required before the service can be provided and demand for the service grows. This is particularly true in the case of broadband services where the market grew from a zero base. A view on the useful asset life therefore has implications for the extent of future net cash flows associated with such an investment.

A further related issue is whether forecast net cash flows should be taken into account only for as long as tangible assets may be expected to have a useful economic life. A view that customers are an intangible asset, for example, might suggest that while net cash flows generated by customers are expected to continue this represents value to the provider of a service. In these circumstances there may be reason to take account of future net cash flows based on expectations about the sustainability of the customer base and the service provided. This raises questions as to how far into the future such net cash flows might reasonably be included in any measure of the return to the investor.

5.3.3. NGN investment supporting broadband provision

An additional issue this investigation has had to consider is C&WG's planned investment in Next Generation Networks (NGN). This is expected to be a sizeable investment by C&WG and raises questions about the extent to which wholesale broadband customers should contribute to these investment costs. C&WG has

concerns regarding its ability to make meaningful assumptions, at this stage, over possible or likely services that may be provided using the generic functionality of an NGN network platform. Given this C&WG is of the view that it is too early to establish any reasonable forecast for non-broadband services that can be used as a basis on which NGN investment costs are shared between broadband and other services. C&WG proposes that wholesale broadband services should meet the full costs of NGN investment where the network investment facilitates the provision of broadband even though economies of scope exist in the potential for those assets to support other services in future.

The DG has considered this position and is of the view that additional investment should be justified by the additional benefit provided. Where a provider chooses to invest and is not in a position to present a comprehensive view of the future services likely to utilise that investment, this raises several concerns. In the context of this investigation, the allocation of future NGN investment costs on the basis proposed by C&WG appears likely to inflate the prices paid by wholesale broadband customers without an adequate economic basis. This is further underlined by the fact that, subject to extensions and maintenance to the network to cater for market growth, the current network supporting the wholesale provision of broadband services is able to support existing broadband services without the need for NGN investment.

In the DG's view, if investment in NGN is not intended exclusively to support broadband provision, the economies of scope of the NGN network suggest non-broadband services should be expected to share in those costs in some proportionate manner. A further key principle, as discussed above, is that costs should be matched to the associated benefits, suggesting the time horizon over which any assessment is made should be sufficient to take full account of the benefits to the investor.

A view may be advanced that if C&WG chose to invest in NGN with the intention that broadband would be the key service underpinning all future services then it should be able to recover its NGN investment to the extent that it supports broadband provision regardless of economies of scope. On this basis it might be argued that other services should only attract the marginal cost of their provision. Given that C&WG's wholesale broadband service appears to precede other services in terms of utilising the NGN network there may be some merit to this view. If this view is accepted, this would however also suggest that the benefits to C&WG of the wholesale broadband service as the fundamental platform facilitating other services might be expected to extend well beyond the short to medium term. In any event, as noted above, any assessment should be over a timeframe that takes adequate account of the benefits to the investor.

It should also be noted that where expected customer growth rates are not consistent with that of a mature market even after a single asset lifecycle, such a timeframe would not appear to offer a valid basis for an assessment about adequate return for a new business. Over the five years between now and 2010, C&WG forecasts its end-customer base growing by a compound average growth rate of [confidential] which is not consistent with the growth rate expected of a mature business. This further supports the view that a longer time period than 5 years may be more appropriate to ensure the ongoing return to C&WG on its investment is included as part of any assessment of return on investment.

5.3.4. Input Assumptions

This section sets out the assumptions used by the DG to inform his assessment. These assumptions have been broken down to cover the three main investment periods used by the DG in forming a view on the appropriate wholesale rate for broadband services in Guernsey.

Period 2000/01 to 2005/06 - Inputs required for the period between 2000/01 and 2005/06 are made with relative certainty given the predominantly historic nature of the data. C&WG has provided the revenue streams realised by its wholesale broadband service for each year over this period, as well as the operating and capital expenditure costs incurred by the business (and its predecessor Guernsey Telecoms) on a cash basis.

Period 2006/07 to 2009/10 - A reasonable level of accuracy is also possible on an annual basis in estimating revenues, operating and capital expenditure costs over the period 2006/07 to 2009/10. C&WG has supplied its estimates of revenue growth for each of these years, which assume a slow down in the rate of revenue growth consistent with assumptions that the wholesale broadband provision market will mature over this period to approximately 16-17k subscribers by the end of the period. C&WG also provided estimates of its operating costs as well as investment costs, including NGN investment over this period taking into account initial set-up costs as well as the extension of the network over time.

Period 2010/11 to 2015/16 - The OUR regards annual projections beyond 2009/10 as less reliable indicators of cash flows in that their allocation to a specific year involve an obvious element of uncertainty. However, where a particular approach assumes that net cash flows can be expected to accrue to C&WG to at least the end of 2015/16 reasonable estimates of costs and revenues can be made based on more general assumptions. For example, given C&WG's own business plan assumes population growth of [confidential] from 2005/05 it is reasonable to assume that revenues from wholesale broadband services will continue to grow at least at this rate up to 2015/16. The OUR has therefore chosen to base projections over the period 2009/10 to 2015/16 on an assumed [confidential] growth rate in the annual revenue and operating costs in the year 2009/10. Estimates of average capital expenditure are based on C&WG's historic and projected investment levels.

C&WG has argued that the asset life of telecommunications equipment is far shorter with modern technology and that C&WG would expect to commence replacing NGN equipment very soon after the end of 2009/10. This effectively requires some account is taken of subsequent rounds of renewed capital investment in broadband which lowers the forecast net cash flows and therefore the return to the business. The OUR proposes to accept a five year basis for the economic life of broadband tangible assets and the ongoing need for repeated capital investment. On this basis an average level of capital expenditure is assumed beyond 2009/10 based on C&WG investments projections over the 2005/06 to 2009/10 period which is significantly influenced by levels of NGN investment forecast by C&WG. C&WG's asset replacement over the

period 2006/07 to 2009/10 includes assumed investment in replacing [This section is confidential] Ongoing extension to the network of a similar order to that over previous years is also assumed.

6. Approaches to the assessment of C&WG's Wholesale Charges

The DG recognises that there are a number of different approaches that may be used to assess the appropriate return earned by C&WG from the provision of its wholesale broadband services. The three main approaches on which views are sought are set out in this section. For the avoidance of doubt, any reference to price changes is referenced to the interim wholesale charges introduced by C&WG in September 2005 (e.g. £17.49 for residential broadband service).

6.1.1. Approach 1

The discussion in section 5 suggested an approach may be justified that was not limited to including only those projected cash flows generated through the useful economic life of the tangible assets. A view that C&WG's wholesale customer base is an intangible asset, for example, may suggest that where net cash flows generated by customers are expected to continue indefinitely this represents value to a provider of a service that should be taken into account when assessing return.

There are, of course, uncertainties associated with valuing a customer base at the end of a future time period. Developments such as local loop unbundling and the potential for wireless broadband for example could materially reduce the size of C&WG's wholesale customer base. However, wireless broadband has yet to see significant growth in Guernsey and there is currently no requirement on C&WG to unbundle the local-loop. Evidence of a slow attrition rate in incumbent market shares elsewhere even where local loop unbundling is mandated and expected entry levels in Guernsey suggest the more likely scenario is one where C&WG's position as a dominant provider of wholesale broadband services continues for the indefinite future.

An approach that can be applied to take account of the above is the Gordon's Growth Model. This model assumes a perpetual net cash flow based on a fixed growth rate from a future point in time on which a terminal value is based. It is an approach that emphasises the value of the customer base to the provider rather than the tangible assets of the business. This model has been applied in this approach based on assumptions about the net cash flow to C&WG at the end of 2015/16 and a growth rate of [confidential] from that period forward.

Table 1 presents the results of the OUR's analysis under Approach 1:

Table 1: Summary of results of Approach 1

| | 2000/01 to 2005/06 | 2006/07 to 2009/10 | 2010/11 to 2015/16 |
|--|-----------------------------------|-----------------------------------|-----------------------------------|
| Average revenue p.a. (23% return) | £[] | £[] | £[] |
| Average revenue p.a. (12% return) | £[] | £[] | £[] |
| Difference in annual revenues | £[] | £[] | £[] |
| Estimate of terminal value | | | £[] |
| | | | |
| <i>Cost of capital = 12%</i> | | | |
| <i>Growth (2010/11 to 2015/16) = []</i> | | | |
| <i>Economic life of assets = 5 years</i> | | | |

Based on this analysis C&WG earns a 23% return on the provision of wholesale broadband services compared to a cost of capital of 12%. This implies a price reduction backdated from September 2005 of the order of 35% is required to ensure C&WG earns a return that is consistent with a 12% cost of capital.

6.1.2. Approach 2

Approach 2 adopts essentially the same assumptions as Approach 1, the key difference being the view on the appropriate terminal value. A discounted cash flow approach is taken over the period 2000/01 to 2015/16, which effectively implies a forecast time horizon of 10 years from the time of the initial investment in NGN assets. In addition, the tangible assets would be expected to have some value at the end of the forecast period and in recognition of this a terminal value is included to estimate the un-depreciated value of these assets at the end of this period. Under this approach the OUR does not forecast net cash flows beyond 2015/16. A key assumption therefore is that C&WG's position in the wholesale broadband business is unlikely to alter significantly up to 2015/16. The wholesale broadband investment in the existing network, with account taken of the need for expansion, is anticipated to continue to generate cash flows over a 10 year time horizon from 2005/06 under this approach.

There are possible objections to excluding assumed returns beyond 2015/16. One view is that there is a reasonable likelihood of broadband services continuing beyond 2015/16. In this case, it may be argued as more reasonable to assume C&WG will remain indefinitely as the wholesale provider of broadband services to the significant majority of customers in Guernsey. C&WG would therefore benefit from a sustained level of cash flows that would not be taken into account when considering the level of charges that are appropriate for it to make a reasonable return on its investment. It may also be argued that models for this scenario take full account of the risk of cash flows beyond a limited time horizon and rational investors would not ignore the potential for such returns.

However, there may also be objections to an approach that assumes a perpetuity of future net cash flows as investors may reasonably base their investment on additional

criterion. For example, payback periods also feature in assessment criteria, particularly in technologies with particularly short life cycles.

Table 2 presents the results of the OUR's analysis under Approach 2:

Table 2: Summary of results of Approach 2

| | 2000/01 to 2005/06 | 2006/07 to 2009/10 | 2010/11 to 2015/16 |
|--|-----------------------------------|-----------------------------------|-----------------------------------|
| Average revenue p.a. (19% return) | £[] | £[] | £[] |
| Average revenue p.a. (12% return) | £[] | £[] | £[] |
| Difference in annual revenues | £[] | £[] | £[] |
| Estimate of terminal value (remaining economic asset value) | | | £[] |
| | | | |
| <i>Cost of capital = 12%</i> | | | |
| <i>Growth (2010/11 to 2015/16) = []</i> | | | |
| <i>Economic life of assets = 5 years</i> | | | |

Based on this analysis C&WG earns a 19% return on the provision of wholesale broadband services compared to a cost of capital of 12%. This implies a price reduction backdated from September 2005 of the order of 22% is required to ensure C&WG earns a return that is consistent with a 12% cost of capital.

6.1.3. Approach 3

The discussion in Section 5 raised the issue of whether wholesale broadband prices should allow for costs incurred by C&WG's investment in the NGN network, given the limited information which the allocation of the costs of the NGN investment may be based despite the economies of scope of such an investment. The DG's view is that additional investment should be justified by the additional benefit provided to the wholesale broadband service portfolio offered by C&WG and that the assessment should be made over a time period which takes adequate account of the benefits of the investment. Since C&WG has chosen to invest in the NGN network but is not in a position to present a comprehensive view of the future services likely to utilise that investment, the allocation of the NGN investment costs on the basis proposed by C&WG over a time horizon for the assessment up to 2009/10 is considered likely to increase the costs to wholesale broadband customers without a sound economic basis.

The discussion in Section 5 also set out the DG's concern that subject to extensions to the network to cater for market growth, the current network supporting the wholesale provision of broadband services is able to support existing broadband services without the need for NGN investment. C&WG's estimate of investment costs to support wholesale broadband provision therefore does not appear to have been made exclusively for the benefit of C&WG's wholesale broadband service. If investment in NGN is not intended exclusively to support broadband provision, the economies of

scope of the NGN network suggest an approach where broadband services do not share in those costs to the extent proposed by C&WG⁴.

In this approach the time horizon over which net cash flows are taken into account in is restricted to a 5 year period beyond 2005/06 based on an assumed economic life of existing assets, effectively excluding all forecast NGN investment. Tangible assets are therefore depreciated over 5 years and on this basis the time period of the analysis is to the end of 2010/11. Undepreciated assets as the result of investment in network extension after 2005/06 are accounted for in a terminal value at the end of this period.

Table 3 presents the results of the OUR's analysis under Approach 3:

Table 3: Summary of results of Approach 3

| | 2000/01 to 2010/11 |
|--|-----------------------------------|
| Average revenue p.a. (16% return) | £[] |
| Average revenue p.a. (12% return) | £[] |
| Difference in annual revenue | £[] |
| Estimate of terminal value | £[] |
| | |
| <i>Cost of capital = 12%</i> | |
| <i>Growth (2009/10 to 2010/11) = []</i> | |
| <i>Economic life of assets = 5 years</i> | |

Based on this analysis C&WG earns a 16% return on the provision of wholesale broadband services compared to a cost of capital of 12%. This implies a price reduction backdated from September 2005 of the order of 13% is required to ensure C&WG earns a return that is consistent with a 12% cost of capital.

⁴ It is however acknowledged that network extension costs may reasonably be expected as part of the capital expenditure costs assumed for the existing network to meet growing demand in future. C&WG's estimate is that it has incurred an average cost of around [confidential] for the eight network expansion investments completed and projected.

7. Proposed approach

The DG recognises that in general the further the time horizon over which forecasts are made the greater the risk that assumptions are less robust. It should however also be noted that price changes can be reviewed should circumstances change.

The DG has had to consider how the allocation of C&WG's forecast investment in NGN networks should be dealt with in this investigation. A key issue is that such investment involves economies of scope given these NGN assets are able to support the provision of more than one service. C&WG has stated it is not in a position to provide forecasts of the uptake of non-broadband services utilising the proposed NGN networks; this raises issues as to whether there is a sound economic rationale to allocate this investment to broadband services on the basis proposed. A further issue is that the inclusion of NGN costs within the assessment effectively means the start-up costs for broadband incurred by C&WG, as well as the start-up costs of NGN are included but the time period over which account is taken of net cash flows generated into the future appears relatively short.

If CWG's initial broadband investment is considered, for example, it is apparent that cash flows from this investment only stabilise after some 6-8 years from the initial investment. Even over the five years between 2005/06 and 2010/11, C&WG forecasts its end-customer base growing by a compound average growth rate of [confidential], with growth in 2009/10 still projected at [confidential]. These are not indicators consistent with a view that the business will be at a mature or declining stage over this timeframe. There is therefore the potential for bias in the analysis in C&WG's favour if cash flows expected to occur beyond 5 years are excluded in an approach that extends only to 2009/10.

In terms of evaluating the proposed approaches, while there are arguments for Approach 1 in that the benefits to C&WG should attribute a future value to the customer base and that the time horizon of such a benefit may be considerable, other factors must also be considered. In particular, changes in technology as well as future services and the move towards investment in NGN networks present material uncertainties given the step change in the context of providing telecommunication services. The DG is therefore of the view that Approach 1, which relies on assumptions of future cash flows and returns on investment based on a perpetuity model, is less likely to present the most robust outcome on which price changes can be proposed.

Approach 3 can be argued to provide the most conservative view of the likely cash flows earned by C&WG from its investment in the current broadband network. Given the issues around the shorter asset life expected of new technologies an approach that is largely based on the economic life of known capital expenditure may also be argued to provide a more appropriate basis on which to make an assessment. In these circumstances the net cash flows are more certain than under Approaches 1 and 2 and there is less risk that benefit attributed to C&WG's investment is not realised due to unforeseen events such as rapid uptake of services that reduce the need for C&WG's wholesale broadband service.

On the basis that investment costs should only be accepted within proposed charges where the benefits are also justified there may be an argument that, given the issues around forecasting future uptake of non-broadband services on NGN networks, NGN investment costs should be excluded entirely from any assessment of C&WG's return on its broadband investment. There are however associated concerns with this approach in that if NGN investment is not included this investment will need to be attributed to other services in the future, creating potential complications as to the appropriate basis for doing so. An investment in an 8Mbit service over the 5 year time horizon also raises issues since it is unclear as to whether this is feasible under a non-NGN scenario.

Discussions with C&WG suggest it may favour an approach that takes account of NGN investment but excludes future investment in network extension. Under this approach C&WG proposes that the net cash flows from investment in the NGN network are taken into account only as far as 2010/11. C&WG has also indicated that a terminal value would be inappropriate under such an approach since it does not anticipate that the NGN network investment made in 2006/07 would have any remaining economic life after 2010/11.

The DG's primary concern with this approach is that C&WG proposes that the assessment should take account of the set-up costs of the NGN network investment but not recognise net cash flows generated by this investment beyond a relatively short time period. Given the points made above on projected customer growth rates, it would appear more reasonable to expect that the wholesale broadband service would generate positive net cash flows to C&WG beyond 2010/11. If a conservative view is taken of the net cash flows generated by C&WG's investment in broadband networks it is the DG's view that Approach 3 is more consistent with the principle of matching costs with benefits than the alternative suggested by C&WG.

The DG is of the view that Approach 2 provides a more reasonable basis for assessment over a time period that is sufficient to take account of the benefits of investment. It should also be noted that given economies of scope of a generic NGN network, the allocation of NGN costs on the basis proposed by C&WG and accepted in Approach 2 would appear to in fact provide a conservative estimate of the net cash flows that could be attributed to wholesale broadband provision. Having considered these issues, the DG is of the view that a time horizon to 2009/10 as proposed by C&WG takes inadequate account of the likely cash flows generated by the NGN assets. On the basis of the above and an assumed 5 year economic life for NGN assets it seems more appropriate that where NGN investment costs are taken into account a time horizon of 10 years to 2015/16 is more reasonable. Approach 2 is therefore the DG's preferred approach.

Under Approach 2 set out in Section 6.1.2., the DG believes that the current interim prices for all wholesale broadband services should be reduced by 22%. This reduction in wholesale rates is back-dated to September 2005, the date when C&WG introduced its interim price for wholesale services and when it launched its retail 'Double Broadband' service. The DG therefore proposes to adopt this approach in setting wholesale broadband services.

Proposed Decision

The DG will reduce C&WG's prices, backdated from September 2005, by 22% to ensure C&WG earns a return of 12% from the provision of wholesale broadband services.

8. Conclusions and next Steps

The OUR's investigation suggests that wholesale broadband prices can be reduced by 22% from their current level and that such a reduction will enable C&WG earn a reasonable return on their investment. The DG has formulated this position based on the best information available to him at this time. Subject to any comments that interested parties may wish to make on these proposals, the DG intends to reduce C&WG's wholesale broadband charges retrospectively from September 2005.

The DG would welcome any comments on the proposed decision by 21st March 2006.

Appendix 1: Allocation of operating expenditure

Operating expenditure is apportioned to the broadband service according to the relative volumes in the year the cost is incurred. C&WG's Oros system has been used as the source for all operating costs with 2003/04 as the base year (being the most recent published regulatory accounts). Access costs have not been included as they are assumed to relate to the provision of the voice telephony service. Also, exceptional items such as the voluntary release scheme have been excluded.

In its submission of cash flows, C&WG has assumed that there is a direct relationship between direct labour costs, employee related support costs and fixed and common costs. It has also assumed that the activity in the related areas mentioned above is less at the time when Broadband was first installed (2000/02) and to a lesser extent when the network is being replaced by NGN (2006/08). A view that it will be necessary to have a certain degree of parallel running prior to the switch over to full NGN is the reason for such an assumption. In contrast the Broadband share of network costs is forecast to rise as the customer base grows and default capacity increases.

C&WG has derived average actual salary increases applied to the years from 2000-2005, again using 2003/04 as the base year. The salary factor has been applied to those elements of operating costs that include a high percentage of labour costs i.e. direct labour costs, employee related support costs and common corporate costs. A cost of capital rate of 12% has been applied to the elements of fixed assets included under direct and indirect operating costs. Costs have not been inflated by RPI as it is anticipated that the rise in RPI will be cancelled by the decrease in prices. C&WG has submitted that the only third party direct costs are for support and estimates of this cost are also included.

Appendix 2: Allocation of capital expenditure

[this section is confidential]