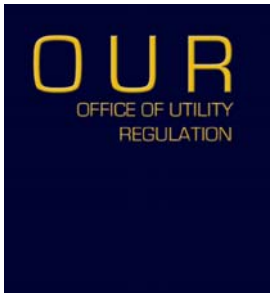

Office of Utility Regulation

Price Control for Telecommunications Services in Guernsey:

Calculating Allowed Revenue and the Cost of Capital

Consultation Document

Document No: OUR 04/11 **June 2004**

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1. Introduction

The Office of Utility Regulation (OUR) was established in October 2001 to regulate the telecommunications, post and electricity sectors in Guernsey. In the telecommunications sector, the States of Guernsey also decided to open the market up to competition at the earliest possible time and by April 2003, all parts of the telecommunications market in Guernsey were opened up to competitive entry.

However, like most markets that are newly liberalised, there is a dominant incumbent provider of telecommunications networks and services – Cable & Wireless Guernsey (C&WG). The regulatory regime, in common with international practice provides for the regulation of the dominant incumbent operator, and in particular the Director General of Utility Regulation (DG) has the power to control the prices that C&WG charges for certain services.

In November 2001, the OUR consulted on the need for, and the format of price control in the telecoms market[1], and published a report on that consultation in March 2002[2], along with a decision to impose price control on a range of services provided by C&WG using the internationally recognised mechanism of incentive regulation.

The OUR is currently reviewing the retail price control in the Guernsey telecommunications market and this requires consideration of a number of inter-related issues. This consultation document should therefore be read in conjunction with the following papers:

Consultation Document OUR 04/09: Market Dominance in the Telecommunications Sector in Guernsey.
This paper looks at the market developments since the opening of the telecommunications sector to competitive entry and addresses the DG's finding that C&WG is dominant in the fixed and mobile telecommunications markets in Guernsey.

Consultation Document OUR 04/10: Price Control for Telecommunications Services in Guernsey: Review of Price Control Scope and Structure.
This document gives more detail on the existing price control, considers price developments in the market since the control was introduced and reviews the structure and scope of the control.

In this Document, OUR addresses some specific technical aspects of the price control. First, the paper considers a range of key inputs into calculating the allowed revenue of the price controlled business over the period of price control including the asset base, an allowance for capital investment and operating costs. The paper then goes on to consider how to arrive at an appropriate cost of capital for the business and addresses a detailed submission from C&WG on this topic.

[1] Document OUR 01/22: Proposals for the Price Regulation of Fixed Telecommunications Services; Consultation Paper
[2] Document OUR 02/11: Price Regulation of Fixed Telecommunications Services: Report on the Consultation and Decision Notice

2. Structure of this Consultation

This paper is structured as follows:

Section 3 sets out the background to the review of the price control including relevant legal and licensing provisions;

Section 4 provides an overview of the issues that are being consulted on in this paper;

Sections 5 to 10 describe a number of key inputs used to calculate the allowed revenue of a firm's price controlled business and sets out the various options for calculating these. Comments are invited on the inputs and respondents are invited to contact OUR if they wish to obtain example calculations in spreadsheet form to assist in formulating responses;

Sections 11 to 13 consider the appropriate cost of capital that should be allowed in the price control, summarises C&WG's submissions in this area and asks respondents to comment on a number of specific questions about the mechanism for setting the cost of capital and the inputs into such a calculation;

Section 14 concludes the consultation paper and describes the next steps.

Annex 1 contains a list of all of the questions asked in this paper;

Annex 2 provides, for information, benchmark costs of capital set by both telecoms regulators and other regulators and authorities in the UK in recent years.

The consultation period will run from Wednesday 30th June to Friday 3rd September 2004. Written comments should be submitted before 5.00pm on Friday 3rd September 2004 to:

Office of Utility Regulation,
Suite B1 & B2,
Hirzel Court,
St. Peter Port,
Guernsey,
GY1 2NH.

Email: info@regutil.gg

All comments should be clearly marked **"Comments on Price Control for Telecommunications Services in Guernsey: Calculating Allowed Revenue and the Cost of Capital: Consultation Document".**

In line with the policy set out in Document OUR 04/01 – "Regulation in Guernsey; Revised Consultation Procedures", the DG intends to make responses to the consultation 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. The DG regrets that she 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

3.1. Legislative and Licensing Background

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 she considers necessary to carry out her functions. The Law specifically provides that such conditions can include (but are not limited to):

- conditions intended to prevent and control anti-competitive behaviour[3]; and

- conditions regulating the price 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 market[4].

In accordance with these provisions, both the "Fixed Telecommunications Licence" and the "Mobile Telecommunications Licence" include the following condition[5]:

> *"The DG 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*
>
> *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 she deems appropriate, provided the licensee has a dominant position in the relevant market.

In November 2001 the DG consulted on the question of dominance in telecommunications markets in Guernsey and concluded that Guernsey Telecoms (now C&WG) is dominant in the fixed network and services telecommunications markets and in the mobile network and services markets[6], and therefore the licence conditions relating to retail price control applied in both the fixed and mobile telecommunications licences held by that company.

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[3] Condition 5(1)(c) of the Telecommunications (Bailiwick of Guernsey) Law, 2001.
[4] Condition 5(1)(f) of the Telecommunications (Bailiwick of Guernsey) Law, 2001.
[5] Condition 31.2 of C&WG's Fixed Telecommunications Licence and 27.2 of the company's Mobile Telecommunications Licence.
[6] Document OUR 01/14: Decisions under the Telecommunications (Bailiwick of Guernsey) Law, 2001; Decision Notice and Report on the Consultation

The question of market dominance in the telecommunications sector is being consulted on in Consultation Document OUR 04/09.

3.2. The setting of the First Price Control

In November 2001, the OUR consulted on the need for, and the format of price control in the telecoms market[7], and published a report on that consultation in March 2002[8], along with a decision to impose price control on a range of fixed telecommunications services using the internationally recognised mechanism of incentive regulation.

The price control set an upper limit for the prices of a number of baskets of services provided by C&WG, allowing individual prices for services within those baskets to change upward or downward, within the overall constraint of the control. The control was initially set for the period from 1st April 2002 to 31st December 2004. This was later amended to be aligned with a change in the year-end of C&WG so as to facilitate reporting and compliance monitoring. The price control was therefore extended to 31st March 2005.

Interested parties are encouraged to read the original report on the consultation and the decision notice on the first control to provide a framework for the issues raised in this consultation.

[7] Document OUR 01/22: Proposals for the Price Regulation of Fixed Telecommunications Services; Consultation Paper

[8] Document OUR 02/11: Price Regulation of Fixed Telecommunications Services: Report on the Consultation and Decision Notice

4. Overview of Consultation Topics

4.1. Introduction

This consultation paper looks at two specific inputs into the setting of a price control:

- The calculation of allowed revenues and
- The setting of the cost of capital

Although separate, these issues are interlinked and it is useful to understand their role in the setting of the price control. Price controls are forward looking i.e. they control price levels over a number of years into the future from a specified starting point. As a first step it is therefore necessary to take a "snapshot" of the business, its costs and revenues and its current efficiency levels at an appropriate point in time.

For a variety of reasons, the snapshot will be unlikely to correspond to the statutory accounts of the regulated business, although those accounts can prove a useful starting point in the provision of information. The role of statutory accounts in setting a price control is discussed in more detail in section 5.4 and information requirements are considered in section 10. Reasons for this are, briefly;

- The snapshot will be of the part of the business to be price controlled only which is unlikely to correspond to the entire business;
- Even if the entire business is to be price controlled, various adjustments may be necessary to deal with the fact that statutory accounts are backward looking and the price control is forward looking.

Once appropriate base year operating costs and asset base values have been defined, it is then necessary to prepare a forward looking business plan which forecasts a range of key inputs over the lifespan of the control, including trends in underlying costs (operating costs and capital investment programme), potential efficiency gains, the effect of competition on the relevant market, the regulated firm's position within the market and the impact on vulnerable users amongst other things.

A rigorous economic and financial modelling exercise is then necessary to calculate the "allowed revenues" for the price controlled part of the regulated business over the lifetime of the control. The level of allowed revenue in turn determines the level of the price control (the "X" factor in the control). The objective is to set the control at a level such that if the regulated firm operates efficiently, it can expect to cover its costs, including earning a reasonable return on the capital employed (i.e. its cost of capital), over the period of the control.

The level of the control, in conjunction with the composition of the baskets, will then determine the upper limits on prices that may be charged over the lifetime of the control and the degree of flexibility that the regulated firm has in setting those prices.

4.2. Allowed Revenues

The first step in the application of any price control is to establish the allowed revenues of the price controlled business. This need not correspond to the regulated firm's business in its entirety. The allowed revenues are the revenues required over the period of the price control to cover;

- the price controlled business's efficient operating cost,

- the price controlled business's allowable capital expenditure profiles, and
- a return on some measure of the firm's asset base which is equivalent to that which would be received in a market with effective competition.

4.3. Cost of Capital

Capital, like many other commodities, is a scarce resource and from an economic perspective the cost of capital is in effect the "opportunity" cost of capital i.e. the value foregone represented by the next best alternative use. Simply put, this means that the shareholder can be expected to invest capital in the business if he believes that the return he will receive is at least equal to or better than the next best alternative – be that an alternative investment or a deposit vehicle. However, in most cases this is a complex thing to calculate as there are many sources of capital (debt or equity) and many alternative investments. Therefore financial markets are used as a proxy to assess the cost of capital because most firms use combinations of various types of capital be it equity or debt.

For the purposes of price control it is necessary to decide what is an appropriate cost of capital for the regulated business.

4.4. Conclusion

It is clear therefore that the two concepts are interlinked, as one of the elements of the allowed revenue is the asset base and the capital investment programme that will indicate changes to that asset base over the period of the control. The cost of capital is then the level of return that the shareholders are permitted to make on that calculated asset base.

Section 5 to 10 of this paper address the mechanism for calculating allowed revenue of the company for the price controlled business over the lifetime of the control. Sections 11 to 13 of this paper consider the cost of capital that should apply to a price control on telecommunications services provided by C&WG

5. Allowed Revenues: Introduction

5.1. Introduction

The assessment of the allowed revenue attributable to any regulated business is a fundamental step in the application of a price control, regardless of the structure any control may eventually take. Similarly to the cost of capital discussed previously, it represents one of the more technical aspects associated with producing a price control. This is due to the inter-relationship of the variables required to calculate allowed revenues over the period of the price control.

This section provides a brief explanation of the role that allowed revenues plays in informing a price control. Sections 6 to 9 consider the following key inputs associated with calculating allowed revenues:

- Assessing the opening asset valuation;
- Assessing the regulatory depreciation schedule;
- Assessing capital expenditure profiles; and
- Assessing operating cost profiles.

Section 10 considers the information required to set the allowed revenue. Questions are posed at the end of each section.

5.2. Role of Allowed Revenue in Price Control

Section 4.1 briefly describes the process for setting a price control and notes that the control will be forward looking over a specified period of time. To establish the appropriate level of the price control, the first step is to establish the allowed revenues of the price controlled business over that period. This in turn involves a decision on the appropriate starting point which will be crucial in determining the overall revenue requirements of the business. The starting point, and indeed the calculation of allowed revenues over time, need not correspond to the regulated firm's business in its entirety and will also be unlikely to correspond to the statutory accounts (see section 5.4 for more discussion on this issue).

The allowed revenues are the revenues required over the period of the price control to cover :

- the price controlled business's efficient operating cost,
- the price controlled business's allowable capital expenditure profiles, and
- a return on some measure of the firm's asset base which is equivalent to that which would be received in a market with effective competition.

5.3. Net Present Value Neutrality

The underlying principle used to derive allowed revenues is that of Net Present Value (NPV) neutrality – a phrase that will be used throughout this consultation. This means that the NPV of the future cash flows of the price controlled business over the period of the price control equals the opening asset value of the price controlled business. Consequently, subtracting the NPV of the future cash flows over the period of the price control from the initial asset base will lead to a value of zero. Where this is the case, it means that there is an absence of supra-normal profits and the position is the same as that which would be achieved in a competitive market.

Respondents who wish to explore this principle further to assist in replying to this consultation should contact the OUR who will provide a simplified example in spreadsheet form. Additional examples, corresponding to more complex situations can also be provided.

Regardless of the complexity of the process there are a number of consistently used inputs required for the calculation of allowable revenues, which comprise:

- The cost of capital;
- The regulatory opening asset value;
- The regulatory depreciation schedule;
- Capital expenditure; and
- Operational costs

The cost of capital is addressed in sections 5 to 10 inclusive. Each of the other inputs are considered in sections 11 to 13 below.

5.4. The Role of Statutory Accounts

The inputs to the estimation of allowable revenue need not necessarily correspond to the figures provided in the company's statutory or management accounts. This can be for a number of reasons, including but not limited to:

- the fact that not all products and services supplied need to be in the price control,
- the inclusion of efficiency factors,
- adjustments to the asset base to reflect differing costing conventions or the implications of changes in ownership, or
- adjustments to the regulatory depreciation schedules either by changing the asset lives or altering the depreciation profile to obtain a smooth pricing path over the period of the control.

Given this, it is often the case that a business plan submission which is based on historic cost information and which demonstrates the price controlled business's view of what its revenue requirements are, will be subject to various alterations. The primary reason for this is that price controls are forward looking and it is necessary to ensure that historic operational inefficiencies and un-economic investment decisions are extracted, as well as ensuring that the opening asset value is reasonable and reflects any ownership changes both with respect to the regulated business and that portion that is price controlled.

Therefore, although historic costs and the regulated company's accounting conventions are a useful starting point for data, in certain instances they may not be relevant for the purposes of setting price controls.

6. The Regulatory Opening Asset Value

6.1. Introduction

The opening asset value has a strong bearing on the allowable return across the period of the price control because in broad terms it is multiplied by the cost of capital to obtain the absolute level of the return allowable in a given year[9]. There is no generic approach to defining the opening asset value for regulatory purposes and it is generally dependent on the individual characteristics of each case. Of particular relevance to the methodological approach adopted in many industries, however, is whether the regulated company has been privatised, when it was privatised and the value at privatisation. Overall, there are various methodological approaches that can be used to assess the opening asset value, including the three considered in this section which are:

- The historic cost approach;
- The current cost approach; and
- The market value/sale price to asset ratio (MAR) approach.

6.2. The Historic Cost Approach

The historic cost approach uses the existing asset register based on the purchase costs of the assets. The primary advantage of this approach is that it simply requires the existing asset base to be rolled forward, taking into account the appropriate depreciation and capital expenditure schedules. Furthermore, the information is readily available and will generally match the statutory accounts.

The simplicity of this approach makes it relatively attractive in the initial stages of regulation in many jurisdictions as it allows the regime to gather initial momentum whilst more suitable measures of the opening asset base are developed. Indeed, the historic cost convention was utilised for the original price control adopted for Guernsey Telecom for this reason. Similarly, Oftel in the UK and the ODTR in Ireland also adopted a historic cost approach when the regulatory regime was first implemented.

Despite the simplicity of the approach, using the existing asset register based on historic costs has certain disadvantages. The main one is that the asset values using the historic cost convention are valued at their original purchase price, rather than the current cost of equivalent assets or some proxy of this at the base year of the price control. In circumstances where the price control is forward looking, technological changes are rapid and the historical asset purchase price may be considerably different on a current cost basis. If this is the case, a price control based on historic costs may not send the most appropriate pricing signals either to consumers or competitors.

It is the DG's view that the weaknesses inherent in the use of historic cost information make this an inappropriate mechanism to use.

[9] This represents a simplification of the actual process of obtaining the formula for calculating the return.

6.3. The Current Cost Approach

One way of addressing this difficulty is to use a current cost approach which costs the assets as their replacement value or some proxy to this. This approach was adopted by Oftel and ODTR and throughout Europe as the regulatory regime progressed and has also been used in smaller jurisdictions, with the Office of Utilities Regulation in Jamaica applying the principle to the regulation of Cable and Wireless Jamaica (C&WJ). It has also been used extensively in the regulation of the gas, electricity, water and rail industries.

The clear advantage of current costing is that it sends efficient and correct economic signals to competitors in relation to market entry as it reflects the costs of investing in the market at current rates. It is also fair to consumers, reflecting the true cost of providing the services.

There are two different methodological approaches that can be used to arrive at current cost asset valuations;

- Indexed historical cost, where historical costs are uplifted in line with an appropriate measure of general inflation; and
- Replacement cost which estimates the amount it would cost to replace existing assets with modern equivalents

There are various techniques that can be applied to the task of assessing replacement costs. All of these generally involve a full analysis of the applicable assets using sophisticated valuation techniques to assess the level of asset inflation for given groups or types of assets. The disadvantage of this approach is that it can be data intensive, time consuming, complex and highly subjective. This can be mitigated by concentrating on the most significant assets and revaluing asset groups rather than individual assets, thus trading off some precision against cost and effort.

However, the difficulties associated with this approach often results in more straightforward methodologies being adopted, such as a simple indexation approach which can be applied to all the relevant assets or the most significant assets. Indexation methodologies use some measure of general inflation such as RPI or some proxy of RPI, depending on the composition of the headline index for a particular jurisdiction. This is of importance in Guernsey because the headline RPI figures include housing costs. Asset inflation, with the exception of that associated with buildings that are directly owned by the regulated business, is likely to be more consistent with a general measure of inflation that includes consumer and producer goods but excludes housing costs. Consequently, in such cases it may be appropriate to exclude the impact of housing costs from any measure of general inflation used when applying an indexation approach.

Clearly, in considering what approach to adopt, there is a trade off between sophistication and cost. This is particularly important in an economy the scale of Guernsey's and the DG would anticipate that any regulated utility in Guernsey required to provide accounts on a current cost basis would take a pragmatic and cost effective view with respect to this.

The OUR considers that, in line with international practice, the current cost approach is more appropriate than the historic cost approach when producing regulatory

accounts and business plans for price control purposes as this sends more appropriate economic signals to the market.

The difficulty with using current cost information relates to the ability of the regulator to obtain accurate and reliable current cost accounting information from the incumbent on which to base decisions. C&WG has to date stated that, due to workload, timing, complexity and cost, it has been unable and unwilling to prepare regulatory accounts on a current cost basis, despite a direction from the OUR to do so.

Therefore the DG considers that it is appropriate to apply an alternative methodological approach to proxy current costs when considering the level of allowed revenues for the price controlled business. For the avoidance of doubt, this need not relate to the regulated business's own submission. Furthermore, the DG is also of the view that when adopting an indexation approach to produce current cost valuations, it would be appropriate to use a measure of general inflation that extracts elements associated with housing costs from the headline index, with the only exception being buildings owned by the regulated company

6.4. The MAR Approach

The market value/sale price to asset ratio approach (MAR) only applies to regulated industries that have been privatised. It involves calculating the MAR by dividing the market value, or sale price (essentially how much was paid for the assets of the company net of cash balances received), by the book value of its assets at or near the point of privatisation. This approach can be implemented by one of two means either:

- The value of the assets bought prior to privatisation should be valued at the sale price at the point at which they were privatised; or
- The rate of return on assets bought prior to privatisation should be adjusted by the MAR.

Either of these methodologies will produce the same return for assets prior to privatisation.

The MAR approach has been widely used when the sale price at privatisation has been substantially below the book value of the assets, measured either on a current or historic cost basis (current costs are preferred). In the UK the approach has been used in the gas, water, electricity and rail industries. Indeed, the only public utilities privatised in the UK at a value near its book value are British Telecom and British Airport Authorities[10] and it was subsequently not necessary to consider adopting the approach in these instances.

The reason for adopting this approach in circumstances where the sale price is substantially less than the book value of the assets is to avoid shareholders obtaining windfall gains at the expense of consumers. If this approach is not utilised in these circumstances, a rate of return would be applied to a measure of the book value rather

[10] In general the market value or sale price of telecommunications companies has been similar to the book value of the asset base. The distinguishing feature of telecommunications companies and company's such as BAA is that relative to other UK utilities their assets are short lived. This meant that at the point of privatisation there was not the same anticipation that there would be a long period where prices would be maintained at the relatively low pre-privatisation level, as occurred with other UK utilities because of the long asset lives associated with these industries.

than the purchase price. This would result in shareholders gaining a return higher than that implied by their actual investment. Moreover, other things being equal, this incremental rise in the return would have to be funded via higher prices which would have to be paid by consumers.

This is not the case if a return is only allocated to the ***actual*** investment by shareholders. Indeed, the critical implication of this approach is that the allowable return on the assets existing at privatisation reflects the amount shareholders paid for the assets rather than any book value attached to the assets. Consequently, this approach is equitable in the sense that the gains of privatisation are not disproportionally skewed toward the new owner. A further aspect of the MAR approach is that it does not distort future investment incentives of the new owner as a full rate of return is applied to all investment after the point of privatisation.

For a given asset base the MAR approach can be adopted either on a historic or current cost basis without violating the principle of NPV neutrality. However, as mentioned previously the use of a current cost methodology will potentially improve the pricing signals available in the market place, both from the consumer and new entrant perspective. Indeed, when a current cost approach is adopted as the regulatory asset value is rolled forward, it is possible to rollover shareholders investment in real terms as the purchase price can be index linked to some measure of general or asset inflation. Holding losses or gains[11] can also be included in the allowed revenue calculations if applicable to maintain NPV neutrality. This provides the market with an indication of the projected movements in real prices, which is difficult to achieve when utilising a regulatory asset value based on unadjusted historic costs.

The DG is of the view that if a regulated utility is privatised at a purchase price paid, net of cash balances received, that is substantially lower than the asset values either on an historic or current cost basis, then in order to ensure that any future price controls result in a fair distribution of gains between shareholders and Guernsey's consumers, it would be appropriate to adopt the MAR approach to the opening asset value.

Furthermore, if this approach is adopted the DG is also of the view that it would be appropriate to apply a uniform MAR, rather than attempting to derive separate MAR's for certain aspects of the business. Indeed, the DG considers that a 'focused' MAR approach would be arbitrary unless the sale price for the regulated utility specifically allocated values to various aspects of the business at the point of purchase.

[11] Holding losses or gains occur when the actual level of asset inflation does not equal that associated with the general level of inflation. If asset inflation is less than general inflation, the real value of the assets bought by shareholders is being eroded over time and holding losses occur and vice versa if asset inflation is greater than the level of general inflation. In order to account for this the level of holding losses are included when calculating allowed revenues, with holding gains subtracted when calculating allowed revenue.

6.5. Question Regarding the Opening Asset Value

Q1: *Do you agree that the MAR approach is an appropriate methodology to use when deriving the opening asset base for a regulated utility that has been privatised at a price lower than the value of its assets? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q2: *On the basis that a MAR approach is adopted, do you agree that a uniform MAR should be utilised across the assets of the business? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q3: *Regardless of the adoption of a MAR approach, do you consider it appropriate to include some form of indexation and/or holding losses/gains if appropriate when using the current cost convention? If not, why, and what alternative approach would you propose and for what reasons?*

Q4: *Regardless of the adoption of a MAR approach, do you consider it appropriate when adopting an indexation approach to current costs to exclude from the inflation rate used components associated with housing costs, for assets other than buildings? If not, why, and what alternative approach do you consider appropriate and for what reasons?*

Q5: *Regardless of the adoption of a MAR approach, if the regulated business does not provide a suitable asset valuation based on current costs, do you consider it appropriate for the DG to make such adjustments as are feasible based on other available information with respect the underlying valuation of the assets? If not, why, and what alternative approach do you consider appropriate and for what reasons?*

7. Depreciation

7.1. Introduction

Depreciation has a direct impact on the allowed revenues which will affect both prices and cash flow. A depreciation charge that is excessive can lead to consumers paying higher than necessary prices, with the additional incremental cash flows being distributed to the shareholders of the regulated firm. Thus, from a regulatory perspective it is necessary to ensure that the depreciation charge allocated to the regulated business is appropriate.

With this in mind, it is also important to note that the annual level of the depreciation charge allocated for price control purposes need not be that used in the regulated company's statutory accounts. The approach taken to calculating depreciation will, to some extent, depend upon the methodological approach taken to defining the initial asset value of the regulated business and how this is rolled over. Furthermore, it is often the case that regulatory depreciation schedules are adjusted to ensure a smooth pricing profile going forward. This avoids volatile price changes, either upward or downward, to end customers, and provides greater certainty for consumers, the regulated firm and new entrants.

Provided the principle of NPV neutrality is maintained, adjusting the regulatory depreciation profile in this way does not affect or disadvantage shareholders as the shareholders should be indifferent between two options with differing depreciation schedules as both conform to NPV neutrality requirement.[12]

7.2. Depreciation on an Historic Cost Basis

Overall, if assets are to be valued on a historic cost basis, then it may be appropriate to maintain the depreciation schedules implied by the company's statutory accounting policies and roll over the asset base with respect to the incremental impact of capital expenditure and the depreciation charge.

Despite this, there are some potential problems that are associated with using historic costs. First, it is necessary to ascertain that there have been no inappropriate adjustments to the asset base and second, that the asset lives themselves are appropriate.

It is common in the preparation of statutory accounts based on the historic cost convention, to adopt an overly prudent approach with respect to asset lives. This can result in the asset life for statutory accounting purposes being considerably shorter than the true useful life of the asset. This causes the depreciation charges to be 'front-loaded' because the total charge is spread over a number of years which is less than the actual life of the asset. The effect of this would be that allowed revenues would be higher than necessary and, other things being equal, prices that are inappropriately high.

[12] Although this is generally the case, if the management of the firm has put the company in the position of having an excessively high level of gearing they often prefer greater allowed revenues in the near term in order to cover near term interest payments. This does not relate to the principle of NPV neutrality but to whether the company has an insufficiently flexible capital structure.

7.3. Depreciation on a Current Cost Basis

When using current cost accounting, in addition to considering the appropriate asset lives, the depreciation charges must also be adjusted to reflect the alterations required to obtain the starting regulatory asset value. Depreciation schedules for the remaining useful life of the assets must be calculated using a suitable depreciation policy and thereafter the asset base can be rolled forward with respect to the appropriately indexed capital expenditure and depreciation schedules.

7.4. Depreciation Using a MAR Approach

If a MAR approach is adopted to derive the initial asset value of the regulated business, it can be used in tandem with either a current or historic cost approach to depreciation. The choice will simply depend on whether the opening value of the regulated business is based on current or historic costs. As mentioned previously, although the use of historic or current costs for a given asset base will not impact on the principle of NPV neutrality, a current cost approach can provide the market place with improved pricing signals with respect to the trend in real prices.

Of particular significance when adopting a MAR approach is the implications this can have for the overall depreciation charge allocated to the regulated business and in particular, what depreciation charge should be applied to assets bought prior to privatisation. If the sale price paid, net of cash received, is likely to be significantly less than the book value of the assets at the point of privatisation, it may not be appropriate to allow the full depreciation charge for assets purchased prior to privatisation to flow through to the overall depreciation schedule. If this were the case, it would effectively result in consumers paying a depreciation charge relating to the book value, rather than a depreciation charge based on the actual value placed on the assets by the purchaser at the point of privatisation. Indeed, other things equal, this would result in prices being higher than necessary and gains being redistributed to shareholders

Given this, the DG is of the view that if a MAR approach is utilised for the starting asset value, the depreciation charge relating to the assets purchased prior to privatisation should be uniformly adjusted downwards by the MAR, with an unadjusted depreciation charge allocated to all investment undertaken after privatisation. This will ensure that future investment incentives are not distorted.

7.5. Questions Regarding Depreciation

Q6: *If a MAR adjustment approach is utilised, do you agree that depreciation schedules for assets purchased prior to the point of privatisation should be adjusted by the MAR? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q7: *If a MAR adjustment approach is utilised, do you agree that a uniform MAR should be adopted across the depreciation schedules? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q8: *Regardless of whether a MAR adjustment approach is utilised, do you consider it appropriate to apply some form of indexation to the relevant depreciation schedules*

when utilising the current cost convention? If not, why, and what alternative approach would you propose and for what reasons?

Q9: *Regardless of whether a MAR adjustment process is utilised, if current cost estimates have not been provided by the regulated business, do you consider it appropriate for the Direction General to make such adjustments as are feasible based on other available information with respect to the underlying depreciation charges associated with the asset base? If not, why, and what alternative approach would you propose and for what reasons?*

8. Capital Expenditure

8.1. Introduction

The major reasons for capital expenditure are:

- to maintain the existing infrastructure;
- to improve and/or develop the infrastructure; and/or
- to build new infrastructure.

The overall purpose of enhancements and new infrastructure investment is to develop the business so that a greater number of value-added products can be supplied to the market that improve the regulated business's profitability and efficiency. In the telecoms sector this benefits the market as a whole because new entrants gain cost oriented access to the infrastructure of the incumbent and can also develop and provide value added services. In turn this spurs economic growth in general, benefiting the wider economy.

Other things being equal, the greater the level of allowable capital expenditure for a regulated business, the higher the allowed revenues and price levels will be.

A key concern therefore is to strike an appropriate balance between ensuring that the regulated business can recover sufficient revenue to fund efficient and necessary capital investment on the one hand, and preventing "gold plating" – unnecessarily high or inefficient investment - on the other.

8.2. The Setting of Capital Allowances

Attaining a balance between the overarching economic needs of a jurisdiction and providing an environment that encourages investment, whilst also ensuring that the incumbent is sufficiently committed to the investment plans submitted, is challenging.

A key concern is that an investment programme will be included in the forecast business plan which is unrealistic and to which the incumbent may not in fact be committed. This leads to unnecessary price increases, with the gains being transferred to the regulated firm's shareholders at the expense of customers, when the investment is not made. Various practical and theoretical approaches have been adopted in an attempt to address this problem.

One approach has been to allow the incumbent a capital allowance, but not to require commitment to specific projects on the condition that any under-spend will be clawed back either on a yearly basis or in subsequent reviews. This approach, however, is often self defeating as the regulated firm is encouraged to use the entire allowance regardless of whether it is necessary to do so as this bolsters the asset base upon which it earns a return. This is equivalent to 'gold plating' and can lead to an inefficient allocation of resources and can, to some extent, undermine a price control regime based on incentive regulation.

An alternative is to produce a system of incentive regulation that results in price controls becoming gradually looser if certain targeted investments of strategic importance to the economy are completed. This requires setting a price control formula that has clear observable output targets which can be measured and provide

an indication of the extent to which capital expenditure has been focused on the key areas and produced tangible results. There are, however, a number of disadvantages to this approach if the regulated business is unwilling to commit to its capital expenditure proposals targeted at the designated areas.

Overall, the setting of a capital allowance which influences the allowable revenue is always going to provide an incentive for the regulated firm to inflate the capital costs associated with target investments and thereby potentially gain both from having a higher than necessary capital allowance and also from the fact that the price control will be loosened inappropriately when certain investment milestones are achieved. This is because initially a higher than appropriate capital allowance may have been set, resulting in an insufficiently tight price control in the first instance. There is also the possibility that targeting investment in this manner can distort the market process and hinder the development of effective competition.

Notwithstanding the difficulties in setting the capital allowance, it is an unavoidable part of the price control process and an appropriate solution must be put in place that takes into account the economic structure, future investment requirements and quality of existing infrastructure in the Bailiwick. This is particularly important given the scale of Guernsey's economy, as well as the importance of ensuring competitive pricing in order to maintain and develop the Island's competitive advantage, particularly in the finance and e-commerce sectors.

Therefore the DG considers that any submitted capital expenditure plans should be fully justified and based upon the rigorous use of standard investment appraisal techniques. The DG also considers that it is essential that there be a formal commitment to the investment programme so as to ensure that the capital programme put forward by the operator is in fact put in place. To do this it will be necessary to derive a suitable set of output metrics from which to measure investment performance that are clear, transparent and not open to manipulation and include the commitments into the incumbent's licence.

8.3. Questions Regarding Capital Expenditure

Q10: *Do you agree that it is appropriate, given the scale of Guernsey's economy and the need to ensure that future capital expenditure provides the economy with suitable strategic benefits, that it is necessary to ensure that capital expenditure proposals are justified, committed to and incorporated into the relevant licence conditions? If not, why, and what alternative proposals would you consider more appropriate and for what reasons?*

9. Operating Costs

9.1. Introduction

When constructing a forward looking price control, it is necessary to evaluate the regulated business's operating costs from the perspective of efficient operation rather than from the current level of operating costs implied by the company's statutory accounts. This is to ensure that the statutory accounts do not contain inefficiencies from historic operating practices that are inappropriate from a forward looking perspective. Indeed, allowing any potentially inefficient practices to be projected forward may result in revenue requirements that are greater than necessary and higher than required prices.

9.2. The Setting of Operating Costs

Given this, it is necessary for any regulated business to provide a robust justification not only of its base operating costs but also its projected operating costs and why these are efficient. Indeed, if a regulated firm cannot provide a robust, logical, transparent and fully justified explanation as to why certain cost profiles are efficient, there is no objective reason why they should be accepted as reasonable by the DG. Moreover, regardless of the reasoning provided by the regulated business, it is necessary and prudent to compare operating cost levels with other operators when assessing the efficiency of the regulated business's operating cost base. Some form of ratio analysis, yardstick competition, econometric modelling or frontier analysis[13] is often used to undertake this analysis, involving comparing the regulated business with existing firms in comparable industries. Alternatively, it may be appropriate to use theoretical 'model' companies to provide a benchmark from which the performance of the regulated firm can be assessed[14].

Overall, not only is it the regulated firm's responsibility to provide a rigorous justification of their base and projected operating costs, it is in their interests to do so. Otherwise it will be necessary to make greater use of additional information in informing the DG's view of the efficiency of the regulated business's operating costs.

[13] The objective of all these techniques is to obtain a gauge of the relative efficiency of the incumbent with respect to comparable or similar firms. This does not imply that the comparators need to be identical or that differences in size and structure cannot be accounted for to reduce scale and scope effects. Ratio analysis is a simple process of calculating various distinct one dimensional ratios to assess the comparative efficiency of an incumbent via comparing ratios across companies. Frontier analysis, such as Data Envelopment Analysis (DEA), is, to some extent, a more complex multi-dimensional form of this approach which utilises complex mathematical programming techniques to calculate efficiency frontiers across a set of firms and to thereafter measure how 'close' the incumbent is to the frontier as this provides an indication of the level of inefficiency. This technique is often complemented with sophisticated econometric analysis. Under yardstick competition the prices that the incumbent can charge are effectively determined by the efficient cost base of similar comparable firms. Under this approach the incumbent is expected to achieve the same level of productivity as the comparator companies.

[14] The model companies approach has been used in various sectors and countries and particularly in Spain's electricity sector and Chile's water sector. The general approach is for the regulatory authority to provide a benchmark with which they compare the performance of the regulated companies, taking into account technology, asset age and other reasonable operating conditions.

9.3. Questions Relating to Operational Costs

Q11: *Do you agree that it is necessary for the regulated business to provide a robust, logical, transparent and fully justified explanation regarding the efficiency of its base year and projected operating costs? If not, why, and for what reasons?*

Q12: *Do you agree that in order to form a conclusion regarding the efficiency of the operating cost proposals put forward by the regulated business, it is necessary and prudent for the DG to compare the regulated firm's operating cost levels with other operators? If not, why, and what alternatives would you propose and for what reasons?*

10. Information Requirements

The overarching objective of assessing allowed revenues for the purposes of price control is to deliver a fair distribution of gains between shareholders and customers. To undertake this process the regulated business has to provide a sufficient level of information in the manner, format and detail required by the DG. If this information is not available, then an information asymmetry will exist and there is an incentive for the regulated firm to inflate its costs, capital expenditure profiles, opening asset base and rate of return in order to increase allowed revenues and thereby shareholder returns at the expense of consumers.

Regardless of any previous difficulties that any regulated incumbent has experienced in the provision of reliable, accurate and verifiable information for regulatory purposes, the DG would expect that the information supplied as part of the price control process fulfils the DG's needs and complies with the regulated incumbent's license requirements in general, including (but not limited to) conditions 4.1 and 17.12 of the Fixed Telecommunications Licence Conditions and conditions 4.1 and 16.12 of the Mobile Telecommunications Licence Conditions[15].

Furthermore, as previously discussed, for the purposes of structuring a price control, the primary concern is in calculating the allowed revenues for those products that are to be price controlled and not necessarily for the regulated business in its entirety.

Ideally, this will consist of those products where the DG considers there is merit in controlling tariffs due to market dominance, for social welfare purposes or for policy reasons such as ensuring the universal service. As such, not only is it the responsibility of the regulated incumbent to provide reliable, verifiable and accurate information that is sufficiently disaggregated and produced in a manner that meets the regulators needs, it is also in the company's interests to do so.

Without the provision of such information it may be necessary for the DG to employ a broad control that cannot take into account specific product related issues. It will also be necessary for the DG to utilise other information sources to a higher degree than may have otherwise been the case and to make informed judgements where the regulated firm has failed or is unwilling to provide the necessary information.

[15] Condition 4.1 of both the fixed and mobile telecommunications licence conditions states that "For the purpose of monitoring the Licensee's compliance with the Conditions and the Laws, the Licensee shall provide to the Director General in the manner and at the times required by the Director General, any documents, accounts, returns, estimates, reports or other information including but not limited to the documents, accounts, returns, estimates, reports and other information specified in this Licence."
Condition 17.12 of the fixed telecommunications license and 16.12 of the mobile telecommunications licence state that "The Licensee shall ensure the accuracy and reliability of any systems, equipment, data or procedures which the Licensee uses to measure or to track the provision of Licensed Telecommunications Services or for the calculation of related charges."

11. Cost of Capital: Introduction

11.1. Introduction

Capital is like any other scarce resource where demand exceeds supply, meaning that companies must compete for capital from shareholders (in the form of equity or retained profit) or in the form of debt. For regulatory purposes, the cost of capital is in effect an "opportunity" cost. In economic terms the opportunity cost of a resource is the value that is foregone by the best alternative option. In practice, the best alternative option depends on the range of sources of capital from which a particular firm opts to chose (the "choice set"). Consequently, if a business consciously restricts its choice set for various reasons then the opportunity cost can be interpreted as relating to the set of alternatives considered, rather than the global set faced.

In general, the majority of companies adopt a wide choice set and obtain their capital from various sources including different types of debt and equity, as well as retained profits. In such instances, the cost of capital is considered to be the level of return required by the financial markets in order to provide capital to a firm. For a given level of return, rational investors will select the investment with the minimum risk; also for a given level of risk rational investors will select the project that maximises returns. Risk, in its simplest form, is caused by the possibility of different outcomes, which results in uncertainty. With regard to a specific business it is the risk element that cannot be diversified which is of significance.

By contrast, in other instances companies may choose to restrict their choice set for particular company specific reasons. For instance, rather than become involved in complex forms of financing, a company can place their retained profits in deposit accounts or provide them as loans rather than investing them in the business. In these circumstances the decision choice for that company has been deliberately simplified, with the cost of capital effectively being the interest received on a deposit or that received on the loan provided.

Given the wide range of uses to which capital can be put in modern markets, a sophisticated body of analysis has developed on methodologies for calculating the opportunity cost of capital when faced with a large choice of various alternative sources of capital. These methodologies rely on a large number of data inputs and assumptions that are designed to consider, inter alia, the economic conditions that prevail, the industry sector concerned and the company's position in that sector.

11.2. Setting of Cost of Capital for GT in March 2002

When considering the cost of capital that should apply to Guernsey Telecoms Ltd ("GT") in March 2002, the OUR initially turned to the internationally accepted methodology of setting the cost of capital using the Weighted Average Cost of Capital ("WACC") approach. This is described in considerable detail later in this paper.

However, in effect, because the company was a States owned trading company and the fact that GT was not listed nor involved in the wider capital markets, a number of the data inputs were in fact absent or could not be calculated. In effect therefore the OUR set the cost of capital for GT based on the company's observed behaviour.

As a State owned enterprise funding its activities entirely through cash which was held on deposit by the States of Guernsey, GT had chosen to restrict its choice set. Effectively, the opportunity cost of capital to the States' as GT's shareholder was the interest that could be earned on States' Treasury Deposits. In other words, the interest that the company could receive from the States was value that was foregone if GT used the funds instead to invest in capital expenditure in the company. This approach resulted in a cost of capital of 5%.

12. Mechanisms for Calculating Cost of Capital.

At this stage, the OUR is revisiting the appropriate cost of capital for C&WG, taking into account a range of factors. A key issue that will affect the final decision is the fact that the cost of capital was initially set in 2002 before GT was bought by C&WG, and at a time when the company was operating as a wholly States owned entity. The OUR will consider whether the change in ownership has resulted in a change in behaviour that would warrant a change in the means of calculating the cost of capital. In addition, the OUR will consider whether the changed status of the company improves the range of inputs that may be available to use the more complex formulae that are generally used for this purpose.

12.1. Observed Behaviour

The approach to setting the cost of capital described above in the case of GT can be appropriate where the regulated firm has restricted its choice set and it is transparent as to what that choice set is. This was the case when GT was a States owned entity.

This approach could continue to be useful if there is reasonable evidence that C&WG were continuing to restrict its choice set and was adopting a type of behaviour in relation to its capital resources that is similar to that of the former States owned monopoly, i.e. if it is simply placing its capital resources on deposit at an identifiable interest rate.

It might also be more appropriate to use this approach where there are no data for the company and market with which to populate the WACC and Capital Asset Pricing Model ("CAPM") formulae.

In the current context, C&WG's two most recent sets of Reports and Financial Statements[16] show that the company has made substantial loans to fellow group companies at a specified interest rate. This interest rate is effectively the value that the company would forego were it to take those funds and invest them into the local Guernsey telecommunications market.

The terms of these loans may represent a clear *actual* measure of the economic opportunity cost of capital for C&WG rather than an estimate derived from the WACC formula, as it is based on the actual behaviour of the company and demonstrates the value foregone in not investing the funds within the Bailiwick.

The further advantage of this approach is that it would negate the necessity to estimate or proxy a number of inputs into the more complex WACC formula, which is the alternative mechanism considered in this paper.

Q13: *Do you consider the terms of the loan to fellow group companies to represent the economic opportunity cost of capital for C&WG? Please provide your reasoning for your position.*

[16] For the year ended 31 March 2004 and the 15 months to 31 March 2003

12.2. WACC and CAPM

The WACC is the most commonly used approach for estimating a company's opportunity cost of capital and the CAPM is the most widely accepted approach in estimating a company's cost of equity. These two methodologies, whilst conceptually relatively simple, are technically complex and require a number of company specific and market specific factors to be input in to the WACC and CAPM formulae.

The WACC is the weighted average of the cost of equity and the cost of debt expressed as follows:

$$WACC = g * Rd + (1-g) * Re$$

where:

- g = debt / (debt and equity)
- Rd= cost of debt
- Re = cost of equity

To calculate the WACC formula therefore requires the cost of equity, cost of debt, and capital structures as inputs. To derive the pre-tax cost of capital also requires tax rates as an input to the WACC formula.

The premise behind CAPM is that investors are only rewarded for carrying non-diversifiable risk (also known as "systematic" or "market risk"). The rationale behind this is that firm-specific risk (also known as idiosyncratic or non-systematic risk) is diversifiable, i.e. it can be costlessly eliminated by spreading the funds over a large number of investments. CAPM describes the equilibrium expected return on an asset as a function of its systematic risk.

Full descriptions of the WACC and CAPM which have been used for estimating a company's cost of capital are provided in publicly available documents on other regulators' websites and respondents may wish to refer to these for background information[17].

The OUR considers that this approach to calculating the cost of capital of a company is well established and there is ample precedent for it. However, it is also noted that there are a number of variables in the complex calculation that are absent for C&WG or that have to be estimated. C&WG has submitted a detailed proposal for the setting of its cost of capital based on the above approach and a detailed examination of these is in section 13 below with specific questions on the proposals.

Respondents are invited to review that section and consider the comments in that section to inform their answer to question 14 below.

[17] The following two documents by Oftel and the Civil Aviation Authority in particular provide good introductions to the topic;
Hwww.ofcom.org.uk/static/archive/oftel/publications/1995_98/pricing/pri1997/contents.htmH and Hwww.caa.co.uk/erg/ergdocs/annexcc.pdfH. A more detailed discussion of the cost of capital prepared by Smithers & Co on behalf of the UK economic regulators and the Office of Fair Trading is available at Hwww.ofgem.gov.uk/temp/ofgem/cache/cmsattach/2012_jointregscoc.pdfH

***Q14**. Do you consider the WACC methodology as the most appropriate mechanism for setting the cost of capital for C&WG? Please provide your reasoning for your position.*

12.3. Applying C&WG's cost of capital within a price control

Irrespective of the level of C&WG's cost of capital for regulatory purposes, it is necessary to consider how this key input is used to inform any future price control decision. There are a number of issues that affect this decision.

12.3.1. Mobile and Fixed Businesses

C&WG's proposals in relation to its cost of capital are for "the appropriate cost of capital for a telecoms company operating a portfolio of services (including fixed line *and mobile operations*) in Guernsey.[18]" (emphasis added). Therefore C&WG's proposed pre tax nominal cost of capital covers both its mobile and fixed businesses and is in effect a weighted average of the cost of capital for the mobile business and the cost of capital for the fixed business.

However, it is common practice to determine separate costs of capital for fixed telecoms businesses and mobile telecoms business. This is because mobile and fixed businesses are often considered to have different risk profiles, with mobile usually having a higher risk profile.

The existing price control currently applies only to the fixed telecommunications business. The OUR is, however, currently consulting on the scope of any future price control for C&WG (see OUR 04/10) including whether or not a future price control should be extended to include C&WG's mobile business.

If the OUR decides to exclude mobile services from any future price control, it would seem appropriate to only take into account the cost of capital for the fixed business and remove the mobile element of the WACC if the WACC is being adopted. This should have the effect of reducing the cost of capital for the fixed business. Conversely, if the mobile business were to be price controlled the OUR could consider setting a separate cost of capital for the mobile business. However, as C&WG operates as a single integrated entity, this might not be simple. In this case the blended cost of capital rate covering the mobile and fixed businesses could be used.

***Q15**. Do you agree that if the price control applies only to the fixed business then a cost of capital should be calculated that excludes the mobile business? If not please explain your reasons.*

***Q16:** If price control were to apply to fixed and mobile services do you consider that*

- *The blended mobile/fixed cost of capital should be used, or*
- *A separate cost of capital should be calculated for the mobile business.*

Please explain your reasoning for your position.

[18] C&WG paper "Weighted Average Cost of Capital for C&WG Prepared for OUR May 2004"

12.3.2. Appropriate Asset Base

Another issue is closely related to setting the appropriate asset base to which the cost of capital will be applied. The issue of the opening asset value and capital investment is addressed in more detail in the context of the allowed revenue in sections 6 and 8 respectively.

However, for the purposes of completeness, it should be noted that the OUR could consider setting two values for the cost of capital, one which would apply to the historical asset base acquired by C&WG at privatisation and the other applying to all investment since privatisation and future investment included within C&WG's business plan.

This may involve, for example, setting the cost of capital at 5% for the asset base at privatisation and using another figure following this consultation for investment since privatisation and within the C&WG tariff submission to the OUR.

It could be said that the advantage of this is that it rewards past investment at the cost of capital that applied when that investment was made. On the assumption that the behaviour of the company has changed since privatisation, it would also reward all investment since privatisation at the post privatisation rate. Thus if the cost of capital is sufficient this should, if the company acts in a rational economic fashion, provide an appropriate incentive for future investment.

This approach could be considered depending on the methodology adopted to calculate the appropriate regulatory asset base. Alternatively, this approach and that adopted for the asset base could be used in tandem. For example, the asset base could be adjusted by the MAR and thereafter the pre-privatisation cost of capital applied to that portion of the asset base that existed prior to privatisation.

Q17: *Do you consider it appropriate to apply separate cost of capital to investment pre and post privatisation?*

12.4. Conclusion

This section has considered at a high level, alternative mechanisms for setting the cost of capital for C&WG in the context of the price control. However, before responding to the questions in this paper, respondents may wish to consider section 13 which follows. Section 13 describes the WACC formula in some detail, sets out C&WG's proposed inputs and provides some commentary on the proposals.

13. Cost of Capital: C&WG Proposals

13.1. Introduction

As noted above, for the first price control when GT was a States owned trading company, the OUR assumed a cost of capital of 5%, based on the information provided by GT regarding the behaviour of the company as it then was. In October 2002 C&WG provided a detailed submission to the OUR requesting a significant increase in the rate of the company's cost of capital. In May 2004 C&WG resubmitted a revised proposal which is being considered in this section. C&WG is proposing a WACC of 12.6% (nominal pre tax) for regulatory purposes.

C&WG's proposals submitted to the OUR in May 2004 include the values that is suggests should be used in the WACC formula, a supporting rationale for those values and goes on to calculate three WACCs based on three scenarios – "low", "medium" and "high". The sections below summarise C&WG's proposals and provides some commentary by OUR on each assumption to assist respondents in forming their views.

To briefly recap, the WACC is the weighted average of the cost of equity and the cost of debt expressed as follows:

$$WACC = g * Rd + (1-g) * Re$$

where:

- g = debt / debt and equity
- Rd= cost of debt
- Re = cost of equity

To calculate the WACC formula therefore requires the cost of equity, cost of debt, and capital structures as inputs. To derive the pre-tax cost of capital also requires tax rates as an input to the WACC formula

The cost of equity is usually derived using the CAPM framework. The key premise behind CAPM is that investors are only rewarded for carrying non-diversifiable risk (also known as "systematic" or "market risk"). The rationale behind this is that firm-specific risk (also known as idiosyncratic or non-systematic risk) is diversifiable, i.e. it can be costlessly eliminated by spreading the funds over a large number of investments.

CAPM describes the equilibrium expected return on an asset as a function of its risk. In its basic form, CAPM states that:

$$R_e = R_f + \beta (R_m - R_f)$$

Where

R_e = the anticipated return on equity

R_f = the anticipated return available from risk free investment

R_m = the anticipated returns available from risky investments in the market generally

β = the anticipated correlation between movements in the share price of the company concerned compared with movements in the market generally, a measure of its systematic risk.

C&WG has submitted a detailed proposal with inputs for each of the above variables to arrive at a WACC that the company considers appropriate. The OUR would like to thank C&WG for its detailed proposals which are described below.

13.2. Cost of Equity

13.2.1. Risk Free Rate - (R_f)

The C&WG proposals state that the appropriate risk free rate is the return that can be earned on government securities that generally carry a negligible risk of default. C&WG notes that investors in Guernsey have access to UK government bonds and C&WG has therefore assumed the risk free rate in Guernsey will be the same as that in the UK.

C&WG considers that the five year gilt rate is the appropriate rate to use as an input to the cost of equity. The average risk free rate for April 2004, as published by the Bank of England was 4.81%. C&WG proposes to use this figure as the risk free rate in its low and medium scenarios, whilst recognising that expectations of future interest rate rises may lead to further increases in the risk free rate and have suggested a figure of 4.93%[19] for the high scenario.

OUR Comments

C&WG uses monthly average rates in the low and medium scenarios and the latest point estimate for the high scenario. Although the current yield is theoretically the best estimate of the future risk free rate, regulators have often used averages to reduce volatility in the resulting cost of capital, particularly when estimating the real risk free rate, with the underlying assumption that the real risk free rate is mean reverting[20].

The DG notes that Ofcom recently revised its estimate of the risk free rate from 5.0% to 4.75%[21]. Ofcom believed the higher figure to be based on the high nominal gilt rates observed in November 2003 and believed the period for the beginning of January 2004 to the end of April 2004 was both sufficiently up to date and represented a long enough sample period to avoid taking account of very short run fluctuations. Ofcom chose to round the average for this period from 4.65% to 4.75%. The average nominal gilt rate for the period 1 January 2004 to the end of May 2004 was 4.71%.

[19] risk free rate as at 7th May 2004.
[20] i.e despite short tern fluctuations in the rate, over time it reverts back to it long term average
[21] Ofcom June 2004 Wholesale Mobile Voice Call Termination Statement.

In another recent study, this time with a US perspective, the Public Utilities Commission[22] in the Bahamas estimated the nominal risk free rate to be between 4.5% to 5.5%, based on the average T bond yields for 10 year and 25 year maturities.

While all of the above rates demonstrate results in a relatively small range, the OUR is conscious that a small variation can have a significant overall impact on the final cost of capital and consequently on prices. Therefore comments on all aspects of the risk free rate are invited to assist OUR in arriving at a view on this input.

***Q18**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Risk free rate.*

13.2.2. Equity Risk Premium – (R_m-R_f)

C&WG believes that equity markets are international and with most telecommunications companies (including Cable & Wireless plc) being international, it is appropriate to consider the returns in markets other than the UK.

C&WG considers that the appropriate equity risk premium ("ERP") for Guernsey is 5% and has used this in both the low and medium WACC scenarios as this is the rate used by the former UK Telecommunications Regulator OFTEL in its recent Calls to Mobile Enquiry[23]. C&WG believes that the 5% estimate may be a conservative estimate as the UK Mobile Operators argued for rates that were higher than 5%. C&WG further notes that there are a number of published studies that present a rate above the 5% used by Oftel, for example in a recent world ERP undertaken by the London Business School study, the risk premium was calculated to be 5.9% for the UK[24]. Consequently C&WG has used this latter rate in its high scenario.

OUR Comments

Whilst C&WG notes that the there is merit in assessing the ERP based on global experience, the company states that the ERP should be based on the UK market (i.e. local to the investors).

In support of the argument that the ERP for the UK may be 5.9%, C&WG quotes the work of Dimson, Marsh and Staunton. However C&WG quotes selectively and the OUR considers that this may be misleading for a number of reasons:

- The ERP is calculated with respect to bills, whereas the cost of capital is being calculated using bonds as the "risk free rate" benchmark. As noted above, the measurement of the ERP should be consistent with the risk free rate used in the WACC calculation. The corresponding figure for the ERP with respect to bonds quoted is 5.1%[25];
- The ERP is for the UK only, whereas the authors take a global view of the ERP arguing that this gives a better view of prospective ERP; and

[22] Public Consultation – Price Control of Bahamas Telecommunications Company July 2003
[23] http://www.ofcom.org.uk/consultations/past/mobile_call_termination/mct_consultation/annexe.pdf
[24] Global Evidence on the Equity Risk Premium: Elroy Dimson, Paul Marsh and Mike Staunton, London Business School
[25] Global Evidence on the Equity Risk Premium: Elroy Dimson, Paul Marsh and Mike Staunton, London Business School

- The authors argue in their book[26] that in order to estimate the prospective ERP the ex-post estimates should be adjusted downwards.

Dimson, Marsh and Staunton's conclusions on the prospective ERP are that:

> *"The result is a forward-looking geometric risk premium for the United States, the United Kingdom and the world of around 2½ percent and an arithmetic mean risk premium for US, UK and world equities that falls with a range from a little below 4 to a little above 5 percent."*

Thus, rather than supporting C&WG's assertion that the ERP of 5.0% is conservative, the conclusion is that while an estimate of 5.0% is reasonable, it as at the top end of the range quoted by the authors and Ofcom recognised that it was using a value at the upper end of the range of available estimates and reflected recognition of the need to balance short term and long term interests of customers. The OUR is concerned therefore that C&WG's estimate may be too high.

***Q19**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Equity Risk Premium.*

13.2.3. Equity Beta – (β)

As C&WG is not listed it has no beta. Consequently C&WG has considered the asset betas of incumbent telecommunications operators in the EU. The asset betas were calculated based on levered (equity) betas from BARRA. C&WG believes that the selected companies are most representative of C&WG's market conditions and provide an adequate sample from which to assess an appropriate beta. C&WG notes that the average equity beta of 1.46 for this sample falls within Oftel's view that a levered Beta should be in the range of 1.1 to 1.6[27]. C&WG's unlevered betas and the underlying data are shown in Table 1.

[26] Triumph of the Optimists

[27] Hhttp://www.ofcom.org.uk/consultations/past/mobile_call_termination/mct_consultation/annexe.pdfH

Table 1 Asset Betas

	Jan – Mar 04 BARRA Model Equity Beta[28]	Net Debt £m	Market Capitalisation £m	Debt/ Equity	Tax Rate[29]	Asset Beta[30]
BT Group	1.764	8,268	15,670	52.8%	30.00%	1.288
France Telecom	2.168	49,446	48,933	101.0%	34.33%	1.303
C&W plc	1.047		2,876	0.0%	30.00%	1.047
Deutsche Telecom	1.141	46,576	61,091	76.2%	38.29%	0.776
Portugal Telecom	1.541	3,216	13,066	24.6%	27.50%	1.308
Telefonica	1.495	21,745	55,062	39.5%	35.00%	1.190
Telecom Italia	1.251	33,071	52,888	62.5%	37.25%	0.898
Royal KPN	1.288	8,311	13,191	63.0%	34.50%	0.912
Average	**1.462**					**1.090**
C&W plc – based on hypothetical gearing ratio	1.047	287.6[31]	2,876	10.0%	30.0%	0.978

C&WG considers it appropriate to assume a range of asset betas. The assumptions and their justifications are as follows:

- High Scenario– based on an average European equity beta, and the current C&W plc gearing of 0% gives an asset beta of 1.090;
- Medium Scenario – based on C&W plc's equity beta and a gearing ratio of zero (to acknowledge that no debt is borne by C&W) gives an asset beta of 1.047;
- Low Scenario – based on C&W plc's equity beta, along with a hypothetical gearing ratio of 10%, which is the level of gearing which C&WG believe is recognised by Ofcom[32] and the Competition Commission which gives an asset beta of 0.978.

C&WG claims that none of three scenarios acknowledge an increased risk for:

- C&WG itself being a small operation; and
- The specific characteristics of the economic and competitive environment in which C&WG operates.

[28] Averages derived by C&WG from data provided by Barra, via JP Morgan
[29] Data extracted from KPMG's Corporate Tax Rates Survey (January 2004)
[30] Asset Beta = Equity beta / [1+ (Net debt / Equity) * (1 – corporate tax rate)
[31] Assuming 10% gearing level.
[32]

HHttp://www.ofcom.org.uk/consultations/past/mobile_call_termination/mct_consultation/annexe.pdfH

In addition, C&WG believes that there are at least two significant factors that should be taken into account in assessing the beta of a smaller telecommunications company operating in small financial service economies:

- Firstly fixed cost (non-scaleable to fluctuating business cycle demand) forms a higher percentage of the total cost base. Profits, therefore, will show greater fluctuation with the business cycle;

- Specialised financial services (and, for that matter tourism) are more cyclical than the economy as a whole.

C&WG believes Guernsey tends to follow UK trends with regard to GDP, but with greater variability. Hence C&WG alleges that companies working in economies dominated by these sectors will show a greater degree of revenue (and profit) variability than companies operating in a more broadly based economy. Also, equipment manufacturers produce equipment (including switches and concentrators) designed for use on larger networks. This has resulted in less than technically optimal utilisation of switching equipment in Guernsey as it can not be scaled so efficiently. C&WG believe that these factors should increase the beta of C&WG compared to that of larger European operators.

Notwithstanding this argumentation, C&WG does not propose to make any adjustments to its proposed cost of capital to reflect its points, or to rely on these factors to influence its cost of capital calculation.

In conclusion C&WG estimates its equity Beta (derived from the asset betas described in the three scenarios) to be:

- Low: 1.056;
- Medium: 1.047;
- High: 1.090.

OUR Comments

The OUR has a number of detailed comments on C&WG's approach to determining the company's equity beta. The comments below address each of the components separately.

Estimated Equity Betas

First, the DG notes that C&WG has not used direct measurement of equity betas to estimate C&WG's equity beta, but has instead based its estimate on a model developed by BARRA. The use of model based estimates of beta for regulatory purposes is unusual.

It is possible that a model based approach may provide robust beta estimates if the model were well specified and were populated with relevant variables for C&WG. The approach adopted by C&WG, where the estimated beta is the average of a sample of results produced by a model which is presumably itself based on a sample of actual betas, may be somewhat tortuous. C&WG only provides a very high level description of the BARRA approach, which does not enable the OUR to assess the robustness or appropriateness of the approach.

Without prejudice to the robustness or otherwise of the model, the OUR notes that C&WG's estimates of companies' betas are much higher than recent actual asset betas for some of the companies in C&WG's sample. For example, a recent report for Oftel (now Ofcom), looked at BT's betas calculated over a 5 year period on the basis of daily, weekly, monthly and quarterly data[33]. This showed equity betas for BT to be slightly greater than 1 when calculated on a daily basis and around 1 when calculated on a weekly basis (betas calculated on a daily or weekly basis are likely to be more accurate than those calculated on a less regular basis). Hence, the higher equity betas for many of the companies in the sample quoted in C&WG's report are surprising (in the region of 70% higher for BT).

This is compounded by the assertion by C&WG that the calculated asset betas may be understated because current gearing is higher than the average gearing for the period over which the betas were measured. The OUR would expect that the BARRA model used to estimate the beta would take account of changes in gearing over time and, hence, considers that this assertion may be misleading. In addition, many operators' gearing has been reduced over recent years as share prices have increased and debt levels have been reduced.

There may also be a risk that the model, presumably being defined to estimate betas for any industry sector, does not fully account for the variations in asset betas within the telecommunications industry, for example the more predictable cash flows from regulated fixed incumbents compared to new entrants or to mobile operators. This averaging effect could lead to betas for incumbent operators being overstated.

Gearing Level

The DG notes that whilst C&WG has used C&W's asset beta alone as the basis for the lower and medium scenarios, the use of C&W's asset beta may not be appropriate as C&W's risk profile is markedly different to that of C&WG. In the low scenario C&WG has reduced the asset beta by including an assumption of 10% gearing even though C&W has zero gearing. This reduction has no basis as actual gearing should be used to de-leverage the equity beta.

Choice of Sample

The sample of operators C&WG uses to calculate the asset beta for the "high" estimate includes one pure fixed operator (BT plc) and a range of integrated fixed and mobile operators, including the parent company, Cable and Wireless. C&WG compares the average equity beta for the sample with the Ofcom range for the UK mobile operators. The DG considers that this is a misleading comparison for two reasons:

- the leveraging of the two groups of operators will differ and it would therefore be more appropriate to compare asset betas since the impact of leverage has been removed; and
- the Ofcom range is for pure mobile operators in a competitive environment whose risk profile, and hence asset beta, is likely to differ significantly from C&WG's.

[33] Wright, Mason and Miles on behalf of Smithers & Co. Ltd., 'A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the UK', February 13, 2003.

Small Telecommunications Operator

Finally, the OUR notes C&WG's assertions that some adjustment should be made to take account of the small size of the company, the small size of the Guernsey economy and the allegedly higher risk associated with an economy based on financial services. The OUR notes that it is difficult to quantify any difference, if it exists, in the cost of capital between a small and large company and OUR agrees with the C&WG approach of not adjusting the WACC by any factor to take account of these specific matters.

Overall, as can be seen from the OUR comments above, there is a concern that certain assumptions used by C&WG could lead to an overestimate of the company's equity beta. Respondents are invited to provide their views on the assumptions and comments above.

***Q20**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Equity Beta.*

13.3. Cost of Debt

C&WG has used a five year gilt as the appropriate benchmark against which to consider the cost of debt. As the company has no traded debt, C&WG has considered the spreads of bonds issued by other telecommunication organisations to assess the spread that debt commands.

C&WG has computed the debt premium by comparing the current yield to maturity with an appropriate debt free instrument of similar maturity issued in the market in which the funds were raised. C&WG has then added the resulting debt premium to the risk free rate for the market in which the organisation is raising capital, in this case Guernsey. The lower the credit rating, the higher is the perceived risk and hence the corporate debt premium.

C&WG states that its credit ratings are unlikely to exceed that of its parent companies. Cable and Wireless Group is an internationally diversified telecoms group with operations in the US, Europe, Asia, the Caribbean and Latin America. Therefore in the low and medium cases, C&WG has taken its figure for Credit Risk Premium to be the average difference during April 2004 between C&W corporate bonds and five year Gilts (2.19%). These data were provided by C&W Treasury and is presented for reference in Table 2.

Table 2 Credit Risk Premium Low & Medium Scenarios

Term	Risk Free Rate Gilts	Indicative C&W funding rates				Margin vs Risk Free Rate
		Swap Rates	C&W Credit Default Swaps	Fees[34]	All in Cost	
5 yr	4.813%	5.174%	1.830%	0.5%	7.004%	**2.19%**
10 yr	4.933%	5.242%	2.100%	0.5%	7.342%	2.41%
15 yr	4.920%	5.219%	2.150%	0.5%	7.369%	2.45%

In the high scenario, C&WG has taken its figure for Credit Risk Premium to be the difference[35] between C&W corporate bonds and five year Gilts (2.57%) to reflect current investor expectations. These data are shown in Table 3 below:

Table 3 Credit Risk Premium High Scenario

Term	Risk Free Rate Gilts	Indicative C&W funding rates[36]				Margin vs Risk Free Rate
		Swap Rates	C&W Credit Default Swaps	Fees[37]	All in Cost	
5 yr	4.93%	5.30%	2.20%	0.5%	7.0%	**2.57%**
10 yr	5.04%	5.36%	3.00%	0.5%	8.0%	3.32%
15 yr	5.00%	5.33%	3.00%	0.5%	8.0%	3.33%

In conclusion C&WG estimates its credit risk premium for the three scenarios to be:

- Low: 2.19%;
- Medium: 2.19%;
- High: 2.57%.

OUR Comments

The OUR notes that C&W's debt rating is below investment grade[38] and is much lower than the sample of telecom's operators[39] used in the calculation of the beta.

[34] Relates to one-off administration charge on acquisition and therefore C&WG have excluded the charge from the calculation.
[35] as of 7th May 2004
[36] Data provided by C&W plc Treasury 7/5/2004
[37] Relates to one-off administration charge on acquisition and therefore C&WG have excluded the charge from the calculation.
[38] Moody's rating of Ba3.

This is likely to result in the debt premium on C&W's bonds being greater than for the other companies, reflecting a greater perceived risk of default (as debt traders will assume that a lower rating is the result of greater default risk).

As C&W's elevated default risk appears to be unrelated to C&WG's operations, it may be inappropriate to use C&W's cost of debt in C&WG's WACC calculation. A better approach may be to use debt premiums from a sample of operators, such as those used for the calculation of the beta, in order to provide a benchmark. Such a sample would also provide information on the relationship between the cost of debt and the level of gearing.

Respondents are invited to submit their views to assist OUR in arriving at a final view on this issue.

***Q21**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Cost of Debt.*

13.4. Gearing

Whilst C&W plc has no debt, C&WG argues it may be expected that C&W plc will become more highly geared. Including a positive gearing in the WACC calculation reduces the overall value of WACC (if the cost of equity is higher than the cost of debt). Therefore for illustrative purposes, in the low scenario C&WG has used a gearing of 10%. However, in the medium and high scenarios C&WG has used the current capital structure of C&W plc, and indeed C&WG, and set the gearing to zero.

OUR Comments

The OUR has a number of detailed comments on C&WG's approach to determining the company's gearing for inclusion within the WACC formula.

Appropriateness of C&WG's Current Gearing Level

While some regulators use an operator's current gearing as in input to the WACC calculation, others have used "optimal" gearing levels. In this instance C&W's current gearing ratio may be exceptional and may not provide an appropriate basis for setting the gearing ratio used to calculate the cost of capital for C&WG. Whilst C&WG also has zero gearing C&W's capital structure will be set at a group level, and it is likely to be more efficient to issue debt at a group level, therefore C&WG's actual level of gearing may similarly not be an appropriate basis for calculating the level of WACC.

Appropriateness of C&W's Current Gearing Level

C&W has zero gearing as it has a substantial balance of cash and short term securities which more than outweighs its debt. Thus, under the "medium" and "high" scenarios, the assumption is that C&WG is 100% equity funded. However, this is the result of a series of asset sales as C&W has attempted to change its strategic focus, rather than the result of management attempting to maximise shareholder returns (as C&W is currently not profitable the tax shield afforded by debt also has little value currently).

[39] Moody's rating for: Portugal Telecom, Telefónica – A2; BT, KPN – Baa1; France Telecom, Deutsche Telekom, Telecom Italia – Baa2

Indeed, C&WG acknowledges that C&W's level of gearing is likely to rise. Thus, it may not be appropriate to use this level of gearing in the WACC formula.

Gearing Level Used by Ofcom

C&WG uses a gearing of 10% in its "low" scenario arguing that this is the value "recognised" by Ofcom. This is misleading as Ofcom, in its consultation on the cost of calls to mobile, used gearings of 10% and 30% with equal weight (the corresponding range of debt premium used was between 1.0% and 3.5%). It should be noted that Ofcom's assumptions apply to pure mobile operators and different assumptions are likely to be appropriate for fixed operators.

Gearing Levels of Sampled Operators

Finally, the sample of operators used to calculate beta (excluding C&W) show debt equity ratios between 25% and 100% or gearing (defined as D/(D+E)) of between 20% and 50% (gearing assumptions used by EU regulators when setting WACC have been in a similar range). It could be argued that some of these operators are currently attempting to reduce their levels of debt, and hence at least the top end of the range does not reflect optimal gearing. If current debt premiums for the operators are used in the calculation, these would reflect the level of current gearing and consequently any sub-optimality in the gearing will result in the cost of capital being over estimated.

This is a complex issue with a need to consider a wide range of factors and the OUR is concerned that the optimal level of gearing for C&WG is not clear and the assumption in the C&WG submission may not reflect an optimal level. Any comments that will assist the OUR in finalising its view on the appropriate gearing level would be welcome.

***Q22**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Gearing.*

13.5. Tax

C&WG has assumed current taxation levels of 20% for its calculation of the company's WACC which corresponds to the taxation levels in Guernsey.

OUR Comments

Any capital allowances may have an impact on a company's overall tax bill and consequently a company's effective tax rate may need to be adjusted to take into account any capital allowances.

13.6. Summary of C&WG's WACC Proposal

This section summarises C&WG's assumptions regarding the inputs to its calculation of its cost of capital. The WACC is then computed from its constituent components.

Table 4 Estimation of C&WG's Cost of Capital and Underlying Assumptions

Cost of Equity	**Low**	**Medium**	**High**
Unlevered beta	0.978	1.047	1.09
Risk Free Rate	4.81%	4.81%	4.93%
Gearing	10%	0%	0%
Tax Rate	20%	20%	20%
Levered Beta	1.056	1.047	1.09
Equity Risk Premium	5%	5%	5.90%
Geared Cost of Equity	**10.1%**	**10.0%**	**11.4%**
Cost of Debt	**Low**	**Medium**	**High**
Risk Free Rate	4.81%	4.81%	4.93%
Credit Risk Premium	2.19%	2.19%	2.57%
Tax Rate	20%	20%	20%
Nominal After Tax Cost of Debt	**5.6%**	**5.6%**	**6.0%**
Nominal After Tax WACC	9.64%	10.05%	11.36%
Nominal Pre Tax WACC[40]	**12.1%**	**12.6%**	**14.2%**

C&WG believes that the medium scenario of 12.6% nominal pre tax represents a justifiable estimate of C&WG's cost of capital.

If the WACC formula is to be used to calculate the cost of capital of C&WG, the OUR is concerned that this level may not be appropriate. The detailed commentary in this section describes the reasons why OUR believes some of these inputs should be adjusted and respondents are invited to provide comments on the issues set out in the case of each input.

For information of respondents, Annex 2 provides a list of cost of capital decisions for European telcos and recent UK regulators and authorities.

[40] The real pre tax WACC is calculated according to the formula:
Nominal pre tax WACC = (1 + Real Pre Tax WACC) * (1 + expected inflation)-1.

14. Conclusion

This paper considers a range of crucially important inputs into the setting of a price control for telecommunications services provided by the dominant incumbent operator in Guernsey – C&WG. While the issues addressed are complex and technical, they are essential inputs that will, at the end of the process, drive the levels of prices to end users.

However, these issues are not the sole determinants of prices and respondents to this paper are encouraged to also respond to Consultation Document OUR 04/10: Price Control for Telecommunications Services in Guernsey: Review of the Price Control Scope and Structure. That paper gives more detail on the existing price control, considers price development in the market since the control was introduced and reviews the structure and scope of the control.

How the control is structured will have an effect on the level of upward or downward movement that might take place in individual prices as well as the achievement of policy goals. These include achieving the universal service obligation which requires all telecommunications customers in the Bailiwick to be able to receive a similar set of services at a uniform price, and the protection of vulnerable users.

Following receipt of comments on this, and the related Consultation documents, the DG will arrive at a decision on the treatment of the various inputs described in this paper as well as the scope and structure of the control and will proceed to carry out the detailed modelling and economic work required to set a new revised price control.

Any new control is likely to come into effect when the existing control ends in March 2005 and therefore a decision will be announced before then.

/ENDS

ANNEX 1: Summary of Questions

Q1: *Do you agree that the MAR approach is an appropriate methodology to use when deriving the opening asset base for a regulated utility that has been privatised at a price lower than the value of its assets? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q2: *On the basis that a MAR approach is adopted, do you agree that a uniform MAR should be utilised across the assets of the business? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q3: *Regardless of the adoption of a MAR approach, do you consider it appropriate to include some of indexation and/or holding losses/gains if appropriate when using the current cost convention? If not, why, and what alternative approach would you propose and for what reasons?*

Q4: *Regardless of the adoption of a MAR approach, do you consider it appropriate when adopting an indexation approach to current costs to exclude from the inflation rate used components associated with housing costs, for assets other than buildings? If not, why, and what alternative approach do you consider appropriate and for what reasons?*

Q5: *Regardless of the adoption of a MAR approach, if the regulated business does not provide a suitable asset valuation based on current costs, do you consider it appropriate for the DG to make such adjustments as are feasible based on other available information with respect the underlying valuation of the assets? If not, why, and what alternative approach do you consider appropriate and for what reasons?*

Q6: *If a MAR adjustment approach is utilised, do you agree that depreciation schedules for assets purchased prior to the point of privatisation should be adjusted by the MAR? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q7: *If a MAR adjustment approach is utilised, do you agree that a uniform MAR should be adopted across the depreciation schedules? If not, why, and what alternative approach do you consider most appropriate and for what reasons?*

Q8: *Regardless of whether a MAR adjustment approach is utilised, do you consider it appropriate to apply some form of indexation to the relevant depreciation schedules when utilising the current cost convention? If not, why, and what alternative approach would you propose and for what reasons?*

Q9: *Regardless of whether a MAR adjustment process is utilised, if current cost estimates have not been provided by the regulated business, do you consider it appropriate for the Direction General to make such adjustments as are feasible based on other available information with respect to the underlying depreciation charges associated with the asset base? If not, why, and what alternative approach would you propose and for what reasons?*

Q10: *Do you agree that it is appropriate, given the scale of Guernsey's economy and the need to ensure that future capital expenditure provides the economy with suitable strategic benefits, that it is necessary to ensure that capital expenditure proposals are justified, committed to and incorporated into the relevant licence conditions? If not, why, and what alternative proposals would you consider more appropriate and for what reasons?*

Q11: *Do you agree that it is necessary for the regulated business to provide a robust, logical, transparent and fully justified explanations regarding the efficiency of its base year and projected operating costs? If not, why, and for what reasons?*

Q12: *Do you agree that in order to form a conclusion regarding the efficiency of the operating cost proposals put forward by the regulated business, it is necessary and prudent for the DG to compare the regulated firm's operating cost levels with other operators? If not, why, and what alternatives would you propose and for what reasons?*

Q13: *Do you consider the terms of the loan to fellow group companies to represent the economic opportunity cost of capital for C&WG? Please provide your reasoning for your position.*

Q14*.Do you consider the WACC methodology as the most appropriate mechanism for setting the cost of capital for C&WG? Please provide your reasoning for your position.*

Q15*. Do you agree that if the price control applies only to the fixed business then a cost of capital should be calculated that excludes the mobile business? If not please explain your reasons.*

Q16: *If price control were to apply to fixed and mobile services do you consider that*

- *The blended mobile/fixed cost of capital should be used, or*
- *A separate cost of capital should be calculated for the mobile business.*

Please explain your reasoning for your position.

Q17: *Do you consider it appropriate to apply separate cost of capital to investment pre and post privatisation?*

Q18*: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Risk free rate.*

Q19*: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Equity Risk Premium.*

Q20*: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Equity Beta.*

Q21*: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Cost of Debt.*

***Q22**: Respondents are invited to comment on the C&WG's assumptions and the OUR commentary or on the appropriate Gearing.*

ANNEX 2: Cost of Capital Benchmarks

Pre Tax WACC (nominal unless stated otherwise)

Country	Cost of Capital	Scope
Austria	9.34%	General[1]
Bahamas	12.40%	General (price cap) [1]
Belgium	12.88%	Belgacom Fixed May 2003[2]
France	10.4%	France Telecom, Fixed, Oct 2003[2]
Greece	13.12%	General[1]
Hong Kong	12.63%	General (international incumbent[1])
Ireland	12.0%	General[1]
Italy	13.50%	Telecom Italia, Fixed, Aug 2001[2]
Jersey	11.00%	Jersey Telecom, April 2004 [2]
Netherlands	12.30%	Originating[1]
	10.70%	Terminating[1]
	10.80%	General (price cap) [1]
Portugal	13.31%	General[1]
Spain	11.72%	Telefonica, Fixed June 2003[2]
	14.18%	Telefonica, Mobile, June 2003[2]
Sweden	12.0%	TeliaSonera, Fixed, Dec 2003[2]
UK	13.50%	BT February 2001 [2]
	12.0% (real)	Mobile, June 2004 [2]

Sources:
1) Andersen Business Consulting, July 2002 "Study on the implementation of cost accounting methodologies and accounting separation by telecommunication operators with significant market power" prepared for the European Commission DG Information Society
2) OUR research.

UK Regulators & Authorities Recent Cost of Capital Decisions

Authority	Case	Cost of Capital	Base
Ofcom	Wholesale Mobile Voice Call Termination, June 2004	12.0%	Pre tax real
Ofgem	Electricity Distribution, Mar 2004	5.1% to 5.9%	Vanilla WACC[41]
CC	UK Mobile Operators, December 2003	11.25%	Pre tax real
CAA	BAA, Nov 2001	6.7% to 8.6%	Real pre tax
Oftel	Kingston (post flotation), October 2001	13%	Nominal pre tax
Oftel	Competition Review, Sept 2001	13.01% to 16.95%	Nominal pre tax
Ofgem	Transco, Sept 2001	6.0% to 6.25%	Real pre tax
Oftel	BT Network Charge Control, Feb 2001	13.5%	Nominal pre tax
ORR	CC central values, Oct 2000	6.9% to 8.2%	Real pre tax
CC	Sutton & East Water, Aug 2000	7.3%	Real pre tax
Ofgem	PES Review, Dec 1999	6.0% to 6.9%	Real pre tax
Ofwat	Water & sewerage charges, Nov 1999	4.6% to 6.2%	Real post tax
MMC	Cellnet-Vodafone, 1999	14.9% to 17.8%	Nominal pre tax
MMC	BAA 1996	6.4% to 8.3%	Real pre tax

Source: OUR research

[41] Pre tax cost of debt and post tax cost of equity adjusted for gearing, equivalent range pre tax of 6.0% to 7.2%

