Joint Regulators Group (JRG)

Cost of Capital and Financeability

March 2013

Published by the Joint Regulators Group (JRG)

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Context

This information paper has been produced by economic regulators, members of the Joint Regulators' Group (JRG).

This is one of a series of papers produced by the Joint Regulators Group on items of common interest. Further information can be found on the website of each JRG member:

- CAA (Civil Aviation Authority) - www.caa.co.uk
- Monitor (Independent Regulator for NHS Foundation Trusts) - www.monitor-nhsft.gov.uk
- Ofcom (Office of Communications) - www.ofcom.org.uk
- Ofgem (Gas and Electricity Markets Authority) – www.ofgem.gov.uk
- Ofwat (Water Services Regulation Authority) – www.ofwat.gov.uk
- ORR (Office of the Rail Regulator) - www.rail-reg.gov.uk
- Utility Regulator (Northern Ireland Authority for Utility Regulation) - www.niaur.gov.uk
- WICS (Water Industry Commission for Scotland) - www.watercommission.co.uk

Section 1 - Introduction

1.1 The Joint Regulators Group (JRG) is undertaking a structured programme of collaborative work, building on the previous largely ad hoc collaboration on specific issues.

1.2 This workstream covered cost of capital and the assessment of Financeability. Specifically, it considered the approach taken by each regulator in relation to financing duties, the setting of the cost of capital in price controls, assessing financeability and the ring-fencing provisions in each regulatory sector.

1.3 The group was formed by representatives of five UK regulators which we refer to in this paper as the Splice 1 group:

- The Civil Aviation Authority – CAA.
- The Office of Communications – Ofcom.[1]
- The Office of Gas and Electricity Markets – Ofgem.
- The Office of Rail Regulation – ORR.
- The Water Services Regulation Authority – Ofwat.

1.4 This report presents the findings of the work carried out on Cost of Capital and Financeability by the Splice 1 group as a result of meetings held between October 2011 and February 2013.

1.5 Members of this workstream discussed the topics set out in paragraph 1.2 above and in this paper we set out a summary of their treatment of each of the major areas of this paper. However, this is an evolving subject and this report covers the position published in the most recent price controls up to 31 December 2012 for each sector regulated by members of this group. These are complex areas and in this paper we can only provide limited explanation of the approaches followed. A more full description of the rationale in each sector can be found in the relevant sector specific documents. This paper is not intended to provide any policy statement from any of the regulators covered in this paper and if there appears to be any conflict between the material in this summary and the relevant regulator’s price control specific documents then the regulators’ own documents take precedence.

1.6 The main findings are summarised below, with additional material in the annexes:

- Section 2 – Financing duty
- Section 3 – Setting the Cost of Capital and assessing Financeability
- Section 4 – The Regulatory ring-fence and Special Administration

[1] Ofcom’s contribution is limited to telecommunications, although it has recently taken on responsibility for regulating postal services.

Section 2 – Financing Duty

2.1 Although the precise wording and status of the duty may differ, the following regulators within the Splice 1 group have a 'financing duty':

- CAA (for Air Traffic Control and Airports under the Civil Aviation Act);
- Ofgem;
- ORR; and
- Ofwat.

2.2 All four broadly interpret their financing duty (summarised in Table 2.1 below) alongside the efficiency and economy duty to mean that the price control will be set at a level which would allow an efficient company to finance its licensed activities[2]. To date all have set allowed returns using a notional financial structure; the actual financing is a matter for the company and users should not be expected to pay for an inefficient finance structure (ie one that bears too little or creates too much risk). Furthermore, users should not be expected to pay for repairing an inappropriate capital structure.

2.3 In contrast, Ofcom does not have a financing duty, nor did the CAA in respect of Airports under the Airport Act 1986. However, in the CAA's case, three of its four Airport Act duties[3] led it to undertaking financeability assessments along the lines of those it carried out in respect of Air Traffic Control and by other regulators. Under the new Civil Aviation Act 2012, the CAA has a financing duty for airports similar to those in other regulated sector (other than Ofcom).

2.4 Ofcom, without a financing duty, has in the past also set allowed returns using a notional capital structure, but it has recently moved to use of actual capital structures.

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[2] This term is not used in all sectors, although the broad concept applies.
[3] To further the reasonable interests of users, to promote efficient, economic and profitable operations, to encourage investment in new facilities and to impose minimum burdens

Table 2.1:Summary of each Regulators' duties regarding financeability in the context of their other responsibilities

	CAA			Ofcom	Ofgem		Ofwat	ORR
Sector	Air Traffic Control	Airports		Communications	Gas	Electricity	Water & sewerage	Rail infrastructure
Co's subject to price controls as at 31/12/12	1	3		5 (Companies subject to charge controls)	9 (note1)	17 (note1)	19 (note 2)	2
Principal Legislation	Transport Act 2000	Airports Act 1986	Civil Aviation Act 2012	Communications Act 2003	Gas Act 1986	Electricity Act 1989	Water Industry Act	Railways Act 1993
Duties	The CAA has a primary duty to the highest level of safety. It has secondary duties which include a financing duty and an economy and efficiency duty.	The CAA has four equal duties including economy and efficiency, but excluding an explicit financing duty.	The CAA will have a primary duty to users (where appropriate promoting competition) and in performing these duties must have regard to both financing and economy and efficiency.	Ofcom does not have a financing duty, its primary duty is to further the interests of citizens in relation to telecommunications matters and to further the interests of consumers in relevant markets where appropriate by promoting competition. In performing its duties, Ofcom is also required to have regard to, among other things, the desirability of encouraging investment and innovation in relevant markets.	Principle objective is to protect the interests of existing and future customers including their interests in a reduction in greenhouses gases and security of supply. In performing its duties it should have regard to the need to secure that licensees are able to finance their licensed activities and should carry out its activities in a manner best calculated to promote efficiency and economy.		Ofwat has a number of primary and secondary duties which include; a primary duty to act in the manner which it considers is best calculated to secure that companies are able to finance the proper carrying out of their functions; and a secondary duty to act in the manner which it considers is best calculated to promote economy and efficiency on the part of companies.	Acting in a manner that will not render it unduly difficult for Network Rail to finance its activities; having regard to the funds available to the Secretary of State; promoting efficiency and economy on the part of persons providing railway services; having regard to the interests, in securing value for money, of the users or potential users of railway services, of persons providing railway services, of persons who make available the resources and funds and of the general public; enabling persons providing railway services to plan the future of their business with a reasonable degree of assurance; and our duty which, in summary, requires that we have regard to the expenditure that is to be incurred by Scottish Ministers.

Notes

[1]Re Ofgem: Excluding independent gas transporters and independent electricity distribution network operators who are subject to relative price control

[2] Re Ofwat: The 19 licence holders referred to are the 10 regional companies that provide both water and sewerage services and the 9 regional companies that provide water services only. Each of these companies is subject to the full periodic review price determinations process. Ofwat also regulates, albeit with a lighter process; 6 local companies providing either water or sewerage services or both; and 7 water supply licensees offering water services to large use customers.

Re ORR: High Speed 1 (HS1 Ltd) is not covered because it is a concession and its regulatory framework is different to Network Rail's.

Section 3 – Setting the cost of capital and assessing financeability

Summary

3.1 The approaches taken by the members of the Splice 1 group to setting the cost of capital and assessing financeability for their sectors is broadly similar, although Ofcom takes a different approach in a number of areas. The methods adopted and the differences that arise are discussed below and further detail on the parameters used in recent price controls are shown in the annexes.

Cost of Capital

3.2 Whilst there are some differences in the duties of the various regulators included in this paper, as set out in section 2 above, all five have occasion to derive the cost of capital for the companies that they regulate. All five adopt a weighted average cost of capital (WACC) approach representing the cost of a mixture (the gearing) of debt and equity finance.[4]

3.3 The WACC is derived for the licensed entity which is treated as a notional stand-alone company, and this is often different to the actual capital structure of the company and its group.

3.4 All five regulators have used the Capital Asset Pricing Methodology (CAPM)[5] as the prime approach for estimating the cost of equity supported by other evidence, including dividend growth model, transaction evidence and comparison with other regulated sectors.

3.5 All members of the Splice 1 group (with the exception of Ofcom) express the WACC in real terms, which is applied for price control purposes to a real Regulatory Asset Value (RAV).[6]

Cost of equity

3.6 Under the CAPM approach the cost of equity is estimated as the risk-free rate + (equity beta x market risk premium). The risk-free rate and market risk premium are general non-company specific market factors.

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[4] The ORR has decided for its current price control for Network Rail, to set revenues based on the Adjusted WACC approach. This approach only funds Network Rail's efficient financing costs as the difference between Network Rail's full cost of capital and its efficient financing costs (the equity surplus) is netted off Network Rail's bottom-line revenue requirement. However, the ORR uses the full cost of capital in its investment framework for Network Rail, for calculating the financing costs of schemes that are funded outside of Network Rail's price control as it is important that investment decisions are made using Network Rail's full cost of capital.

[5] Given that there is no direct evidence available on Network Rail's cost of equity as it does not have any equity that is traded on financial markets and there are no direct comparators, ORR, estimates Network Rail's cost of equity by focusing on the aggregate return on equity within a broad CAPM framework.

[6] In some sectors this is known as the Regulatory Asset Base (RAB) or Regulatory Capital Value (RCV). The RAV/RAB/RCV and charges/prices are adjusted periodically for inflation to maintain their values in real terms.

3.7 In estimating the generic components of the cost of capital, regulators are aware of the need for consistency in relation to:

- the estimation of components in the WACC (eg the relationship between the risk-free rate, the market risk premium and the market return); and
- where appropriate, consistency of approach over time, so that 'swings and roundabouts' have the opportunity to even out over time.

Risk-free rate

3.8 The risk-free rates and market risk premia used by regulators are reproduced in Tables 3.1 and 3.2 below. It can be seen that while different values have been used there is a degree of consistency. Regulators tend to take a broadly similar approach to estimating the risk free rate by examining yields on gilts including index linked gilts. Common issues in the interpretation of gilt yields for the purpose of setting the risk-free rate include the effect of quantitative easing and pensions' regulation. Regulators have had to make judgements from the data, considering past, current and future rates as to the impact of these and other issues and this judgement will be affected by the time at which the decision is taken and the analysis of the evidence available at that time.

Table 3.1: Real risk-free rates used in recent price controls

Decision year	2006	2007	2007	2008	2008	2009	2009	2010	2011	2011	2011	2012
Price control	Ofgem: TPCR4	CAA: Heathrow /Gatwick	Ofgem: GDPCR	ORR: PR08	CAA: Stansted	Ofwat: PR09	Ofgem: DPCR5	CAA: NATS	Ofcom: MCT	Ofcom: WBA	Ofgem: TPCR4 Rollover	Ofgem: RIIO T1/GD1
Risk-free rate	2.5%	2.5%	2.5%	1.8%	2.0%	2.0%	2.0%	1.75 %	1.5%	1.4%	2.0%	2.0%

3.9 The main exception to this is Ofcom, which takes a slightly different approach due to factors that specifically affect the telecommunications sector. Its price controls tend to be of shorter length – typically three years - which means that it places more weight on shorter term averages and forward rates. This approach affects a number of aspects of its WACC calculation.

Market risk premium

3.10 Most regulators take a long term view on the appropriate market risk premium. Dimson, Marsh and Staunton is often cited as a key reference work in this area. However, there is no academic consistency on the appropriate values and, therefore, regulators have to exercise judgement based on their analysis and the evidence available to the regulator. Similar to the risk-free rate, regulators consider past, current and future rates and give appropriate weight to each of these depending on the situation. Hence, the judgement on the appropriate market risk premium to adopt is affected to some extent by the financial conditions existing at the time each decision is made.

Table 3.2: Market risk premia used in recent price controls

Decision year	2006	2007	2007	2008	2008	2009	2009	2010	2011	2011	2011	2012
Price control	Ofgem: TPCR4	CAA: Heathrow /Gatwick	Ofgem: GDPCR	ORR: PR08	CAA: Stansted	Ofwat: PR09	Ofgem: DPCR5	CAA: NATS	Ofcom: MCT	Ofcom: WBA	Ofgem: TPCR4 Rollover	Ofgem: RIIO T1/GD1
Market risk premium	4.5%	4.24%	4.75%	5.0%	4.67%	5.4%	5.25%	5.25%	5.0%	5.0%	5.0%	5.25%

Betas

3.11 The equity beta is a company or sector specific factor which describes the relative risk of the company or sector to the market as a whole and therefore variation between sectors is to be expected. The existence of directly measureable betas will depend on whether there are regulated companies with equity listings. In many cases licensees are not listed which makes observing values difficult and proxies are often required. This means that regulators have to exercise judgement and in general consider a wide range of data to reach their conclusions. The relative values used, as shown in the annexes, are not surprising with the CAA tending to use the highest values reflecting the volume risk to which the relevant companies are exposed, while the other sectors have broadly similar values with the greater asset risk of telecoms activities being moderated relative to the other sectors by their lower financial gearing risk.

Cost of debt & Gearing

3.12 In estimating the WACC regulators have to estimate the cost of debt and determine the appropriate level of notional gearing. The Splice 1 group members have taken fairly consistent approaches to determining the cost of debt using a rate fixed for the duration of the price control period that reflects a mixture of historical benchmark yields and expected future yields over the period, using market evidence as appropriate. In general, the Splice 1 group also take into account that an efficiently financed company would have a debt portfolio built up over a number of years, some of which will be at a fixed rate.[7]

3.13 Ofgem has taken a slightly different approach following its review of the RPI-X regime with a move to annual indexation of the cost of debt relative to a 10 year trailing average of published indices. Ofgem has done this in part because it is introducing longer (eight year) price controls and to set a fixed cost of debt assumption over such a period would present the companies with too much exposure or require too much headroom to the detriment of consumers.

Corporation Tax

3.14 Regulators have the choice of whether to include an allowance for Corporation Tax in the cost of capital or as a separate allowance. The choice arises because interest charges (the cost of debt) are allowable expenses against the tax charge whereas dividends (cost of equity) are not. Hence the cost of debt is normally expressed before tax, while the cost of equity is normally expressed after tax. This gives rise to two types of WACC which are used for price controls:

- pre-tax, where the cost of equity is increased by the tax rate to provide for the tax that must be paid, along with the pre-tax cost of debt;
- 'vanilla', where a separately calculated tax allowance is provided in addition to a pre-tax cost of debt and post-tax cost of equity.

Overall WACC

3.15 Despite the differences in the component elements as discussed above the resultant estimates for WACC have been broadly comparable, adjusting for the relative risk of each sector. This is an important result as it is the WACC and not its components that is used to determine allowed revenues. Table 3.3 below sets out the vanilla WACCs from recent reviews. We have shown these on a vanilla

[7] Ofcom's forward looking approach to setting charge controls, means that it does not take account of historical debt in calculating the cost of debt to be used in the WACC calculation.

WACC basis for consistency although it should be noted that this will not always be the rate used to generate price control revenue or prices as only some members of the Splice 1 group use this basis.

Table 3.3 – Vanilla WACC (real)

Decision year	2006	2007	2007	2008	2008	2009	2009	2010	2011	2011	2011	2012
Price control	Ofgem: TPCR4	CAA: Heathrow /Gatwick	Ofgem: GDPCR	ORR: PR08	CAA: Stansted	Ofwat: PR09	Ofgem: DPCR5	CAA: NATS	Ofcom: MCT	Ofcom: WBA	Ofgem: TPCR4 Rollover	Ofgem: RIIO T1/GD1
Vanilla WACC	5.05%	5.1 /5.3%	4.94%	4.75%	5.62%	5.1%	4.7%	5.7%	6.3%	5.7 - 6.4%	4.75%	4.3-4.8%

Assessing financeability

3.16 In carrying out their duties most regulators must have regard to some extent to the need of licence holders, acting efficiently, to be able to finance their licenced activities as described in section 2. This means that, in setting price controls, regulators should have regard to the ability of efficient companies to secure financing in a timely way and at a reasonable cost in order to facilitate the delivery of their regulatory obligations. However, regulators have to balance this consideration with the need to protect consumers and constrain the returns provided by the regulatory framework, and to avoid encouraging inefficiency or rescuing a company that has encountered financial distress as a result of its own decisions.

3.17 All members of the Splice 1 group (with the exception of Ofcom[8]) assess the financeability of the companies they regulate in a manner appropriate to their duties and undertake analysis similar to that undertaken by the rating agencies who themselves follow a relatively common approach although with differences of detail.

3.18 Credit rating agencies which rate regulated companies highlight that their ratings are based on a mixture of quantitative evidence (credit metrics or financial ratios) and qualitative evidence (as an assessment of the environment in which the issuer operates). In doing so, they consider the financial ratios of the companies and other factors including the industry, competition, government policy, the regulatory regime and company specific issues.

3.19 Often, the focus of some stakeholders on the financeability assessment is on the credit metrics. However, regulators consider the broader context for the notional[9] company and, for example, Ofgem states in its documents that its financeability assessment is not predicated on an expectation that the notional companies would be able to achieve all financial ratios target levels in all years of the price control period.

3.20 The financeability assessment undertaken by regulators will look at credit ratios used by the various main rating agencies including:

[8] As discussed above, Ofcom does not have a financing duty under the Communications Act 2003.
[9] The ORR looks at Network Rail's actual financial structure given the way it is financed.

- FFO/interest[10]
- PMICR[11]
- FFO/net debt
- RCF/net debt[12]
- RCF/capex
- Net debt/RAV (or RAB or RCV)

although typically each industry might focus on a subset of these ratios.

3.21 These credit ratios are compared to the target ranges that the three major credit rating agencies state are consistent with credit ratings in the BBB-A range.

Table 3.4 Credit metric ratios – using the example of regulated energy networks

	Fitch		Moody's		Standard & Poor's	
	A	**BBB**	**A**	**Baa**	**A**	**BBB**
Net debt / RAV (%)	50 - 65	>65	45 - 60	60 - 75	<70	>70
FFO interest cover (x)	4.0 - 5.0	<4.0	3.5 - 5.0	2.5 - 3.5	>3.5	2.5 - 3.5
PMICR[1] (x)	>1.7	<1.7	2.0 - 4.0	1.4 - 2.0		
FFO / Net debt (%)			12 - 20	8 - 12	>12	8 - 12
RCF / Capex (x)			1.5 - 2.5 [2]	1.0 - 1.5 [2]		

[1] Moody's calls this metric 'Adjusted interest cover ratio (ICR)' but the definition it uses is consistent with the definition of PMICR used by Fitch.

[2] According to Moody's, utilities undergoing a large capex programme who do not benefit from accelerated depreciation are expected to score this metric at a Ba level, i.e in the range 0.5 - 1.0.

3.22 The financeability of each notionally-financed company is typically tested under both the 'base' scenario (allowed revenue set at the beginning of the price control) and also stress tested against a number of other scenarios or events (depending on the sector under review). Such stress tests also take into account the risk sharing mechanisms or mitigations within the price control framework as well as the possibility of mitigating management action.

[10] FFO is 'funds from operations'. FFO/interest is often referred to as 'FFO interest cover'
[11] PMICR stands for 'post-maintenance interest cover ratio'. It is a derivative of FFO/interest and, therefore, is often also referred to as the 'adjusted interest cover ratio'.
[12] RCF is 'retained cash flow'.

Section 4 – The Regulatory ring-fence and Special Administration

Background

4.1 The licence of many, but not all[13], of the regulated companies include conditions that have been put in place to ring-fence the regulated business from the activities of the wider group. These conditions are designed to ensure:

- there is no cross-subsidy between the regulated business and any other business of the licence holder or between the regulated business and any associated company;
- the transfer of assets (including the provision of financial support) to associated companies does not adversely affect the company's ability to carry out its functions or to finance those activities;
- the regulator is furnished with regular accounting and other information to enable it to assess the financial position and performance of the regulated business; and
- the regulated business has at its disposal sufficient financial, managerial and other resources to carry out the regulated business.

4.2 The licence might also require the ultimate controlling company to undertake not to act, or cause any subsidiary to act, in such a way as to cause the regulated company to breach its licence.

4.3 These arrangements have been designed to reduce the risk of financial distress by constraining the conduct of the company, ensuring its resources are not diverted away from the company and that it is not exposed to undue risk. Their presence helps to reassure the regulator that companies remain in a position to finance their functions and consumers' interests are not adversely affected by a company's capital structure.

4.4 However, as a last resort, there is a Special Administration provision in many regulated sectors.

Comparison of ring-fencing conditions across the sectors represented by the Splice 1 group

4.5 For many of the industries in the Splice 1 group the regulatory ring-fence contains conditions that encompass common themes (see Table 4.1). However the exact form of the conditions varies between the respective sectors.

4.6 The CAA is currently assessing whether Heathrow Airport Ltd, Gatwick Airport Ltd and Stansted Airport Ltd require an economic licence and what that licence should include. No inference from the following discussion should be drawn in respect of financial resilience licence conditions that may be included in any economic

[13] For example, in the Communications sector, companies do not require licences to provide their services; Ofcom impose regulatory obligations (such as charge controls) by means of specific conditions under separate legal instruments. Ofcom does not have a regulatory ring fence or special administration regime in relation to these companies.

licence that the CAA may issue to an airport operator. In addition, Ofgem is in the process of updating its ring-fence licence conditions to ensure that they remain fit for purpose in the years to come.[14]

Credit requirements

4.7 With the exception of the communications sector regulated by Ofcom, all of the sectors represented by the Splice 1 group have licences that require the regulated company to retain an investment grade credit rating. In respect of airports, the CAA has not yet published initial licences and such licences may or may not included a credit rating requirement.

4.8 In 2005 Ofgem increased the protections offered by financial ring-fencing by formally adding cash lock-up provisions to licence conditions of all gas and electricity distribution businesses and announced its intention to introduce similar conditions in all other gas and electricity network licences. The cash lock-up prohibits companies, subject to certain limited exceptions, and without the regulator’s prior consent, from transferring cash or other assets to an associated company. This is triggered when a licensee has the lowest level of credit rating consistent with investment grade and a credit rating agency has revised the rating outlook to negative or placed the licensee’s rating on review for possible downgrade.

4.9 In 2006 Ofwat announced that it also thought such provisions were appropriate to the water sector and they have been formally incorporated into a number of company licences when the opportunity has arisen, for example, due to corporate activity.

4.10 The cash lock-up provision in respect of credit ratings is not prescribed in the licence for the sectors regulated by ORR or the CAA. However licences for both rail and NATS[15] contain conditions that prescribe a cap on the level of financial indebtedness with, in the case of NATS, a cash lock-up if the cap is exceeded. There is no such prescription within the licence conditions of the sectors regulated by Ofwat and Ofgem.

Special administration

4.12 There is a general provision in company law to deal with a company financially failing, and hence being placed in the hands of administrators. In each of the sectors represented by the Splice 1 group (with the exception of the communications sector regulated by Ofcom and the airports sector regulated by the CAA) there is a special administration provision.

4.13 The grounds for special administration vary by sector. The special administrator has duties that are over and above those in respect of the creditors and shareholders.

4.14 Special administration is a regulatory mechanism designed to safeguard the provision of essential supplies by key infrastructure networks in the event of a company failure by ensuring the transfer of that company to another company as

[14] http://www.ofgem.gov.uk/Networks/Policy/Documents1/Updated%20Proposals%20for%20Changes%20to%20Ring%20Fence%20Conditions.pdf

[15] NATS (En-Route) plc

a going concern and that the principal regulated functions are properly carried out pending the transfer.

Table 4.1: Ring-fence conditions summary

Regulator	CAA			Ofcom[2]	Ofgem		Ofwat	ORR
Sector	Air Traffic Control	Airports[1]		Communications	Gas	Electricity	Water & sewerage	Rail network
		Airports Act 1986	Civil Aviation Act 2012					
Restrictions on disposal of assets	✓	No economic licences and no financial ring-fence	To be decided	X	✓	✓	✓	✓
Restrictions on activity and financial ring-fencing	✓			X	✓	✓	✓	✓
Requirement to annually provide certification of availability of resources and at each dividend declaration	✓			X	✓	✓	✓	✓
Ultimate controlling company undertakings	✓			X	✓	✓	✓	✓
Requirement to maintain an investment grade credit rating	✓			X	✓	✓	✓	✓
Restrictions on indebtedness	✓			X	✓	✓	X	✓
Restrictions on granting of security over assets	✓			X	✓	✓	✓	✓
Restrictions on level of gearing	✓			X	X	X	X	✓
Insolvency	Special Admin	No Special Admin. Standard insolvency rules		No special Admin. Standard insolvency rules	Special Admin		Special Admin	Special Admin

[1] Airport operators currently do not have a licence. Under the new Civil Aviation Act there will be a licence but there is no ring-fencing requirement.
[2] On 1 October 2011, Ofcom officially took over regulation of the UK's postal services from the previous regulator Postcomm. However, Ofcom's contribution in this document is limited to the communication's sector.

ANNEX 1 Statutory Duties

This description summarises the powers and duties of the regulators. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

Annex1.1 CAA

NATS

Domestic legislation Transport Act 2000

2 (1) "The CAA must exercise its functions as to maintain the highest level of safety in the provision of air traffic services and that duty is to have priority over the application of ....

2(2)(b) to promote efficiency and economy on the part of the licence holders

2(2)(c) to secure that licence holders will not find it unduly difficult to finance activities authorised by the their licences

If there is a conflict in application of the 'secondary' duties then "the CAA must apply them in a manner it thinks is reasonable having regard to them as a whole"(2(5))

Airports

Currently operating under the Airports Act 1986, but expected to be soon replaced with a new Civil Aviation Act.

Airports Act 1986

Four equal duties;

1. To further the reasonable interests of users of airports within the UK
2. To promote the efficient, economic and profitable operation of such airports
3. To encourage investment in new facilities at airports in time to satisfy anticipated demands by the users of such airports
4. To impose the minimum restrictions that are consistent with the performance by the CAA of its functions as economic regulator

Civil Aviation Act

Duties

(1) The CAA must carry out its functions under this Chapter in a manner which it considers will further the interests of users of air transport services regarding the range, availability, continuity, cost and quality of airport operation services.

(2) The CAA must do so, where appropriate, by carrying out the functions in manner which it considers will promote competition in the provision of airport operation services.

(3) In performing its duties under subsections (1) and (2) the CAA must have regard to—

(a) the need to secure that each holder of a licence under this Chapter is able to finance its provision of airport operation services in the area for which the licence is granted,

(b) the need to secure that all reasonable demands for airport operation services are met,

(c) the need to promote economy and efficiency on the part of each holder of a licence under this Chapter in its provision of airport operation services at the airport to which the licence relates,

(d) the need to secure that each holder of a licence under this Chapter is able to take reasonable measures to reduce, control or mitigate the adverse environmental effects of the airport to which the licence relates, facilities used or intended to be used in connection with that airport ("associated facilities") and aircraft using that airport,

(e) any guidance issued to the CAA by the Secretary of State for the purposes of this Chapter,

(f) any international obligation of the United Kingdom notified to the CAA by the Secretary of State for the purposes of this Chapter, and

(g) the principles in subsection (4).

4) Those principles are that—

(a) regulatory activities should be carried out in a way which is transparent, accountable, proportionate and consistent, and

(b) regulatory activities should be targeted only at cases in which action is needed.

Annex1.2 Ofcom

Primary duty:

Under the 2003 Communications Act, Ofcom's principal duty (s.3(1)) in carrying out functions is to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition.

In so doing, Ofcom is required to secure a number of specific objectives and to have regard to a number of matters, as set out in section 3 of the Act. Of the prescribed specific statutory objectives in section 3(2)), the objective of securing the availability throughout the UK of a wide range of electronic communications services objectives is particularly relevant.

In performing its duties, Ofcom is also required to have regard to a range of other considerations, including:

- the desirability of promoting competition in relevant markets;
- the desirability of encouraging investment and innovation in relevant markets;
- the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom.

Under section 3(3), in performing its principal duty, Ofcom must also have regard, in all cases, to the principles under which regulatory activities should be transparent, accountable, proportionate, consistent, and targeted only at cases in which action is needed, and any other principles appearing to Ofcom to represent the best regulatory practice, including:

- ensuring that its interventions are evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome;
- seeking the least intrusive regulatory mechanisms to achieve its policy objectives;
- consulting widely with all relevant stakeholders and assessing the impact of regulatory action before imposing regulation upon a market.

Section 4 of the Act requires us to act in accordance with six European Community requirements for regulation. Of particular relevance are requirements to:

- Promote competition in the provision of electronic communications networks and services, associated facilities and the supply of directories;
- Promote the interests of all persons who are citizens of the European Union;
- Take account of the desirability of Ofcom's carrying out of its functions in a manner which, so far as practicable, does not favour one form of or means of providing electronic communications networks, services or associated facilities over another, i.e. to be technologically neutral; and
- Encourage, to such extent as Ofcom considers appropriate for certain prescribed purposes, the provision of network access and service interoperability, namely securing efficient and sustainable competition, efficient investment and innovation and the maximum benefit for customers of communications providers.

Annex1.3 Ofgem

Ofgem's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008, 2010 and 2011) as well as arising from directly effective European Community legislation.
References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts. [1] Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This description must be read accordingly. [2]
Ofgem's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases; in the security of the supply of gas and electricity to them;and in the fulfilment by the Authority, when carrying out its functions as the designated regulatory authority for Great Britain, of the objectives set out in Article 40 (a) to (h) of the Gas Directive [3] and Article 36 (a) to (h) of the Electricity Directive.[4]

Ofgem is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with:

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity; or
- the provision or use of electricity interconnectors.

Before deciding to carry out its functions in a particular manner with a view to promoting competition, Ofgem will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out those functions and whether there is any other manner (whether or not it would promote competition) in which Ofgem could carry out those functions which would better protect those interests.

In performing these duties, Ofgem must have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them [5]; and
- the need to contribute to the achievement of sustainable development.

In performing these duties, Ofgem must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas. [6] Subject to the above, Ofgem is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed [7] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply, and shall, in carrying out those functions, have regard to the effect on the environment.

In carrying out these functions Ofgem must also have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and

- certain statutory guidance on social and environmental matters issued by the Secretary of State.

Ofgem may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

The Authority must carry out its functions in the manner that it considers is best calculated to implement or ensure compliance with any decision of the Agency [8] or the European Commission under the Third Package [9] and, when carrying out its functions as the designated regulatory authority, consult and cooperate with the Agency and other designated regulatory authorities whenever it thinks fit.

Ofgem has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation [10] and therefore part of the European Competition Network. Ofgem also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[1]Entitled "Gas Supply" and "Electricity Supply" respectively.
[2] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

[3]Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC

[4] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC

[5] Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Acts in the case of Electricity Act functions.
[6] The Authority may have regard to other descriptions of consumers.
[7] Or persons authorised by exemptions to carry on any activity.

[8] The "Agency" means the Agency for the Cooperation of the Energy Regulators established under 2009/713/EC of the European Parliament and of the Council of the 13 July 2009 establishing an Agency for the Cooperation of Energy Regulators.

[9] The Third Package comprises the Electricity Directive, the Gas Directive, the Electricity Regulation (2009/714/EC), the Gas Regulation (2009/715/EC) and the Agency Regulation (2009/713/EC).
[10] Council Regulation (EC) 1/2003.

Ofgem specific duties re financeability

Gas:

s4AA(2) Gas Act 1986

"………………the Authority shall have regard to……..the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part[, the Utilities Act 2000 [, Part 5 of the Energy Act 2008 or section 4, Part 2, or sections 26 to 29 of the Energy Act 2010]]"

Electricity:

s3A(2) Electricity Act 1989

"…………..the Authority shall have regard to]—…………….. the need to secure that licence holders are able to finance the activities which are the subject of obligations imposed by or under this Part[, the Utilities Act 2000[, Part 2 or 3 of the Energy Act 2004 [, Part 2 or 5 of the Energy Act 2008 or section 4, Part 2, or sections 26 to 29 of the Energy Act 2010]]]"

Annex1.4 Ofwat

In this section duties are numbered. However, this is purely for ease of reference. There is no hierarchy of duties **within** either of the primary or secondary duties.

Financeability

Ofwat must act in the manner which it considers is best calculated to secure that companies holding appointments under Chapter I of Part II of the Water Industry Act (WIA) as relevant undertakers are able (in particular, by securing reasonable returns on their capital) to finance the proper carrying out of the functions of such undertakers.

This is a primary duty and is interpreted to mean that an efficiently financed and operated company should be able to provide regulated services and earn a return at least equal to its cost of capital. Price limits must ensure that efficient companies can be financeable, such that a company's revenues, profits and cash flows are sufficient to allow it to raise finance on reasonable terms.

Other duties

Ofwat's other **primary** duties include to act in the manner which it considers is best calculated:

1. to further the consumer objective;
2. to secure that the water and sewerage functions are properly carried out in every area of England and Wales; and
3. to secure that activities authorised by the licence and any statutory functions imposed on it in consequence of the licence are properly carried out.

In addition, but subject to the Primary Duties Ofwat has secondary duties include to act in the manner which it considers is best calculated:

4. to promote economy and efficiency on the part of water companies in the carrying out of their statutory duties;
5. to secure that no undue preference is shown, and that there is no undue discrimination in fixing by the company of water charges;
6. to secure that consumers are protected as respects benefits that could be secured for them by the application in a particular manner of any of the proceeds of any disposal of any protected land;
7. to ensure that consumers are also protected as respects any activities of a water company which are not attributable to the exercise of their statutory functions or as respects any activities of any person appearing to Ofwat to be connected with the company; and
8. to contribute to achievement of sustainable development.

Annex1.5 ORR

ORR duties re financeability

(1) [The Office of Rail Regulation] [shall] have a duty to exercise the functions assigned or transferred to [it] under or by virtue of this Part [or the Railways Act 2005 that are not safety functions] in the manner which [it] considers best calculated--

[(zb) to promote improvements in railway service performance;

(a) otherwise to protect the interests of users of railway services;]

(b) to promote the use of the railway network in Great Britain for the carriage of passengers and goods, and the development of that railway network, to the greatest extent that [it] considers economically practicable;

[(ba) to contribute to the development of an integrated system of transport of passengers and goods;

(bb) to contribute to the achievement of sustainable development;]

(c) to promote efficiency and economy on the part of persons providing railway services;

(d) to promote competition in the provision of railway services [for the benefit of users of railway services];

(e) to promote measures designed to facilitate the making by passengers of journeys which involve use of the services of more than one passenger service operator;

(f) to impose on the operators of railway services the minimum restrictions which are consistent with the performance of [its] functions under this Part [or the Railways Act 2005 that are not safety functions];

(g) to enable persons providing railway services to plan the future of their businesses with a reasonable degree of assurance.

(2) Without prejudice to the generality of subsection (1)(a) above, [the Office of Rail Regulation] [shall] have a duty, in particular, to exercise the functions assigned or transferred to [it] under or by virtue of this Part [or the Railways Act 2005 that are not safety functions] in the manner which [it] considers is best calculated to protect--

(a) the interests of users and potential users of services for the carriage of passengers by railway provided by a private sector operator otherwise than under a franchise agreement, in respect of--

(i) the prices charged for travel by means of those services, and

(ii) the quality of the service provided,

. . .; and

(b) the interests of persons providing services for the carriage of passengers or goods by railway in their use of any railway facilities which are for the time being vested in a private sector operator, in respect of--

(i) the prices charged for such use; and

(ii) the quality of the service provided.

…

(5) [The Office of Rail Regulation] shall also be under a duty in exercising the functions assigned or transferred to [it] under this Part [or the Railways Act 2005 that are not safety functions]--

…

(ab**)** in having regard to any guidance falling within paragraph (aa), to give what appears to it to be appropriate weight to the extent (if any) to which the guidance relates to matters in respect of which expenditure is to be or has been incurred by the Scottish Ministers;]

(b) to act in a manner which [it] considers will not render it unduly difficult for persons who are holders of network licences to finance any activities or proposed activities of theirs in relation to which [the Office of Rail Regulation] has functions under or by virtue of this Part [or that Act] (whether or not the activities in question are, or are to be, carried on by those persons in their capacity as holders of such licences); . . .

[(c) to have regard to the funds available to the Secretary of State for the purposes of his functions in relation to railways and railway services;

Annex 2 Financing assumptions in recent price controls

Annex 2.1 CAA financing assumptions in recent price controls

Regulator	CAA			
	NATS	Heathrow	Gatwick	Stansted
Price Control	CP3/RP1	Q5	Q5	Q5
Period	2011-4	2008-2013 (extended to 2014)		2009 – 2014
Cost of equity Risk free rate	1.75%	2.5%	2.5%	2.0%
Equity beta	1.35	1.14	1.27	1.2
Asset beta	0.60	0.52*	0.57*	0.65*
Debt beta (for Ke only)	0.1	0.1	0.1	0.1
Equity risk premium	5.25%	4.24%*	4.24%*	4.67%*
Cost of Equity (post-tax)	8.8%	7.33%	7.86%	7.6%
Cost of debt Cost of debt (gross of tax shield)	3.6%	3.55%	3.55%	3.64%*
Notional gearing	60%	60%	60%	50%
Tax (NATS= forecast, Airports = statutory)	27%	28%	28%	28%
WACC Real pre-tax	7.0%			
Vanilla	5.7%	5.06%	5.28%	5.62%
Post tax	5.11%	4.46%	4.24%	5.11%
Other financial metrics Dividend yield on equity RAB	n/a	n/a	n/a	n/a
Cost of raising new equity	n/a	0	0	0
Amount of debt assumed index linked	n/a	50%	50%	50%
Key financial indicators Cash interest cover	4.9xmin	o/s	o/s	o/s
Adjusted interest cover ratio	1.71xmin	o/s	o/s	o/s
Funds from operations / debt	n/a	o/s	o/s	o/s
Retained cash flow / debt	n/a	o/s	o/s	o/s
Gearing (net debt / regulatory capital value)	66%max	60%	60%	50%

* Implied point estimates from the component ranges

Annex 2.2 Ofcom financing assumptions in recent price controls – all have been appealed

Regulator	Ofcom		
	BT Estimate for BT Group	Openreach	An efficient mobile operator
Price Control	WBA CC	WBA CC	MCT
Period	Set in July 2011	Set in July 2011	Set in January 2011
Cost of equity Risk free rate	1.4%	1.4%	1.5%
Asset beta	0.525	0.41-0.55	0.56
Equity beta	0.77 - 1.04	0.67-0.94	0.76
Equity risk premium	5%	5%	5%
Cost of Equity (post-tax)	8.3 - 9.6%	7.8%-9.1%	7.8%
Cost of debt Cost of debt (pre tax)	6.4 - 6.9%	6.4%	5.5%
Notional gearing	50%	50%	30%
WACC Real pre-tax	6.1%	5.6%	6.2%

Annex 2.3 Ofgem financing assumptions in recent price controls

Regulator	Ofgem				
	Electricity Distribution	Gas Distribution	Electricity Transmission		
Price Control	**DPCR5**	**RIIO-GD1**	**RIIO-T1**		
			NGGT	NGET	SHETL/SPTL
Period	2010-2015	2013-2021	2013-2021	2013-2021	2013-2021
Cost of Equity					
Risk-free Rate	2.0%	2.0%	2.0%	2.0%	2.0%
Equity Beta	0.9	0.9	0.91	0.95	0.95
Equity Risk Premium	5.25%	5.25%	5.25%	5.25%	5.25%
Cost of Equity (post-tax)	6.7%	6.7%	6.8%	7.0%	7.0%
Cost of Debt					
Cost of Debt (gross of tax shield)[16]	3.60%	2.92%	2.92%	2.92%	2.92%
Notional Gearing	65%	65%	62.5%	60%	55.0%
WACC					
Real Pre-Tax	5.61%	4.95%	5.13%	5.38%	5.69%
Vanilla	4.69%	4.25%	4.37%	4.55%	4.75%
Post-Tax	4.04%	3.82%	3.95%	4.14%	4.38%
Other financial metrics					
Dividend yield on equity RAB	5%	5%	5%	5%	5%
Cost of raising new equity	n/a	5%	5%	2.5%	5%
Amount of debt assumed index linked	n/a	25%	25%	25%	0%
Key financial indicators					
Cash interest cover	3	2.5-3.0	2.5-3.0	2.5-3.0	2.5-3.0
Adjusted interested cover ratio		1.4-1.7	1.4-1.7	1.4-1.7	1.4-1.7
Funds from operations / debt		8-12%	8-12%	8-12%	8-12%
Retained cash flow / debt	9%	5-9%	5-9%	5-9%	5-9%
Gearing (net debt / regulatory capital value)	70%	65-80%	65-80%	60-70%	60-70%

[16] Subject to annual indexation

Annex 2.4 Ofwat financing assumptions in recent price controls

Regulator	Ofwat
	Water
Price Control	PR09
Period	2010/11 - 2014/15
Cost of equity Risk free rate	2.0%
Equity beta	0.9
Equity risk premium	5.4%
Cost of Equity (post-tax)	7.1%
Cost of debt Cost of debt (gross of tax shield)	3.6%
Notional gearing	57.5%
WACC Real pre-tax	6.3%
Vanilla	5.1%
Post tax	4.5%
Other financial metrics Dividend yield on equity RAB and year in year growth	5.0% yield and 2.1% growth
Cost of raising new equity	5.0%
Amount of debt assumed index linked	30%
Key financial indicators – average over a CP Cash interest cover (finds from operations: net interest)	About 3.0 times
Adjusted interest cover ratio (funds from operations less capital charges; net interest)	About 1.6 times
Funds from operations / debt	About 13%
Retained cash flow / debt	About 8%
Gearing (net debt / regulatory capital value)	Below 65%

Annex 2.5 ORR financing assumptions in recent price controls

Regulator	ORR
	Network Rail
Price Control	PR 08
Period	2009/10 - 2013/14
WACC Real pre-tax[17]	5.80%
Vanilla	4.75%
Post tax	4.18%
Key financial indicators – average over a CP Cash interest cover (finds from operations: net interest)	Forecast 3.1
Adjusted interest cover ratio	1.7
Funds from operations / debt	13.3%
FFO / total debt	n/a
Retained cash flow / debt	9.1%
Gearing (net debt / regulatory capital value)	63.1% (70-75% is the limit in Network Rail's licence condition)

[17] The ORR took a broad brush approach to the cost of capital for the investment framework in PR08 and used 6% as the cost of capital.