Cost of Capital – Response to Fluvius Criticisms

July 2020

Europe Economics
Chancery House
53-64 Chancery Lane
London WC2A 1QU

Tel: (+44) (0) 20 7831 4717
Fax: (+44) (0) 20 7831 4515

www.europe-economics.com

Contents

1   Introduction

This report was prepared for VREG by Europe Economics. In 2019 Europe Economics implemented VREG's weighted average cost of capital (WACC) methodology to derive a WACC for the Flemish system operator Fluvius. At the same time, Europe Economics also offered VREG some remarks on a series of further issues upon which VREG sought advice. VREG subsequently went to consultation on its proposals.

In June 2020, Fluvius and its advisors KPMG, Oxera and Prof Luypaert provided feedback to that consultation. VREG has asked Europe Economics to advise on to what extent VREG's position on the WACC and the other issues is defensible and consistent with the approach taken by other regulators.[1]

1.1   Structure of this document

We divide our responses into two sections:

- In Section 2 we set out how VREG might respond to the submissions of Fluvius and its advisors on WACC issues.
- In Section 3 we set out how VREG might respond to the submissions of Fluvius and its advisors on the additional issues upon which we had advised.

---

[1]   We note for completeness that all analysis and values in this document should be interpreted in a pre-COVID-19 context.

2   Responses on WACC Issues

In this section we consider the submissions of Fluvius and its advisors on WACC issues. When we turn to consider the submissions, we group the issues in the following way (largely grouping via the building blocks of the WACC):

- Risk-free rate
- Equity Risk Premium / Total Market Return
- Cost of Debt
- Overall cost of capital
- Other WACC issues

We note that the purpose of this document is not to reconsider VREG's methodology from scratch. It is focused solely on the question of whether VREG's position is defensible and consistent with the position taken by other regulators. Other regulators we shall consider will include:

- The Dutch ACM, which has responsibility for setting the Dutch energy sector WACC – we shall refer to this as the ACM;
- UK energy regulator Ofgem;
- The UK water regulator Ofwat (a precedent cited by Fluvius); and
- The Irish Communications regulator – we shall refer to this as ComReg.

We shall also consider three sets of cross-regulator regulatory advice

- The Council of European Energy Regulators (CEER) summary of the approach taken by European regulators to WACC regulation published in January 2020.[2]
- The guidance for WACC calculation in the communications sector issued recently by the European Commission[3] – we shall refer to this guidance as the European Commission Communications Sector Notice (ECCSN, for short). We note and emphasize that there is no equivalent European Commission Energy sector guidance nor any requirement upon VREG to conform to European Commission guidelines.
- The guidance for WACC calculation given by the UK Regulators Network (UKRN), which is closely followed not only by Ofwat and Ofgem but also by the Northern Ireland Authority for Utility Regulation, the Civil Aviation Authority (CAA) and Ofcom.[4]

---

[2] CEER (2020), Report on Regulatory Frameworks for European Energy Networks 2019, https://www.ceer.eu/documents/104400/-/-/27978c4f-4768-39ad-65dd-70625b7ca2e6

[3] "Commission Notice on the calculation of the cost of capital for legacy infrastructure in the context of the Commission's review of national notifications in the EU electronic communications sector", Official Journal of the European Union, (2019/C 375/01) and an accompanying paper "Accompanying the document: Commission Notice on the calculation of the cost of capital for legacy infrastructure in the context of the Commission's review of national notifications in the EU electronic communications sector", Commission Staff Working Document, SWD(2019) 397 final

[4] Other members of the UKRN are:
- The Financial Conduct Authority (FCA)
- The Financial Reporting Council (FRC)
- The Legal Services Board (LSB)
- The Office of Rail and Road (ORR)
- The Payment Systems Regulator (PSR)
- The Single Source Regulations Office (SSRO)
- The Information Commissioner's Office (ICO)

It may assist the reader in interpreting what follows to be aware that in respect of all WACC parameters our advice will be that VREG's position is defensible and consistent with that adopted by other regulators.

2.1   Risk-free rate

The method adopted in our original VREG WACC report was as follows. The risk-free rate is calculated by giving a three quarters weight to the 12 month average of Belgian 10 year nominal government bond yields and a one quarter weight to the 12 month average of German 10 year nominal government bond yields. The figures and result are below.

Table 2.1: Summary of risk-free rate calculation

Country	12 months Average (01/01/2019 till 31/12/2019)	Weight
Germany	-0.21	25%
Belgium	0.19	75%
Average	0.09	

This method is the same previously employed by VREG except that in previous decisions it was argued that there should be an uplift for the impacts of European Central Bank (ECB) quantitative easing (QE). We argued that whilst such an uplift may have been appropriate in the past when it was expected that QE would be reversed quickly, that has now been established as a new normal and the same underlying concepts behind the previous uplift imply that no uplift should be used on this occasion.

We identify four main contentions of Fluvius with respect to the risk-free rate of return:

- That VREG's use of a weighted combination of Eurozone bonds does not give sufficient weight to Belgium's domestic country risk.
- That VREG ought to continue to apply an "ECB premium" to adjust for the effects of the ECB's quantitative easing programme.
- That VREG's implicit interest rate outlook is inconsistent with that of the Federal Planning Bureau.

We shall now consider these issues in turn.

2.1.1   The inclusion of non-Belgian Eurozone bonds in the risk-free yield estimate

Fluvius argues that

- a weighting between several countries is only justified if a company actually has exposure to several countries. In the case of Fluvius, the operational risk lies entirely in Belgium and there is no reason for such a weighting; and
- the VREG method does not fully take into account the country risk for Belgium.

Fluvius argues that the rationale for using generic WACC parameters from across multiple countries is that the firm whose WACC is being assessed is exposed to cost or revenue risk from those other countries. That

---

- The Pensions Regulator (TPR)

The Cost of Equity study that is our main source here states: "*Although this subgroup of UKRN members* [ie the CAA, Ofcom, Ofgem and the Utility Regulator] *commissioned this report, representatives from other UKRN members, notably Ofwat, were involved in its governance.*" See https://www.ukrn.org.uk/wp-content/uploads/2018/06/2018-CoE-Study.pdf

would certainly be *a* rationale, but it is not in our view the sole (or even perhaps main) one. Instead, the argument is as follows.

The Eurozone is a single currency area without currency conversion risk. If it were a perfectly integrated capital market that would imply it would have a single risk-free rate of return. It is often argued that that single risk-free rate of return should be the lowest government bond yield available across the Euro Area – typically the German government bond yield at the relevant maturity (though, advising Fluvius, KPMG uses a method based on German, Luxembourg and Dutch AAA bonds). Alternatively, it is sometimes argued that that single Eurozone risk-free rate should be seen as arising from a weighted combination of government bond yields across the zone (including not only AAA country bonds).

The VREG method implies that the Eurozone is not a perfect capital market, but that there is some modest segmentation to the extent that on the risk-free rate side the Eurozone's underlying risk-free rate (the German bond rate) carries only a 25 per cent weight, with 75 per cent allocated to Belgium. KPMG uses a conceptually-similar approach, applying a Belgian "country risk premium" to its estimate of the Eurozone risk-free rate.

It could perhaps be argued that VREG's method here is in some tension with other elements in the VREG method (eg the ERP), which give a greater weight to European-wide concepts and less to Belgian-specific concepts. On the other hand it is quite normal for regulators to place some weight upon domestic yields. The VREG method is in line with the ACM method used in the Netherlands. Irish regulatory authorities such as ComReg estimate a range for the Eurozone risk-free rate and then place the domestic risk-free rate within that range. The CEER notes that whilst "*risk-free rates are usually evaluated on the basis of their own national government bond interest rates*" some regulators "*use the interest rates based on the government bonds of selected foreign countries (AA or higher rated) or OECD averages.*" And the ECCSN guidance is to use solely domestic bonds.

In our view the underlying concept in the VREG method – treating the Eurozone as being one capital market that is materially but not perfectly integrated – is clear and transparent and its method of implementing that concept is intuitive and defensible. Risk-free rate estimation, especially within the Eurozone, is subject to very considerable methodological uncertainty and there is no clear basis for saying that the method Fluvius recommends is "correct" and the VREG method "wrong".

An additional consideration is that, if the VREG had adopted a purely Belgian risk-free rate, it ought for consistency to have adopted a purely Belgian ERP. That would have meant a material reduction in the ERP of around 150 basis points – far larger than the uplift to the ERP proposed by Fluvius.

We conclude that VREG's position is defensible and broadly consistent with that adopted by other regulators.

2.1.2 Whether VREG ought to continue to apply an "ECB premium" to adjust for the effects of the ECB's quantitative easing programme

In previous decisions, VREG had adjusted the risk-free rate estimate upwards to allow for distortions created by the effects of the ECB's quantitative easing (QE) programme. This reflected two closely-related ideas: first the expectation at the time that QE might be reversed over the period of the price control (leading to yields rising) and the economic reasoning that a temporary policy-imposed reduction in interest rates would be experienced by firms as a (policy-intended) temporary capital cost reduction that would not be embodied in prices across the economy generally (ie prices would not fall to reflect that temporary capital cost drop), but would instead provide incentives for firms to invest more. In other words, it was treated as if it were a classic piece of macroeconomic aggregate demand stimulation, which if a utility regulator offset it would create a distortion between incentives to invest in regulated utilities versus in other assets (such as software firms, clothing manufacturers, construction or any other part of the unregulated economy).

By the time of the current decision, however, QE has been held in place for a sufficiently long time, and is expected to continue to be maintained for a sufficiently long time into the future, that its duration exceeds that of a standard macroeconomic investment cycle (the period from investment to depreciation to residual value). Economists refer to such a period as the "long term". When a macroeconomic stimulus policy is maintained for the long-term, it *will* eventually become embodied in prices (ie prices across the economy will eventually fall to reflect the capital cost drop). So the same reasoning that said that quantitative easing that was only a short-term stimulus measure should not be carried through into a determined WACC for a regulated utility applied equally to long-term quantitative easing implies that it *should* be embodied in prices – ie that VREG should not continue to apply an "ECB premium".

Fluvius argues that it is inconsistent for VREG to use such an up-to-the-minute basis for estimating the risk-free rate whilst at the same time basing the ERP estimate on a very long-term dataset. We shall return to this point when we consider the ERP and TMR below.

For now, however, we note that VREG's approach to the risk-free rate here of not including any adjustment for the effects of QE is in line with the approach of the ACM, Ofwat, Ofgem, and the advice of the UKRN and the ECCSN.

We thus consider VREG's position on this point defensible and entirely in line with standard current regulatory practice.

2.1.3 Whether VREG ought to adjust the risk-free rate to take account of potential future interest rate movements

VREG uses the current yield on nominal government bonds for its risk-free rate estimate. Fluvius argues that VREG should take account of the fact that the Federal Planning Bureau anticipates a rise in long-term interest rates in the Euro Area of around 1 per cent between 2019 and 2024, and says that VREG should allow headroom to take account of this possibility.

On this point VREG's position is, as we shall see below, defensible and in line with the approach adopted by some other regulators. Furthermore, were VREG to adjust its methodology to include either a forward view of future interest rate changes or allowance for the possibility that future interest rates rise, current regulatory best practice would not be to adopt the "headroom" approach Fluvius proposes.

VREG's focus on 10 year bond yields embodies a view at the point of the review as to the evolution of interest rates over the next ten years. It does not, however, reflect any evolution of view as to how those rates themselves might evolve over the period of the control. That is defensible and in line with regulatory practice in a number of countries and sectors. For example, it is the approach adopted by ACM and recommended by the ECCSN.

Regulators that take account of the possibility of future interest rate changes do so for two main reasons:

1. Some do so on the basis that the reference point in time at which the price or revenue cap is set is in the future – eg at the mid-point of the price control or at the end. Since the regulatory thought experiment concerns what costs will be at some future date, they need to have an expected cost of capital at some point ahead in the future. Regulators adopting this approach do not typically use forecasts for future interest rates movements made by governments (as Fluvius proposes). Rather, they use the market's expectations of future bond yields as exhibited in forwards markets or as implicit in the yields on bonds of differing maturities.
2. Other regulators do so on the basis that movements in central bank policy rates are outside the control of the regulated firm and yet may affect its costs much as changes in inflation affect costs. So for much the same reason that prices and regulatory asset values are indexed to inflation, some cost of capital parameters (eg the risk-free rate and/or the cost of debt) are indexed to changing bond yields.

Some regulators (eg Ofwat) do both of the above. Some regulators (eg Comreg) have annual updates of the WACC as a whole and thus an equivalent to the indexation above occurs automatically via that review process.

We note and emphasize that uncertainty regarding risk-free rate movements is not one-directional: it is not always a matter of how far the risk-free rate might rise. Over 2019, for example, government bond yields across the Eurozone fell by around one full percentage point. A risk-free rate allowance set on spot or recent government bond yields from 2017 or 2018 would have resulted in a risk-free rate that was markedly higher than the actual realised bond yields, not lower. A "headroom" allowance for what many regulated entities argued, in 2017 and 2018, were temporarily downwards-distorted rates would have made that spot-rate-based over-statement even more excessive.

We conclude that VREG's method is defensible and in line with that adopted by other regulators, and that if VREG were to change its methodology, best-practice would be to use implied forward rates and/or indexation rather than the headroom method proposed by Fluvius.

2.2 Equity Risk Premium / Total Market Return

The CAPM model can be expressed in two main ways:

Return on asset A = risk-free return + Beta on asset A x Market Risk Premium

or, mathematically equivalently

Return on asset A = risk-free return x (1 - Beta on asset A) + Total Market Return x Beta on asset A

The total market return and market risk premium are thus related as follows:

Market Risk Premium = Total Market Return – risk-free return

or, again equivalently

Total Market Return = Market Risk Premium + risk-free return

These latter two equations can be seen as reflecting two broad conceptions of the relationship between the Total Market Return (TMR) and Market Risk Premium (MRP). In the first conception, as reflected in the first of these equations, the TMR is the start-point and the MRP is derived from it by deducting the risk-free return. In the second conception, as per the latter of these equations, the MRP is the start-point and the TMR is built up from the building blocks: the MRP and risk-free return.

The VREG method reflects the latter of these conceptions. VREG produces its best-estimate of the risk-free return (from government bond yields) and its best estimate of the MRP (from the well-known long-run data-set produced by Dimson, Marsh and Staunton – usually referred to as DMS). The MRP drawn from the DMS series is that for the Eurozone, and VREG uses an average of the arithmetic and which is 4.81 in the DMS edition used.

Fluvius and its advisor KPMG have two key objections to VREG's approach:

- That VREG ought to take account of the MRP and risk-free return together – ie should adopt the former conception above, whereby the TMR is seen as the start-point;
- That VREG ought to focus on the arithmetic average as versus placing some weight upon the geometric average.

We shall consider these objections in turn.

2.2.1 That VREG ought to take account of the MRP and risk-free return together

Fluvius and KPMG contend that it is not coherent for VREG to assess the MRP in the way that it does, completely independently of the value of the risk-free return. They contend that the implied TMR proposed by VREG is markedly lower than that adopted by other regulators and lower than analyst views.

They appeal to previous analysis conducted on UK data by PWC on behalf of Ofwat (which was later extended by Europe Economics for Ofcom) on the correlation between movements in the risk-free return and in the MRP over time. This analysis suggested that there is a less-than-complete negative correlation with around 0.65 of any given reduction in the risk-free rate being reflected in an increase in the MRP. The implication is that, whilst the TMR is far-from invariant with respect to changes in the risk-free return (dropping around 0.35 per cent for every 1 per cent reduction in the risk-free return), the MRP is not invariant either.

One potential implication is that if one is using a very long-term historic series such as DMS, if one used that DMS MRP in a period in which the risk-free return is currently far below the level typical over the historic period in which the MRP was calculated, the MRP would be under-stated. Similarly, if one used the DMS TMR for that same period it would be likely to be over-stated.

The approach Ofgem, Ofwat and the UKRN more generally have adopted to this issue in the UK is twofold. First, whilst they do present their results in terms of the overall TMR they have sought to impose (downwards) adjustments on the historic DMS-type TMR data (DMS themselves recommend a one percentage point reduction relative to historic TMRs). Second, they have constructed new forwards-looking TMR estimates based on (fairly elaborate) Dividend Growth Models. These forwards-looking models have tended to carry the most weight in Ofgem and Ofwat's thinking and have produced current TMR figures materially lower than the DMS estimates.

We note that the VREG approach is that adopted by ACM and recommended by the ECCSN. Furthermore, we note that if the MRP and risk-free return are being considered together, they should relate to the same country concept. It is common ground between VREG and Fluvius that the risk-free rate should be largely a Belgian risk-free return (albeit that VREG places some weight upon a Eurozone risk-free return as discussed above). Furthermore, when betas are calculated they are calculated on the basis of domestic indices. Domestic energy asset value changes are likely to be more highly correlated with domestic asset markets than with European-wide markets, so the use of domestic indices is likely to result in an elevated beta. Given that the risk-free return is (at least largely, and according to Fluvius should be wholly) a Belgian return and that the beta estimated is with respect to domestic markets, the correct TMR or MRP concept to pair with these – especially in the context Fluvius argues for of a paired consideration – is a Belgian MRP or TMR.

If VREG had used the Belgian MRP from the DMS series the result would have been an MRP around 1.5 percentage points lower than the Eurozone-based figure VREG has in fact used, as we see in the table below. Belgian equity returns have, over time, been markedly lower than those in any other Eurozone state except Austria (see **Fout! Verwijzingsbron niet gevonden.**, later).

Table 2.2: Belgian versus Eurozone MRP values from the DMS series

	[1] Geometric Mean (%)	[2] Arithmetic Mean (%)	[3] Average [1] & [2] (%)	[4] Market Cap (€m)*
Belgium	2.10	4.10	3.10	124,463
Eurozone	**3.39**	**6.22**	**4.81**	**4,929,363**

Thus when Fluvius and its advisors compare the implied VREG TMR with TMRs from other regulators, the correct expectation should be that the VREG TMR is materially lower than those elsewhere – perhaps as

much as 1.5 percentage points lower than levels typical across the Eurozone – not that the VREG TMR should be the same.

We note, furthermore, that at 4.81 per cent the MRP chosen by VREG is not out of line with that identified by CEER as typical in its January 2020 Report on Regulatory Frameworks for European Energy Networks 2019, where it states, of the MRP, that "*The value of the market risk premium is often in the range of 4% to 5%, independent of electricity or gas sector and TSO or DSO regulation*".[5]

The implication of the above discussion is that, whilst VREG's position is defensible as being in line with that adopted by other regulators, if its position were to change it ought not to take the form proposed by Fluvius. Instead, it ought to estimate either a Belgian TMR or a TMR arising from the same weighted combination of Belgian and Eurozone data that it uses for the risk-free rate and perhaps also either adjust some of the historic DMS data for one-off past unrepeatable gains (as DMS recommends) or produce a new forwards-looking TMR based on a DGM (as Ofwat and Ofgem use). Indicative provisional calculations suggest that if such an approach were to be adopted, the resulting TMR would not be greatly different from that proposed by VREG under its existing method. It should also be noted that some of the methods used (eg DGM) produce results with large ranges of uncertainty. That makes it likely that the range estimates under an alternative method would include VREG's existing estimate. That in turn might imply that such a change of methodology at this stage is disproportionate.

2.2.2 That VREG ought to focus on the arithmetic average

In its methodology, VREG uses a weighted combination of the geometric mean and the arithmetic mean, as per the table above. Fluvius argues that it should instead focus solely on the arithmetic mean.

The main argument for the use of the arithmetic mean is as follows. If historic data is interpreted as a series of independent draws from the probability distribution facing investors, it can be seen as created a sample from which we can approximate future returns expectations (perhaps with some appropriate adjustment, such as the exclusion of data from non-repeatable historic periods, as discussed above). The expected value of such a distribution is the arithmetic mean of the distribution.

A number of arguments are offered for the use of geometric means. Some focus on the possibility of mean reversion of returns over time. An alternative argument is that returns are lognormally distributed, not normally distributed, and the mean of a lognormal distribution can under certain circumstances be similar to the geometric mean of a normal distribution.[6]

However, the main argument used recently by regulators for giving some weight to geometric returns has concerned the holding periods of utilities investors. The contention is that a key class of investor will not trade in and out of utilities stocks but instead (for investment strategy purposes or compliance requirements associated with the nature of their investment portfolios) have extended multi-year holding periods. That could potentially mean the geometric return over the holding period is more relevant than shorter-term returns.

A secondary argument has been that the historic wedge between arithmetic and geometric returns reflected volatility in returns within periods that is higher than current volatility between periods. So the raw use of long-run arithmetic returns would exaggerate future expected returns (since the forwards-looking volatility premium of arithmetic over geometric returns will be lower than in the past).

The upshot of these arguments is that regulators have for many years, when making use of DMS data, taken values that lay between the arithmetic and geometric means. VREG's deployment of that principle is not in

---

5   See https://www.ceer.eu/documents/104400/-/-/27978c4f-4768-39ad-65dd-70625b7ca2e6 p126, para 4.3.3.1.
6   A version of this argument appears in Smithers & Co (2003), *A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K.* - https://www.ofgem.gov.uk/ofgem-publications/50794/2198-jointregscoc.pdf

itself controversial. Though some regulators do indeed use solely the arithmetic mean (eg Comreg, and the ECCSN advises doing so), others including Ofgem, Ofwat and the ACM use a figure between the arithmetic and geometric means. ACM indeed uses the same methodology as VREG (i.e. taking a simple average of the geometric and arithmetic mean).

Accordingly, we consider VREG's position defensible and broadly in line with that adopted by other regulators.

2.3 Cost of Debt

The cost of debt calculation was based on yields for Thomson Reuter's A-rated utility (bonds) index with 10 years to maturity. This is the same rating and maturity that has been used previously by VREG (and is also in line with that used by ACM).

The calculation included the following steps:

- Historic (average over last 10 years) and new (average over last 12 months) yields calculated.
- Weighted average taken: 60 per cent weight to historic and 40 to new.[7]
- 15 basis points added for external transactions costs.

Final value reported: 1.9 per cent.

Fluvius offers two comments:

- That it would be better to use 20 year bonds than 10 year bonds;
- That previous precedent suggests VREG's value is too low.

We shall consider these in turn.

2.3.1 That it would be better to use 20 year bonds than 10 year bonds

Sometimes regulators choose the maturity of the benchmark government bond yields in accordance with the average asset life of the regulated sector. There is also some tendency to increase the benchmark bond maturity when price controls are over longer periods.

For example, Ofgem relies only on 20-years index-linked UK government bonds, partly on the basis that the yields of these bonds are less volatile than those of gilts with lower maturity, partly to match the average asset life and partly because of Ofgem's 8 year price control cycle. Ofwat uses 15 year index-linked bonds to match the average remaining asset life of water sector assets. By contrast, Ofcom, with a three year price control period, has sometimes placed greater weight upon 5 year bonds.

However, the use of 10-year nominal government bonds remains the most widely used benchmark, including in Energy sector regulation,[8] and we consider it fully defensible for a 4 year control period for the following reasons:

- 10-year nominal bonds tend to be traded more frequently and therefore this decreases the risk of any liquidity premium distortion.[9]
- Nominal bonds with longer maturities are riskier because of the greater uncertainty associated with inflation and therefore their yield will reflect a non-trivial inflation risk premium component. Therefore, in the absence of index-linked bonds, 10-nominal bonds should be preferred.

---

[7]   Previously VREG had used a 65:35 ratio.
[8]   According to the January 2020 CEER report on Regulatory Frameworks for European Energy Networks, 2019 "*The most frequently used bonds have maturities of 10 years*" – See para 4.3.1.1 ("Evaluating Risk-free Rates") of https://www.ceer.eu/documents/104400/-/-/27978c4f-4768-39ad-65dd-70625b7ca2e6
[9]   See the discussion of liquidity issues in Section 2.5.1 below.

- A focus on very long-term bonds when the price control period is fairly short (in the case of Fluvius, from 2021 to 2024) places insufficient significance upon the opportunity for the regulator to revise the WACC allowance (up or down) and other costs multiple times across asset lives.

2.3.2 That previous precedent suggests VREG's value is too low

Fluvius notes that VREG's cost of debt (2.14 per cent) is lower than that proposed by a number of other regulators in recent years (with decisions ranging from 2.2 per cent to 3.97 per cent) and that its advisor KPMG proposes a range of figures higher than VREG's (2.41-2.44 per cent).

The risk-free rate can be decomposed into the risk-free rate and the debt premium (the excess of the cost of debt over the risk-free rate). The debt premium used by VREG is 2.05 per cent. CEER notes that "*The values of debt premiums used by the regulators are in most cases between 0.40% and 2.00%.*"[10] VREG's debt premium is thus at the very top end of the debt premium range typical for European NRAs.

In addition, we observe two closely connected points. First, most of the other regulatory determinations quoted by Fluvius were prepared some time prior to VREG's draft decision. Over 2019 bond yields (affecting both the risk-free rate and the cost of debt) fell markedly across Europe as macroeconomic conditions worsened and expectations of future ECB policy changed. It should therefore be no surprise that VREG's value is lower than that from regulators' decisions from early periods. Indeed, that is reflected (this is the second point) in KPMG's own proposed values, which although they are slightly above those proposed by VREG are still well below the values proposed by almost all of these other regulators.

Accordingly, we consider VREG's position defensible and not inconsistent with the decisions taken by other regulators in earlier periods.

2.4 Overall cost of capital

Fluvius offers two main comments regarding the cost of capital overall:

- That it is not in line with the market
- That it arises from VREG always choosing a low-end value

Let us consider these in turn.

2.4.1 That the overall WACC is not in line with the market

Fluvius argues that the WACC proposed by VREG is not in line with the market. However, the values VREG proposes are all drawn from contemporaneous market data except for the MRP / TMR (which we addressed in detail above). Fluvius compares the VREG proposal (3.5 per cent) with the WACC established by other regulators in Belgium and Western European countries (ranging from 4.2 per cent to 6.1 per cent).

They argue that this figure shows that the VREG proposals is the lowest WACC. They point out that if one takes the average of the other regulators they consider, one arrives at a WACC of 5.2 per cent. They conclude from this that a (real terms) WACC of 3.5 per cent is not in line with the market.

In our view this argument misrepresents the situation in three main ways. First, it is not a representation of the view of the market. It is a summary of the determinations of other regulators. Second, most of these decisions were set some time ago (often more than one year). During 2019 market conditions evolved very markedly. In particular there was a large further reduction in bond rates affecting both the risk-free rate (and hence TMR) and cost of debt. It should thus be no surprise that a late 2019 decision would be at a lower level than decisions from early 2019, 2018 or earlier. A third point is that, historically speaking, Belgian total

---

[10] See para 4.3.2.1 of https://www.ceer.eu/documents/104400/-/-/27978c4f-4768-39ad-65dd-70625b7ca2e6

market returns have been more than one percentage point lower than those elsewhere in the Eurozone. It should therefore not be expected that a determined WACC for Belgium will be as high as determined WACCs elsewhere.

Accordingly, we consider VREG's position defensible and not inconsistent with the decisions taken by other regulators in earlier periods and different countries where the WACC ought to have been expected to be higher.

2.4.2   That it arises from VREG always choosing a low-end value

Fluvius contends that VREG's approach tends always to choose a low-end estimate. It is true that if a regulator has a range of values for WACC parameters and chooses at every point the lowest individual parameter, it is likely that the overall WACC thereby produced will be below the lower bound for the overall WACC. The reason is that it is very unlikely to that the low-end values for WACC parameters will all occur at the same time. So if there were, say, a 25 per cent chance that each of four WACC building block parameters were at their lower bound, then if their probabilities were independent the likelihood that the overall WACC would be at the level implied by all four building blocks being at their lower bound would be only 0.4 per cent. Matters may be even less likely than that if there is a tendency for some offsetting – so some variables are higher than average when others are lower.

However, it is not our understanding that this is the approach VREG has adopted. It has sought its best estimate of the risk-free rate, the ERP, the beta and the cost of debt and combined these using its best-estimate of the gearing. Accordingly, we consider VREG's position to be defensible.

2.5   Other WACC issues

2.5.1   Illiquidity premium

VREG has asked us to comment upon whether there should be an illiquidity premium for Flemish distribution system operators.

Some regulators have started to use liquidity premiums in various parts of their analyses. For example, in its PR19 decision, Ofwat took account of actual or potential liquidity at four points of its analysis:

- It argued that liquidity issues should guide its selection of bonds for risk-free rate analysis.
- It conducted liquidity tests ("Dimson tests") in the estimation of beta.
- It included a liquidity premium allowance in its analysis of the debt premium (thereby reducing its estimate of debt beta).
- It included a transactions cost allowance in the cost of debt.

Here we would distinguish between analysing for the risks of illiquidity (eg the Dimson Test) and adding in illiquidity uplifts to the WACC. As a general principle we consider that material illiquidity means that the CAPM model does not apply. The answer to that is not to simply use the CAPM and then add something on for liquidity. It is to either produce a superior overall model (not so far in existence) or to consider the results of multiple models (eg CAPM, the Dividend Growth Model and the Third Moment CAPM model) and ranges for CAPM parameters and to allow the presence of liquidity to have some weight in guiding the application of regulatory discretion in choosing where to determine the WACC within the ranges thus derived.

Liquidity tests should mainly serve to aid us in choosing benchmark variables. If we have two potential benchmarks (eg two comparator firms' equity from which betas could be estimated) and they are otherwise

equally good but one has liquidity problems (eg fails Dimson Tests) whilst the other does not, one should normally focus upon (or place greater weight upon) the benchmark that is sufficiently liquid.

As regards the use of liquidity premium in the debt premium, we consider that to be an error. We also note that its being an error is a mathematical implication of the recent UK Consumers and Markets Authority preliminary findings in the NATS En Route Limited appeal. In our view the debt premium should, in a CAPM calculation, be treated as arising purely from a combination of the wedge between the actual and promised cost of debt and the debt beta, with no "third variable" allowing for liquidity. However, we note that many UK regulators do include such an adjustment and have done for more than a decade.

As to transactions costs, these tend to be at a rather low level (typically below 10 bps) and in any event to be potentially interpretable as the inclusion within the WACC of a cost allowance that could be understood as operating expenses (eg the cost of employing treasury function staff).

We conclude that VREG's non-inclusion of a liquidity premium is defensible.

3 Other issues

3.1 Issues concerning the RAB

Fluvius has responded to the approach proposed by VREG for remunerating the regulated asset base (RAB) in the 2021–24 control period and has put forward four main criticisms. The criticisms are all related to the VREG's change in the treatment of the RAB for future control periods. They relate to:

- The regulatory surplus (RS) component of the RAV;
- Effects upon investor expectations (risk);
- Borne costs;
- The change is not in the public interest.

Our previous report to VREG has already set out our position on these issues. We do not repeat or modify our advice there. In this section we focus solely on presenting how in our view VREG might seek to defend its own position.

3.1.1 RS relevant component of the RAB:

Fluvius has said that the current RAV — including the revaluation surplus (RS) — shows a structural underestimation of the real economic value of Fluvius. The VREG has separated the RS (an important part of the RAV) and proposes to not remunerate it.

VREG's position here is that the relevant concept is that of cost recovery in respect of actual costs incurred, historically. Given that position, the most straightforward defence of VREG's position is as follows. Since the RS arise from an upwards revaluation of the RAV they constitute a windfall gain for Fluvius' asset-owners. Since no costs were historically borne in acquiring the RS there are no capital costs to compensate via a WACC allowance.

3.1.2 Investor's expectations (risk) affected

Fluvius contends that the proposed change is a substantial departure from the previous approach to remunerating the RAB. They allege that such a change in the approach will increase the risk for investors and reduce their confidence in the regulatory framework, putting at risk the whole approach (whereby investors obtain regulatory commitment to remunerate efficient capital costs over the life of the assets, hence reducing the cost of financing investments).

Methodological changes do happen in price reviews (in fact, the whole exercise is in recognition that the regulatory framework cannot hold indefinitely and some elements require re-assessment). This also affects RAVs, as these can be changed (as long as this is done in a transparent and consistent way).[11]

This is also recognised in Oxera's submission (Fluvius' consultants) recognise when they say that: "the effectiveness of the RAB as a regulatory tool crucially depends on the quality and predictability of the

---

[11] In our previous paper we discuss that possibility as follows. "RAV depreciates over time as the assets age, and increases with new investment, all of which imply adjustments in the RAV". In addition to these changes, there can be other kinds of adjustment applied, for example, "some assets may become obsolete" and as a consequence their value is removed from the RAV. Another form of adjustment occurs when the "RAV is automatically indexed by inflation or some other measure of allowance for prices changing through time". Finally "a third form of adjustment can be applied (sometimes in the communications sector or other sectors with rapid technological advance) whereby the RAB is, at intervals, revalued to the cost of investing in an equivalent modern asset".

regulatory framework". But that "this does not prevent regulators from changing their regulatory frameworks, including their approach to the treatment or determination of the RAB, over time".[12]

The fact that RAVs can be changed, is hardly a surprise in regulatory practice and all stakeholders are aware of it (in 2014, Electrabel's shares were valued on the basis of the RAV). Indeed, the RS themselves arise from a change in the RAV.

Hence, the issue here is not so much whether this can be done (RAVs change in practice) but whether the change VREG proposes is correct. The most straightforward defence of VREG's position on this issue is simply that it is correct in deeming there to be no cost recovery required on the RS component of the RAV since there were no costs incurred in acquiring it.

3.1.3   Borne costs

Fluvius has said that a change (in the reward of RAB) cannot be justified on the grounds that there have been no costs associated with financing RS. Rather, recent financing decisions have been made on the basis of the full RAB value (including the purchase of Electrabel's equity in 2014 and numerous debt issuances), so it cannot be said that Fluvius' owners have not borne actual costs in financing the whole RAB.

Our understanding of the situation with respect to recent transactions is as follows. The most recent major transaction was in 2014 when Electrabel left the DSO-group of Eandis. The remaining shareholders, mainly the cities and municipalities, took over the shares.

VREG's analysis is that within days of the transaction, the cities and municipalities extracted cash from their DSO's equal to sum that had been payed to Electrabel, meaning that in VREG's view in net terms the assets were acquired without cost to the shareholders. Rather, VREG views there as having been a classic instance of gaming of the regulatory framework, whereby the DSOs took on new loans, leading to a reduction in the credit rating of the Eandis Group (from A1 to A3), resulting in higher interest rates and higher tariffs to consumers.

3.1.4   The change is not in the public interest

Fluvius has argued that the change in capital compensation of the RAV has a detrimental "distributional effect". The "distributional effect" defines the transfer of wealth from owners to consumers that the proposed change would imply (energy consumers will pay lower charges, at the expense of owners earning a lower return on their invested capital). In this case, municipalities would either have to increase tax receipts or reduce spending by an amount equivalent to the reduction in dividend. Depending on the source of these tax increases or spending cuts, different parts of the Flemish economy could effectively fund VREG's proposals.[13]

We believe that the way to interpret this objection of Fluvius is as saying that, although it is municipalities not individuals who are affected by the lost value of their shareholdings, that will nonetheless spill over into impacts on consumers, via impacts on their taxes and public services. We believe this argument is a means of spelling out the implications of the above three arguments rather than a new additional argument itself.

---

[12]   Oxera later says that this needs to be done following regulatory best practice, which means that changes to regulatory frameworks or methodologies should be: implemented as forward-looking (in a way that does not penalise the company or its owners for acting in line with the regulatory policy of the time); clearly signalled and consulted upon in advance; and be in the public interest (after taking account of any adverse impact on incentives for companies or investors).

[13]   Fluvius also describes the detrimental consequences of what defines as the "efficiency effect". This characterises the short-term reduction in cash flows and increased regulatory risk. This "is likely to be associated with negative public-interest consequences in the long term through increasing future charges and reducing investment". However, this aspect overlaps with the previously identified investor expectations (and risk for investors) and can be answered as part of "2: Investor's expectations (risk) affected".

3.2   Further specific issues

3.2.1   Trust

We have compared the bonds for Fluvius against other utility companies in Belgium (Elia, Fluxys and Resa). We kept the credit rating and years to maturity constant so the changes in the yield are representative of the difference in companies and nothing else.

We note that there is no Fluvius-specific break observed in the series in relation to the date of when VREG started its public consultation process on the next tariff methodology (04 May 2020). That suggests that the VREG consultation has not been associated with any particular loss of investor trust.

Figure 3.1: Yields on a selection of Belgian utility bonds
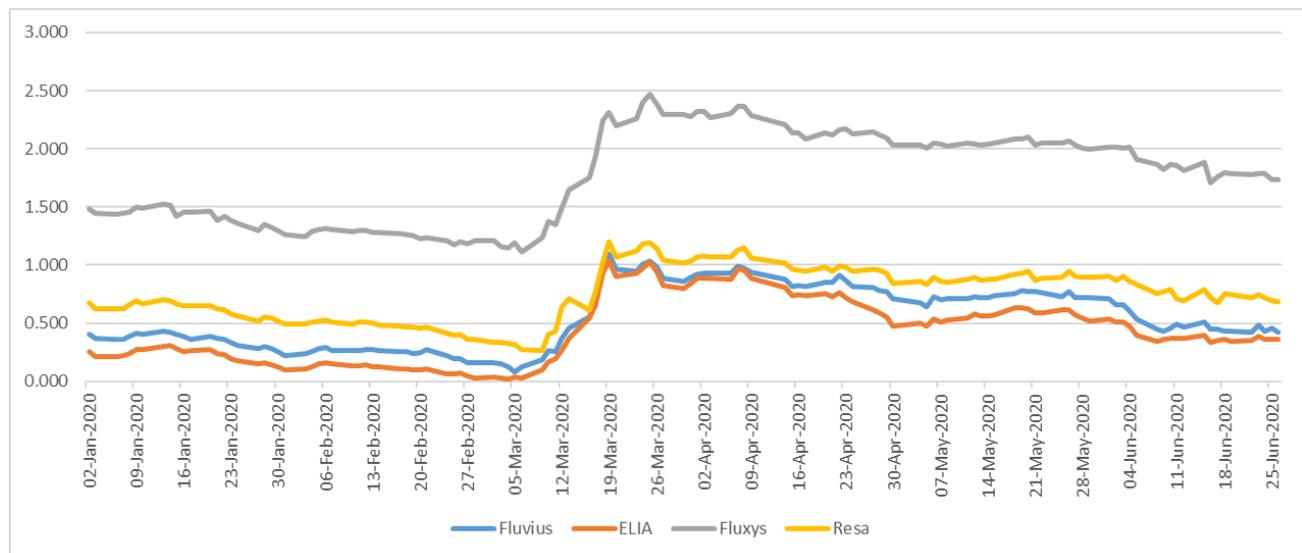
Notes: We note that ELIA has a credit rating of BBB+/Baa1 whilst Fluvius is rated at A3, despite ELIA's bonds having lower yields. There are a number of reasons yields can be lower despite lower credit ratings. These include that market perceptions of riskiness do not match with credit rating agency analysis or that the debt beta for the higher-rated firm is higher than the debt beta of the lower-rated firm – so although defaults are less likely for the higher-rated firm, when they occur they are more likely to be correlated with a low point in the general asset price cycle, thereby increasing the systematic risk of the bonds.

3.2.2   Effects of decisions upon ratings

Regulators differ in their financeability duties. Some have general duties to allow a return on capital that enables reasonably efficient firms to finance their functions. This duty is discharged if the WACC is set at the correct level, the operating and capital expenses allowances are adequate, depreciation is correct and so on, and if the overall methodology is coherent and correctly executed. Such duties do not typically include a requirement that inefficient firms (firms that, say, have inefficiently high operating expenses or that have historically borrowed at excessively high costs of debt) be able to finance their functions.

Other regulators have very specific duties to ensure that firms are able to finance the specific requirements the regulator imposes upon those firm - eg if a regulator mandates that a firm enact a specific set of capital investments so as to raise the quality of services that regulator often has a duty to ensure that the actual firm (even if inefficient) be able to finance the specific set of investments mandated of it.

That firms be able to finance their functions is often understood in terms of their being able to sustain some particular credit rating threshold - typically "comfortably within investment grade". There is not usually any

requirement upon regulators that credit rating should not drop within investment grade (eg a fall from A- to BBB+ would not usually be considered problematic).[14]

---

[14] In the current CMA appeals against Ofwat's PR19 price control decision it is contended by firms that Ofwat's decision has been responsible for a fall in their credit ratings. Ofwat's contention is that even if that were true, firms that are reasonably efficient remain with credit ratings that enable them to finance their functions.