POWER NI 2014 PRICE REVIEW: FINANCEABILITY AND ITS IMPLICATIONS FOR A REQUIRED PROFIT MARGIN

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Final report

Submitted by:

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IMPORTANT NOTICE

EXECUTIVE SUMMARY

Purpose

The Utility Regulator (UR) recently published a consultation on the approach it should take in relation to setting the next price control for Power NI.[1] One of the questions the UR considers is whether Power NI, as a relatively 'asset light' retail supply business, should be subject to a financeability test, as is typical for network sector price control reviews.

The UR has a duty under Power NI's operating licence to ensure that where price controls are applied to its licensed activities, that the company is able to finance those price controlled activities. In its Approach consultation, the UR has suggested that it can best discharge this duty by demonstrating that it has a robust, evidence based methodology for calculating allowed opex and margins including by showing that the return on offer:

- compares favourably with the returns that investors can get by investing in efficient businesses with similar risk profiles; and
- is capable of supporting and sustaining the investor capital that an efficient company would need for fixed assets and working capital plus access to a reasonable buffer to accommodate unanticipated financial shocks.

Power NI has asked CEPA to consider the question of financeability in the context of its 2014 price review and the implications this has for determining a required profit margin. This report provides our view of how to address this question.

Developing a financeability test

For the 2014 Price Control, the UR will need to set a profit margin and opex amount that allows efficient financing of the regulated 'asset light' retail activities of Power NI.

While we agree in principle with the proposal in the UR's Approach consultation that for a trading business like Power NI's, the UR's financeability duty might simply be interpreted to mean setting an efficient opex and profit margin, what this means in reality is given little consideration within the Approach document.

Based on our analysis of the issue, we find that:

- Consistent with how other sector regulators (and the Competition Commission (CC)) have interpreted their financeability duties, the return that is allowed by the UR in future retail price controls should be determined by reference to a *notionally* efficient business with the scale and scope of Power NI's licensed activities.
- A notionally efficient retail electricity business of the size and scale of Power NI's regulated activities, given its exposure to the risks of the all-island wholesale electricity market and its

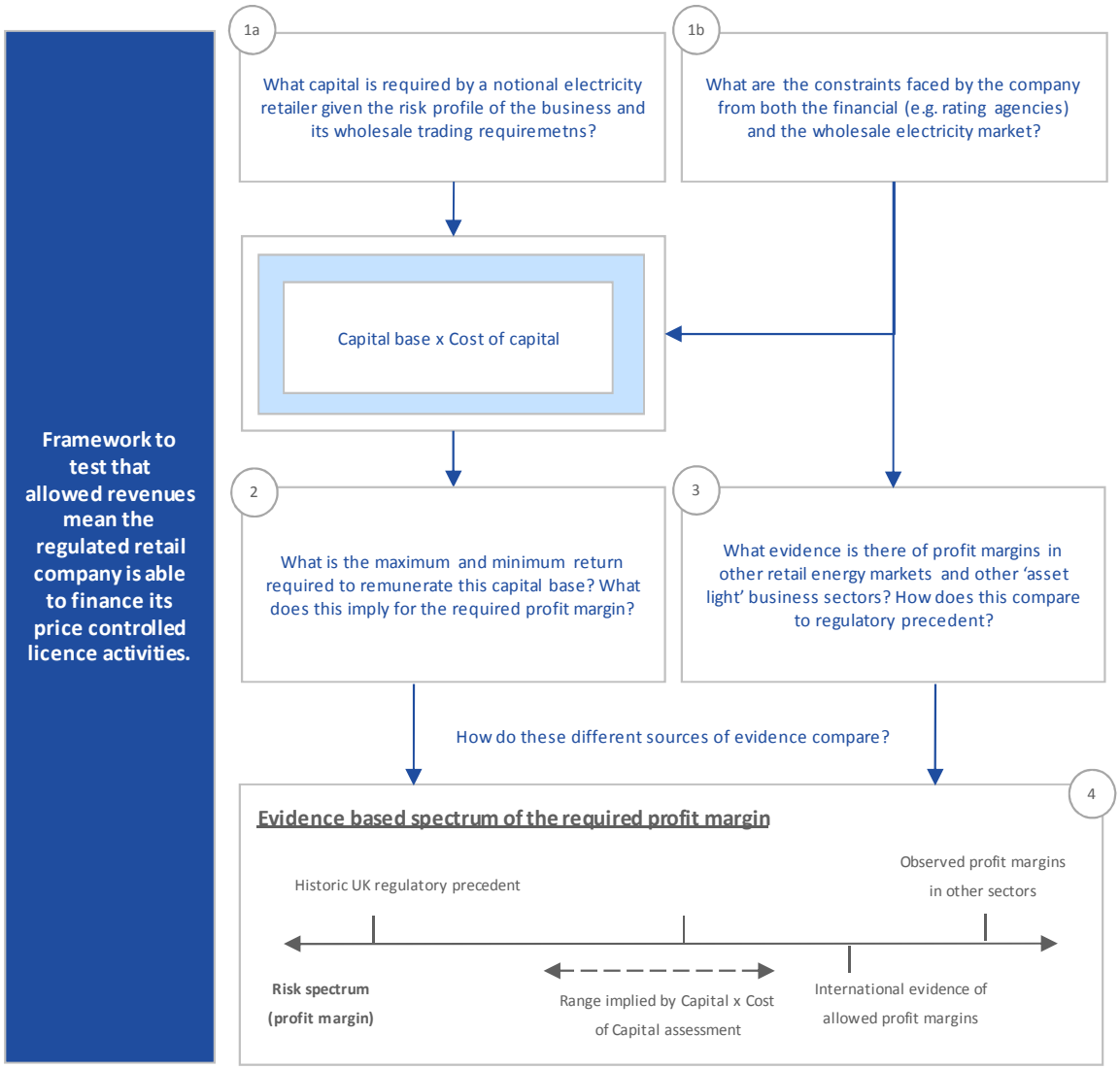
[1] UR (2013): 'Approach to the 2014 Power NI Supply Price Control'

price controls, would need to access various forms and significant quantities of capital, to efficiently trade, insure against risk and finance its activities.

- Financing constraints will apply to an 'asset light' business, with evidence from similar sectors suggesting that certain metrics are important for the financial markets and will constrain the business' credit quality, cost of finance and capital requirements and therefore the returns needed for the 'asset light' retail electricity business to finance its activities.

Therefore, while we agree with the UR's conclusion that it is not necessary or practicable to apply a *traditional* financeability test to retail price controls, we consider a form of financeability test is still required but this should reflect the characteristics of a retail electricity business in Northern Ireland (NI). Our proposed financeability test is illustrated in Figure E1 below.

Figure E1: Our proposed retail financeability test



Source: CEPA

Applying our financeability test

Based on the analysis and findings in this report, our conclusions are as follows.

Stage 1 of financeability test

We find that Power NI's regulated activities are facing increased business risks particularly from purchasing electricity in the all-island Single Electricity Market (SEM) and from the effects of greater retail competition.

Power NI is now the fourth largest retail electricity supplier in the non-domestic retail market, and is also experiencing a declining market share with increased competition in the domestic sector (c.170k plus domestic losses since 2010). The competitive retail landscape is placing new demands on its regulated retail business (e.g. from contract management and other pressures on cost to supply) while also increasing business risk through greater customer churn and the operation of the regulatory pricing formula in a competitive market.

We also show that the 'asset light' nature of the regulated activities can be expected to impact on investor perception of riskiness:

- As retail profit margins are thin relative to costs, investors are more likely to see their returns wiped out in the event of unanticipated shocks, as compared to a business where returns are a much larger proportion of the revenue base.
- This increases the exposure of investors returns to retail electricity supply risks, which in an environment of increasing operating and financial risk (e.g. reduced availability of hedges), can be expected to be a key concern for investors.

Previous regulatory protections from energy purchasing, volume and customer churn risks cannot be relied upon by the business in the new competitive landscape.

Overall we find that:

- price regulated electricity retail supply in the NI market is notably riskier than it has been in the past and, in particular, minimal comparison if any can be made to typical regulated companies, such as Regulatory Asset Base (RAB)-backed infrastructure; and
- given a relatively small asset base, thin profit margin relative to 'bought-in' costs and increasing risks, we would expect this to be reflected in the capital requirements, cost of finance and, therefore, required returns of the business.

Stage 2 of financeability test

Based on our assessment of the financing costs of the business, and evidence of its capital requirements (i.e. Stage 2 of our financeability test – see Figure E1 above), we estimate that the required return for the 2014 review control period could be somewhere in the range of 3.0-3.7% of projected turnover (or £10.5m to £13.0m in nominal terms).

This reflects a return on a core required capital base that is needed to support the day to day operations of the retail business, and a return on a contingent capital base that is required to effectively trade in wholesale and retail markets. It is therefore a total required return to remunerate the capital that needs to be employed by the regulated business.

We note both the supply entitlement[2] (St) and the wholesale purchasing cost (Gt) terms of Power NI's regulatory pricing restriction, in theory allow for the retail business to be funded for a return on its collateral capital base. In the case of the Gt (wholesale purchasing cost) term, this derives from costs of collateral incurred in the hedging market and with SEMO (the SEM market operator).

If however the cost of collateral or risk capital is not being remunerated through purchasing costs allowed under the Gt term, then the remuneration of the capital which is needed by the business to effectively trade, must be recognised elsewhere within the funding formula (i.e. the profit margin).

Given the real constraints in the hedging market[3] and the issues that this creates for non-vertically integrated organisations, we have considered the required return on a combined total basis (i.e. St and Gt). The return needed to be funded through the supply entitlement (i.e. St profit margin entitlement) could therefore be towards the lower end of our implied range of 3.0-3.7%. This however relies on part of the required total business return being funded through the Gt term over the course of the price control period.

Stage 3 of financeability test

Applying Stage 3 of our financeability test, we have reviewed evidence of allowed profit margins in other retail electricity price controls (international as well as UK and Ireland determinations) and observed profit margins in other retail and 'asset light' companies.

One of our main finding is that the comparators which the UR has cited in its Approach consultation (low risk historic UK based retail price controls) are not relevant to Power NI's regulated activities going forward, particularly given the business risk and the price control regime which applied at the time of these benchmark determinations.

These decisions were taken in very different retail and wholesale market contexts and may not properly account for the "risk capital" and the collateral requirements that are associated with forward purchasing of energy in liberalised wholesale electricity markets, such as the all-island Single Electricity Market (SEM).[4] This is also brought out of the findings made by Ofgem on required profitability as part of its retail market review.[5]

[2] Which includes the allowed profit margin.

[3] Power NI's response to the Approach consultation highlights a lack of contract volume availability and point in time strike prices from the shortage of liquidity in the SEM contract market and the general operation of the market.

[4] For example, wholesale price dynamics have changed significantly since the early 1990s (linked to greater volatility in international oil and gas prices) and larger collateral requirements now placed on electricity trading businesses.

[5] Ofgem (2009): 'The Retail Market Review – Findings and initial proposals'

In contrast, we find that going forward, certain Australian regulatory determinations and evidence of profit margins from the competitive GB market, may provide more useful benchmarks for considering Power NI's required profit margin.

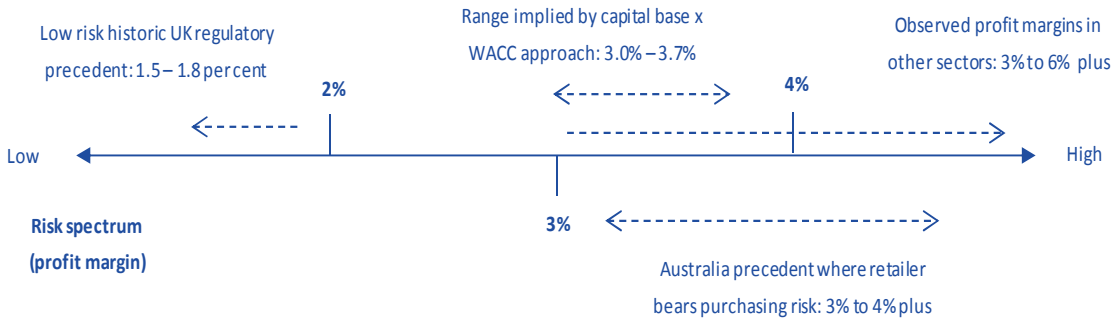
Australian regulators have over time increased their allowed profit margins as protections from wholesale energy purchase risk and competition have been removed. Given the increasing wholesale risks and capital requirements that Power NI's regulated business face, we believe these determinations are particularly relevant comparators for the 2014 review and suggest an appropriate profit margin would be in the range 3.0-4.0%.

Finally evidence from other retail sectors and 'asset light' businesses, together with previous analysis by Ofgem on profit margins (and the impact on margins from wholesale pricing risks) as part of the retail market probe, indicates that the required profit margin for Power NI's regulated business would be in the range 3.0-6.0% given the risk profile of its activities.

Stage 4 of financeability test

Figure E2 brings together our findings and the different pieces of the analysis into a risk spectrum for the required profit margin.

Figure E2: Findings on the required margin



Source: CEPA

At the bottom-end of the range, is the low risk historic UK regulatory decisions, while the top-end of range reflects observed profit margins from other electricity retailers and retailers from other sectors (e.g. supermarkets and high street retailers).

The margin spectrum also shows that the most relevant regulatory benchmarks (allowed margins for electricity retailers in small regional markets who face some form of wholesale purchasing / volume risk and are subject to retail competition) and the implied range from the capital base x WACC approach, sit somewhere within the bottom and top-end of the range, with both pieces of evidence suggesting a margin of around 3-4%.

Implications for the required profit margin

Where then does the appropriate range and point estimate of the required profit margin for Power NI's regulated business sit?

Given the capital requirements of the regulated business, and the expected cost from the retailer having to access that capital, a profit margin of 1.7% as allowed in the current price control is insufficient to sustain the capital that an efficient company would be expected to require to trade in the SEM and a retail market open to competition.

Applying our framework of testing for a required profit margin, and therefore financeability, suggests a margin in the range 3-4% of turnover would be more consistent with the capital base, risk profile and expected returns by investors from the activities which are subject to price controls. This would also be consistent with the benchmarking analysis of profit margins in other sectors and we believe meets our financeability test.

1. INTRODUCTION

The Utility Regulator (UR) recently published a consultation on the approach it should take in relation to setting the next price control for Power NI.[6] One of the questions the UR considers is whether Power NI, as a relatively 'asset light' retail supply business, should be subject to a financeability test, as is typical for network sector price control reviews.

The UR has a duty under Power NI's operating licence to ensure that where price controls are applied to its licensed activities, that the company is able to finance those price controlled activities. In its Approach consultation, the UR has suggested that it can best discharge this duty by demonstrating that it has a robust, evidence based methodology for calculating allowed opex and margins including by showing that the return on offer:

- compares favourably with the returns that investors can get by investing in efficient businesses with similar risk profiles; and
- is capable of supporting and sustaining the investor capital that an efficient company would need for fixed assets and working capital plus access to a reasonable buffer to accommodate unanticipated financial shocks.

Power NI has asked CEPA to consider the question of financeability in the context of its 2014 price review and the implications this has for determining a required profit margin. This report provides our view of how to address this question.

1.1. Approach

We have adopted a three stage approach for considering the issue of financeability and its relevance within a retail electricity price control.

We initially consider what might be meant by financeability in the context of a regulated retail electricity business operating within Northern Ireland (NI). In doing so, we draw comparisons to the approach and definition of financeability adopted by regulators, including the UR, in other sectors and contexts. We also consider the constraints on financeability applied by the market, including ratings agencies when assessing credit risk of similar 'asset light' businesses.

Having considered this relatively theoretical question, we then turn to the more practical issue of how a regulated asset light electricity retailer in NI with no generation asset underpinning might in reality approach its capital structure and financing given the risks that it faces as an electricity trading business. In particular, the need to trade through the all-island wholesale electricity market, the Single Electricity Market (SEM).

This involves considering the types of risk being allowed for and the different forms of capital that are being employed.

[6] UR (2013): 'Approach to the 2014 Power NI Supply Price Control'

In the final stage of our analysis, we have sought to identify the implications of our findings for setting Power NI's price control, in particular, what our conclusions imply in terms of a required profit margin. We have applied our findings to arrive at a range for Power NI's margin which we believe meets the financeability test.

1.2. Document structure

The rest of this report follows the three stages of our analysis as outlined above, with a final section providing the results from our financeability test and more specific discussion of how we have reached a conclusion on a range for the required profit margin.

The findings in this report are supported by a series of supporting annexes with evidence on:

- Financeability of other 'asset light' businesses (Annex A).
- Risk profile of the regulated business (Annex B).
- Operation of K in a competitive retail market (Annex C).
- Evidence of the cost of capital (Annex D).
- Regulatory precedent of allowed retail profit margins (Annex E).
- Observed profit margins of other retail and asset light businesses (Annex F).

2. WHAT DO WE MEAN BY FINANCEABILITY?

In this section we seek to identify a definition of financeability for a regulated retail electricity trading business in NI. We consider in turn:

- How regulators in the UK (and the CC) have tended to interpret financeability and what can be learnt from these approaches.
- Key economic and financial issues as regards retail businesses, including the types of capital that are typically employed within these businesses.
- How credit rating agencies approach their assessment of credit risk for unregulated utilities and 'asset light' businesses.

The conclusions in this section are used to inform our framework for testing financeability and the required profit margins in section 4.

2.1. Typical regulatory policy

Financeability in a price regulatory context is a relatively nebulous concept that economic regulators in the UK have addressed in different ways.[7] A stylised interpretation of the approach adopted to financeability in most *network* industries would be:

Box 1: What is *generally* meant by financeability in a price regulatory determination?
Whether a company is able to fund its investment programme and meet basic financial ratio tests, based on the way credit rating agencies assess whether a company is investment grade, given the expected cash-flows generated by the regulatory price determination.

In addition to ensuring that a regulated company which is efficiently managed and financed is able to earn a return at least equal to its cost of capital, credit ratings (and the financial ratios and factors that underlie them) have also been central to the assessment of regulatory tests for financeability. Different regulators have then adopted various approaches when a financeability test has failed.[8] The UR's approach document reaches a similar conclusion noting that:

> "*Regulatory decisions issued during the 1990s did not make any reference to financeability. The thinking at this time was that setting a return at least equal to the cost of capital logically ensured that regulated companies would be attractive to investors and would be able to raise new finance as required* …
>
> [Regulators have however] *started to subject their price control decisions to additional financeability tests, usually in the form of an inspection of key financial ratios against a threshold values that rating agencies have indicated a solid investment-grade company should exhibit. This has been accompanied by an as-yet-*

[7] See CEPA (2010): 'RPI-X@20: Providing financeability in a future regulatory framework'.

[8] For example, some regulators have in the past provided NPV neutral advancements of revenue while others have assumed notional equity injections by the regulated business.

unresolved debate about what it is that a regulator should do if it finds that a price control decision produces an unacceptable set of financial ratios."[9]

A focus on efficiency (part of a duty to protect consumers) has also meant that financeability tests have tended to focus on setting an allowed rate of return for a *notionally* efficient business, as reflected through a notional gearing assumption in the WACC, and financeability tests applied to projected regulated revenues and costs at the price review.

Box 2: Financeability of a notional efficient company

In recent price reviews, UK regulators have adopted an 'optimal' or 'notional' gearing approach in assessing gearing for WACC calculation purposes; that is the proportions of debt and equity that an 'efficiently financed' company would employ. The notional gearing value is then typically set by reference to: consistency with an investment grade credit rating, recent regulatory precedent and assumed gearing that roughly matches with reality. Financeability tests are applied to the notional company cash flows.

A similar approach was applied by the CC at the Bristol Water determination.[10] While the CC did not adopt the industry notional gearing assumption that had been adopted by Ofwat as part of its price review (as the CC considered that it should reach its own view on this issue by reference to Bristol Water's specific circumstances), the CC did not consider it was obliged to base its assessment of financeability on Bristol Water's actual condition, agreeing with Ofwat that:

"*Bristol Water's actual financial structure is for Bristol Water to determine, but that this was at Bristol Water's own risk. Accordingly, we considered it reasonable for us to conduct our assessments [of financeability] on the basis of assumptions as to financial structure that we considered to be reasonable in terms of gearing (as long as we applied such adjustments in calculating the WACC), and that we were entitled for this purpose to include assumptions that shareholders would supply finance in some form.*" The CC also noted that it was concerned with assessing "*the financeability of an efficient company.*"

Source: CEPA analysis

An extension of this principle would suggest that while regard may be given to the actual capital structure of a regulated *retail* business, when assessing if the allowed revenues, profits and cash flows are sufficient for the business to finance its activities, this assessment should also be done assuming a notionally efficient retail company and capital structure.

2.2. Retail business financeability

Economic regulators have typically looked at these issues in the context of network industries,[11] including energy networks, vertically integrated water and sewage providers and regulated airport providers. All of these businesses have large tangible asset bases managed through programmes of ongoing operational and capital expenditure additions.

[9] UR (2013): 'Approach to the 2014 Power NI supply price control.

[10] CC (2010): 'Bristol Water plc - A reference under section 12(3)(a) of the Water Industry Act 1991.

[11] See for example, Ofgem/Ofwat: 'Financing Networks a Discussion Paper'.

Retail electricity trading businesses, such as Power NI's, are however very different to network industries. They are tangible 'asset light' with relatively small investment programmes in physical assets (rapidly depreciating IT being the typical example given of investment in physical assets). What then might be meant by financeability in the context of an asset light regulated retail electricity business with no generation underpin?

2.2.1. Retail business capital requirements

There is no reason per se to suppose that the *need* to maintain credit ratings and the ratings factors which underlie them, should not apply to a regulated retail electricity trading business as to a regulated networks business (see further discussion below on credit rating agencies). Both businesses require access to finance and credit to support the operation and investment in their activities and to retain lenders' and suppliers' confidence.

The need to *access* finance, and the drivers of credit risk however, are likely to be very different for an asset light retail business compared to a network company linked to the *trading* characteristics of the business rather than the need to fund large investment programmes in tangible assets. Instead, as discussed above, retail businesses are typically characterised by a small tangible asset base as compared to the overall turnover and earnings (EBIT) of the business.

A retail company's business fundamentals typically include:

- value creation through advertising, marketing and product innovation, safety and quality to establish and retain a brand, customer base and market share;
- the efficient management of wholesale costs which reflect a large "bought-in" element to the final end-user price; and
- efficient management of internal operating costs and effective pricing strategies to manage product demand and market share.

Why might a regulated retail electricity business operating in NI with similar retail business features need to access finance?

We consider this question in some detail below (see Section 3) as it relates to the characteristics and the risk profile of the retail electricity business, in particular, influenced by the form of price control regime, the structure of the NI wholesale market and the degree of competition faced by the regulated company in the retail market.

As an overview however, Table 2.1 sets out relatively generically some of the reasons why retail businesses typically seek to access finance for their businesses.

Table 2.1: Why do retail businesses seek to access finance?

Capital requirements	Description
Working capital	To finance mismatch between revenues and costs.
Investment in fixed assets	For example, IT and offices

Customer acquisition/retention	Investment in advertising, marketing and brand value.
Collateral requirements	Ability to sell through wholesale purchasing
Risk capital	Financing of wholesale purchasing risks.
	Financing of other performance risks (e.g. internal opex).

Source: CEPA

Like any business, the core retail financeability requirement is that the prices which retailers are able to charge for their product (s) (and in most liberalised markets the quantity of the product that is also sold to the retailer's customer base) generate sufficient cash-flow to remunerate and sustain the capital that is needed to be employed within the business.[12]

Given retail businesses require access to certain forms of financing - and in order that this financing is provided on efficient terms - these businesses, as with network companies, must meet the requirements of rating agencies, lenders and its shareholders to ensure that the business is an attractive investment and of sufficient credit quality.

2.3. Rating agencies

How do credit ratings agencies and lenders evaluate credit and default risk of retail electricity businesses and similar 'asset light' companies?

We provide a relatively detailed review of the factors which the credit ratings agencies have tended to take into account for these types of businesses in a supporting annex on financeability of retail and asset light businesses.[13]

This review shows that a combination of both qualitative and quantitative factors are taken into account by ratings agencies, including:

- operating performance and volatility;
- efficiency and profitability;
- financial ratios (such as free cash flow / net debt); and
- more qualitative factors such as:
    - market presence;
    - scale and diversity;
    - demand vulnerability; and
    - retail business model.

[12] This is consistent with a core but sometimes forgotten underlying principle of incentive based regulation that prices should provide for capital maintenance.

[13] See Annex A.

Specifically on business and cash flow volatility rating factors typically applied to retail businesses,[14] Moody's notes that:

Box 3: Business and cash flow volatility rating factor

"*revenue and cash flow volatility is particularly important given the* ***significant fixed operating costs, potentially meaningful seasonal variations in working capital inherent in the business,*** *and* ***easy pricing comparability on the part of customers, which leads to significant price competition.***"

CEPA emphasis added. The financial strength and cash flow predictability of the retail business is also brought out from Moody's rating methodology by financial ratios being assigned a 50% weighting factor within the ratings grid (see Annex A).

As part of their 'asset light' ratings methodologies, for example in the postal and express delivery industry, ratings agencies have also adopted explicit benchmarks for setting a credit rating for a given EBIT margin level (see Table 2.2).

Table 2.2: Required EBIT margins for different credit ratings

Rating category	Aaa	Aa	A	Baa	Ba	B	Caa
EBIT margins	≥20%	16-20%	12-16%	8-12%	4-8%	0-4%	Negative

Source: Moody's

Based on the EBIT margins historically allowed by the UR and typically achieved by electricity retailers (see later sections), this would indicate that the regulated retail electricity business in NI would only be able to maintain a BB to single B rating (on Standard and Poor's rating basis).

More specifically to the electricity sector, a ratings methodology paper by Moody's for unregulated utilities and power companies[15] provides an indication of the factors that are likely to be taken into consideration for assessing credit risk for integrated power businesses, where there are both retail and generation interests (albeit Power NI do not have generation asset backing). Again, this includes qualitative and quantitative factors such as:

- market assessment, scale and competitive position;
- cash-flow predictability of the business model;
- financial policy; and
- financial strength metrics.

While Moody's rating methodology generally considers retail supply businesses in the context of an integrated utility business model a number of specific references are made to supply companies under the market assessment, scale and competitive position and financial policy ratings factors. For example, on market position:

[14] Moody's (2011): 'Global Retail Industry'

[15] Moody's (2009): 'Unregulated Utilities and Power Companies – Rating Methodology'

Box 4: Competitive position and market share
"*when scoring regional supply companies under this sub-factor, we take into account their* ***market share and customer churn rates as well as the size of their core operational market****. In our assessment we will consider the overall* ***structure of the supply market*** *in the relevant jurisdiction and the* ***relative position of the rated entity***."

In the case of financial policy:

Box 5: Financial policy
"*given the commodity nature of the business,* ***a critical rating factor is the ability of an issuer to maintain adequate liquidity in the form of cash or bank line availability****.* ***Margin calls can be substantial given the volatility of price of electricity and certain fuel commodities*** *… from a liquidity perspective,* ***we factor in an issuer's internal sources of cash relative to the issuer's expected calls on capital****, including capital requirements, dividends, announced share repurchases and debt maturities."*

CEPA emphasis added.

Cash-flow predictability (as also linked to market assessment, scale and competitive position) and cash or bank line availability is clearly an important element of the Moody's ratings grid for unregulated utilities. One of the elements that Moody's also considers is the degree of integration and hedging strategy. As part of this assessment "*factor ratings assigned may therefore also take account of the degree of competition, churn and profitability of a utility's supply business*".[16]

Table 2.3 seeks to accommodate these different factors into an illustrative ratings grid that might be applied to a regulated retail electricity business in NI. As illustrated, there is a close interaction between the company's financial and trading policy, the impact of the regulatory regime and therefore business cash-flow predictability and risk.

Table 2.3: Illustrative risk matrix for a regulated electricity retailer

#	Factor	Relevant sub-factors
1	Scale and business diversity	Market share, customer churn and company scale in market Structure of the market
2	Financial and trading policy	Capital structure and requirements Integration and hedging strategy
3	Efficiency and profitability	EBIT margins Profits relative to revenue and costs (profit volatility measure)
4	Cash-flow predictability	Impact of the regulatory regime Integration and hedging strategy

Source: CEPA

[16] Ibid.

Given that the regulated retail company would need to access finance to meet its capital requirements (see next section) the relative performance of the business against these different factors are likely to constrain the profit margin required by lenders and investors to mitigate and insure against the risks which are faced by the business.

2.4. Conclusions

The key points from this section are summarised in the text box below. This begins to illustrate the factors which need to be considered through the price control review to secure that an efficient regulated retail electricity trading business can finance its activities.

Box 6: Conclusions

- When assessing if the allowed revenues, profits and cash flows are sufficient for the business to finance its activities, this assessment should be done by assuming a notionally efficient retail company and capital structure.
- A notional efficient retail electricity business will need to access various forms and quantities of capital in order to effectively trade, insure against risk and finance its activities. The capital requirement of a retailer is very different to typical regulated network companies.
- Financing constraints will apply to an asset light retail business, with evidence from similar sectors suggesting certain credit metrics are important for financial markets and ratings agencies. Given the credit metrics which are applied to these types of business, this is likely to constrain the rating category which the retailer can achieve to the range BB to B.

3. FINANCING AN ASSET LIGHT RETAIL ELECTRICITY BUSINESS

In this section we consider the capital requirements of Power NI's regulated activities and how an efficient company might expect to finance those activities. This informs our assessment of the required margin in Section 4. We consider in turn:

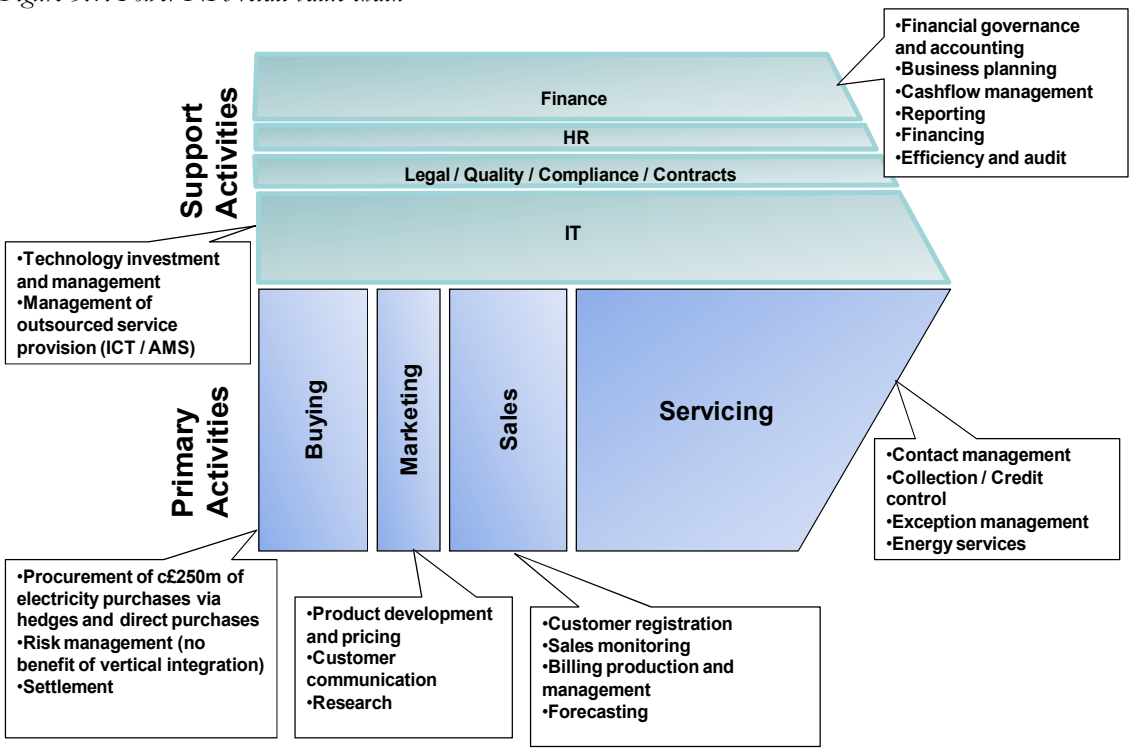
- the features of the regulated retail electricity business, the business' risk profile and its capital requirements;
- how the retail business could seek to finance its capital requirements and the implications this has for establishing the company capital structure; and
- how, given our view of retail financeability, the efficient capital base and financing structure of the regulated retail business should be assessed.

3.1. Business activities and risk profile

3.1.1. Capital requirements

Power NI operates a regulated retail electricity supply business serving domestic and non-domestic customers in a competitive environment. Figure 3.1 below summarises the key activities of the business as illustrated through Power NI's retail value chain.

Figure 3.1: Power NI's retail value chain



Source: Power NI

Amongst the primary activities of Power NI's regulated business include electricity trading (through the procurement of power in the SEM (at System Marginal Price (SMP)), risk management (hedging via CfDs with generators) marketing, sales and retail servicing. As an electricity supplier, the business must also purchase access to the electricity networks through use of system charges.

In Table 3.1 we have summarised the key drivers of working capital within the regulated business and the expected terms of those cash flows (sourced from analysis completed by an accounting advisor to Power NI). This illustrates that by having to trade within a challenging and complex liberalised wholesale electricity purchasing environment, the regulated retail electricity business has to access a variety of forms of working capital.

Table 3.1: Regulated retail business working capital requirements

Cash flow	**Terms**
Energy income from end customers	Quarterly and monthly invoicing (14 days from date of invoice) Key pad ("pay as you go") Direct debit
K corrections	Under/over recovery of costs settled via future changes in tariffs
SEM energy payments	Billed weekly in arrears + 8 working days
SEM capacity payments	Billed monthly in arrears + 10 working days
CfD hedging receipts/payments	Monthly in arrears on 12th business day
UoS payments	Monthly in arrears, 10 business days following invoice receipt
T&D PSO	Monthly in arrears, 10 business days following invoice receipt

Source: Power NI accounting advisor

Power NI through its regulated business is also required to provide collateral (in the form of Letters of Credit (LoC) or security deposits) with SEMO for SEM electricity purchases, NIE for distribution use of system charges (DUoS) and the PSO, which can be used in the event of a payment default. As Power NI purchases euro denominated CfDs, the business also uses foreign exchange forward contracts to eliminate foreign exchange risk on these CfD contracts.

We discussed some of the other more generic capital requirements of retail businesses as part of our more theoretical view of retail financeability in Section 2. In addition to the forms of working capital and collateral requirement discussed above, in a competitive market, we might also expect the regulated business to invest in activities such as customer acquisition and retention, IT, building and fittings. This would also add to the business' capital requirements.

3.1.2. Business risk profile

The quantity, form and cost of financing this capital requirement is effected by the regulated retail business' risks profile. Our detailed analysis of risks and how they are changing in a new wholesale (SEM) and competitive retail landscape is provided in Annexes B and C. We cover, amongst other issues, the operation of a K factor in a competitive retail market, and the types of risk that are borne by investors under the UR's price regulatory regime.

We find that Power NI's regulated activities are facing increased business risks particularly from purchasing electricity in the SEM (with no generation asset backing) and the effects of greater retail competition.

Power NI is now the fourth largest electricity supplier in the non-domestic market, and is also experiencing a declining market share with increased competition in the domestic sector (c.170k plus domestic losses since 2010). The competitive retail landscape is placing new demands on its regulated business (e.g. from contract management and other pressures on cost to supply) while also increasing business risk through greater customer churn and the operation of the regulatory pricing formula in a competitive market.

We show that as well as increasing price and volume risks, the 'asset light' nature of the regulated activities can also be expected to impact on investor perception of riskiness:

- As retail profit margins are thin relative to costs, investors are more likely to see their returns wiped out in the event of unanticipated shocks, as compared to a business where returns are a much larger proportion of the revenue base (such as a mature energy network company).
- This increases the exposure of investor returns to retail supply risks (given the dispersion and materiality of those risks) which in an environment of increasing risk, can be expected to be a key concern for those investors.

In theory, the price regulatory regime and hedging tools should provide protections against certain supply risks, particularly increasing purchasing and volume risks from trading in the SEM. The current regulatory pricing formula should allow the regulated business to "pass-through" its wholesale costs to consumers, provided that the business complies with its Economic Purchasing Obligation (EPO). The K factor also in theory allows the business to recover any under or over recoveries of incurred cost through future tariff levels.

In this case there are a number of reasons to believe theory does not match with reality.

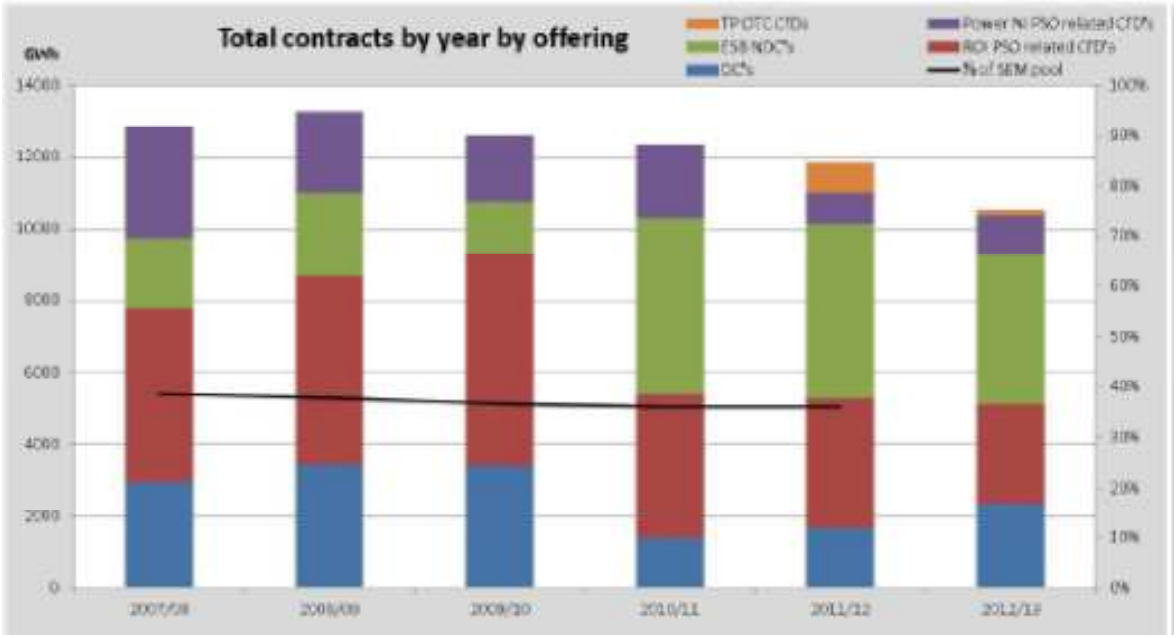
Firstly the EPO does not mitigate against changing capital requirements of the retail business, if there are constraints on the sources and volume of hedges available in the market.

As illustrated in Figure 3.2 below, total contract volumes offered in the SEM contracts market have been declining in recent years. This is driven by lower directed contracts[17] and a decrease in the volume of Republic of Ireland PSO-related CfDs and of Power NI PPB contracts offered. Increasing interconnection and wind generation on the system, has, and can be expected to continue to, displace other generation, reducing the level of generation offering contracts.[18] From our discussions with Power NI, we also understand many of the hedging products on offer are increasingly shorter term in nature. For example, RoI PSO contracts are now only offered for auction on a quarterly basis, for the next quarter.

[17] Directed Contracts are CfDs which are imposed on the incumbent generators with market power in the SEM by the RAs as part of the Market Power Mitigation Strategy.

[18] See RAs (2012): 'Contracting in the SEM 2007-2013 – Information Paper', p. 24

Figure 3.2: Total contract volumes by offering



Source: Regulatory Authorities

Higher levels of hedging should act to reduce retail purchasing risk (subject to interactions with volume risk in a competitive market) and, therefore, the "risk capital" requirement of the business. While this will increase the retail business' collateral requirements (including LoC and foreign exchange (Fx) hedging), this can be funded in part under the purchase of electricity (Gt term) component of the retail pricing restriction formula.[19]

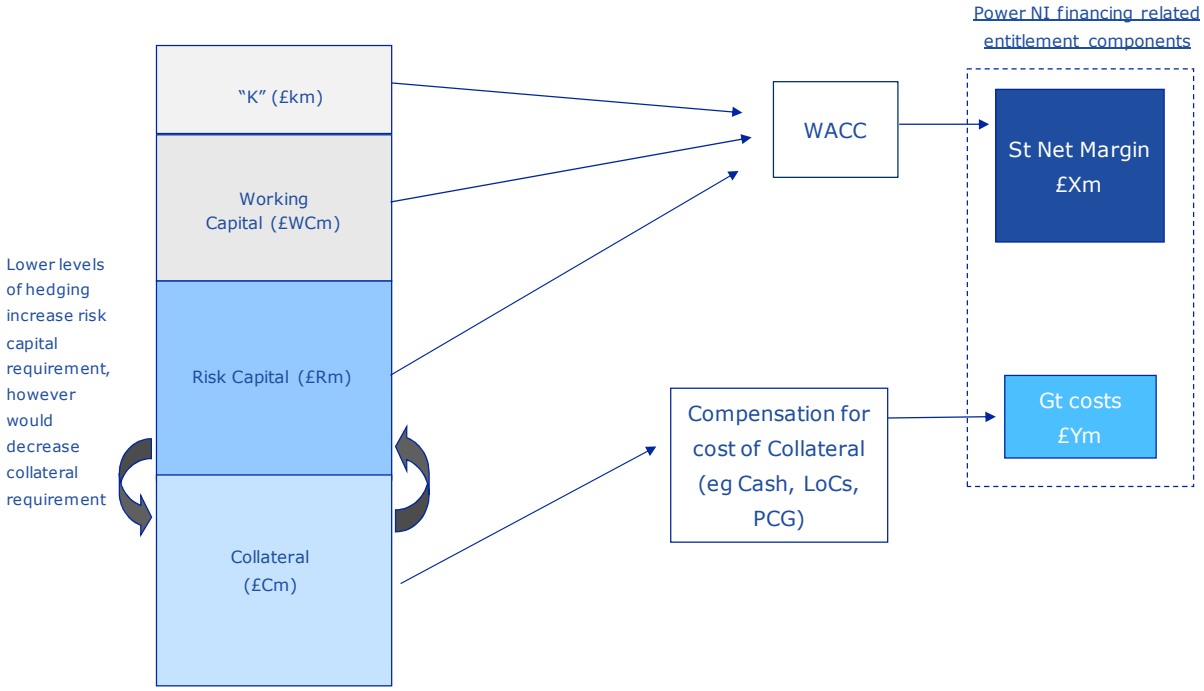
In contrast, when there are lower levels of hedges available, this will increase the "risk capital" that is required within the business for the company to trade in wholesale markets (see Figure 3.3 overleaf). Given there is a cost of accessing this capital, under the current retail pricing formula, in order to sustain this capital employed within the business, an increased return is needed under the allowed profit margin in the retail supply entitlement term (St). This works as follows:

- In a market where there are shortages of hedges compared to historic contract volumes, the regulated retailer will be experiencing a reduction in its hedging allowance (at cost) under the Gt term (through reduced CfD related costs).
- Greater pool price exposure however does not mean that the regulated business will not need to allow for currency and one-off supply shocks. This may be provided for through forms of equity or LoCs but is capital that needs be sustained for the business to trade and remain solvent were these more extreme events to crystallize.

[19] The Gt term in the maximum average charge formula covers, amongst other items, SMP charges, currency exposure costs and contracts for difference and associated costs.

We return to this point as part of the discussion of capital structure in Section 4.

Figure 3.3: Impact of lower hedging on risk profile and capital requirements of the regulated retail business



Source: Power NI

With regards the assumed regulatory protection from purchasing risk under the EPO, this also requires effective operation of the K factor, which should allow under and over recovery of incurred costs to be reflected in future tariff levels. Our analysis of the operation of K in a competitive market suggests it does not provide the safeguard for profitability that the UR has in the past argued applies to the price regulated retailer (see Annex C).

In contrast, we find that the price controlled incumbent who faces competition is likely to be exposed to a largely asymmetric risk of costs being incurred but not being fully recovered, as retail competition and the threat of market entry mean that under-recoveries are increasingly unlikely to be recouped in later years (a point raised by Power NI at the previous price review). This is an asymmetric risk, because the operation of the price control formula means any over-recoveries are likely to be required by the UR to be returned to customers.

Arguably this conflicts with a core principle which set out in the UR's approach document that:

> "*shareholders should not come out of a periodic review expecting to make supernormal profits or suffer sub-normal returns. A price control should instead be a sort of "fair bet" in which the chances of making money or losing money are equally balanced.*"[20]

These asymmetric supply risks are driven by the application of price controls within a market now fully open to competition. The price regulated incumbent is restricted from adopting the types of

[20] UR (2013): 'Approach to the 2014 Power NI Supply Price Control', p. 35

pricing policies which might be expected from non-price regulated retailers in liberalised markets in order to mitigate against asymmetric supply risks. Assuming the continued application of price controls, we discuss the implications of this in Section 4.

We also note that as Power NI faces a fixed gross margin for the price control period (the St term in the pricing formula), profits are exposed to systematic changes in operating costs (e.g. from wage inflation) which cannot be passed-on to consumers until the reset of price controls. Under a fixed St term, the business also faces risks from customer default and bad debt. An environment of increasing capital requirements also increases financing risk for shareholders.[21]

While in theory the fixed variable split in the St term should also reduce variable internal costs as customers switch away from Power NI, and will increase variable costs as customers switch to Power NI, this assumes that the 67:33 split reflected in allowed revenues is reflected in actual outturn cost. We find that where they differ, the business faces a margin squeeze if the fall in costs is not as large as the fall in revenues, further increasing business risk.[22] This is another increased "cost of supply" risk from greater competition.

3.1.3. Summary

The points made above have important implications for the capital requirements and cost of finance the price regulated business can expect to face going forward:

- Price regulated electricity retail supply in the NI market is notably riskier than it has been in the past and, in particular, minimal comparison if any can be made to typical regulated companies, such as Regulatory Asset Base (RAB)-backed infrastructure.
- Given a relatively small asset base, thin profit margin relative to 'bought-in' costs and increasing risks, we would expect this to be reflected in the capital requirements, cost of finance and, therefore, required returns of an 'asset light' regulated business.

3.2. How could the regulated business be financed?

Given our findings on business risk profile and the types of capital required by the regulated business, how would an efficient company be expected to finance its regulated activities? This was a subject of some debate at the previous price control review.[23]

[21] A fixed profit margin implicitly assumes a fixed cost of capital. With an increasing capital base, all things being equal the business is more exposed to changes in financial markets, for example, the cost of accessing working capital and lines of credit from banks.

[22] This may particularly be an issue for allowed profits in the St term. The allowed margin (profit term) is set on the basis of forecast turnover and a reduction in customer numbers within the control period will reduce the allowed margin. This assumes though that required returns (given capital employed) are variable. If the capital required to run the business does not fundamentally change as customer numbers change, then the business does not have the prospective of earning a margin that is sufficient to maintain the capital in the business.

[23] See UR (2011): 'Power NI Price Control 2011-2013 Decision paper'.

3.2.1. Points raised by the UR at the 2011 price review

First Economics (FE) who were commissioned by the UR were critical of Power NI's proposal that a regulated supply business would need risk capital (in the form of cash balances) that the supplier would take upfront from investors and put into a bank account to guard against future supply shocks (the materiality of those shocks established through risk modelling completed by NERA).

The stand-alone 'risk capital' which NERA considered to be a necessary requirement for a regulated supply business was in FE's view unwarranted given "*there were much more* ***efficient*** *ways of managing and accommodating* [the downside risks faced by retail electricity suppliers] *than taking cash from investors with the expectation that it will then sit idle.*" CEPA emphasis added.

FE suggested that these risks could be more efficiently managed through:

- hedging policies;
- initial financing for buildings, IT, working capital etc. could all be equity financing (in the event of adverse business performance, this would allow new capital to be raised against these assets and the existing equity to be used as risk capital to accommodate losses); and
- contingent equity (which we discuss further below).

Hence, FE rejected Power NI and NERA's findings on margin requirements, on the basis that the approach used to derive a required profit margin was inconsistent with its view of how an efficient regulated electricity business in NI would be financed. These conclusions were used to support the UR's final determination of retaining an allowed profit margin of 1.7%.

As we set out below (and in Section 4), we are not convinced that FE's findings at the previous review were correct. This is based in our opinion that FE made some strong assumptions of how an efficient regulated retail electricity business would be financed that do not appear consistent with regulatory precedent and indeed the practical evidence of financing and market constraints (e.g. shortages of hedges) that apply to the regulated business.

3.2.2. Discussion

Firstly, it is reasonably apparent that the *minimum* efficient scale (MES) of an electricity retailer is relatively small; a reflection of the minimal *tangible* fixed assets (e.g. IT and offices) that are employed within the business. Therefore, while CEPA has not sought to independently assess this conclusion, it would seem surprising at the very least, that a supply business with the size and customer base of Power NI's (c. £350m projected turnover with internal costs of c. £30m p.a.) given:

- the shortages of hedges available in the market[24]; and
- the size of its tangible asset base relative to turnover

[24] See discussion above.

would be able to solely finance itself in the event of a cash-depleting downside supply shock from the initial source of finance and risk management policies which FE refer to above (analysis commissioned by Power NI on this issue is discussed in Section 4).[25]

A retail electricity supply business with the size and scope of Power NI's regulated activities and customer base would, therefore, need to retain a sizable 'stand-alone risk capital' base to ensure that the business could continue to trade and finance its activities in the event of a major downside shock and more generally "peak" working capital requirements.

But according to FE's analysis:

> "*a company that sought to enter the electricity retail market, with the kind and amount of money owing to investors that NERA outlines in its paper would put itself at a massive competitive disadvantage relative to rival retailers … a cash pile is both a very expensive and very inefficient buffer against downside risk in comparison with the alternatives that are available to a firm and we would expect to see the process of competition eliminate most, if not all, of this inflation of the balance sheet very quickly.*"

If we take FE's findings to their logical conclusion, and the sources of finance other than a risk capital cash injection are insufficient to ensure that an efficient regulated electricity retailer is financeable, given the regulated business customer base, this suggests that the regulated business in NI would need to be owned by an integrated parent company, perhaps an integrated utility, in order to provide an efficient financing structure for the business.

FE partly acknowledged this when they note that the third alternative source of finance other than the risk capital modelled by NERA would be for the ultimate owners of the company – e.g. a parent company or major shareholder – to provide guarantees or letters of credit committing themselves to step in and cover future losses. This would:

> "*effectively constitute 'contingent equity' … because it is not expected to be employed at any time and because the capital involved can be invested in alternative investments, it does not have the same opportunity cost of capital and does not need to be rewarded with a conventional cost of equity.*"

In this scenario:

- the integrated company would seek to finance itself through an optimal mix of debt and equity through its balance sheet;
- as an integrated company involved in various activities, such as power generation, would need to maintain a credit rating;
- this credit rating would be a function of the rating factors that were discussed in Section 2 with the risk profile of the utility driven by the integrated structure; and
- the regulated retail supply business would be financed through the balance sheet of the integrated utility.

[25] A small (but efficient) retailer (given the low MES of the business) may however be able to adopt this financing strategy given the ratio of assets to turnover/risk.

Were an extreme downside cash-flow shock or even a "peak" working capital requirement to crystallise for the retail business, one would expect a cash-call to the parent company (as suggested by FE) perhaps according to a draw down of a parent guarantee type arrangement. This would be financed through cash or credit facilities held within the business or against the amounts expected to be paid out against other investments within the group (such as power generation assets). This provides the explanation for the "missing cash" problem which FE apparently identified through their work at the previous price review.[26]

3.2.3. Implications

The problem with adopting an integrated company financing structure assumption within a price regulatory context, is that it potentially creates very misleading conclusions of the capital requirements of the retail business and the cost of accessing that finance. A similar principle is at work when typically comparing project and balance sheet financing in a regulatory context.[27]

The cost of capital at a project level, owing to the non-recourse nature of the lending, is perceived to be more expensive than balance sheet funding. That, however, breaks the basic tenet of the corporate finance principle that it is the risk of the project that determines the cost. So, why might balance sheet funding appear cheaper than the cost of capital at the project level?

The key answer to this lies in the fact that project finance is non-recourse. So, if the project fails, lenders will lose their money. Balance sheet finance in contrast is backed, either through an explicit parent company guarantee or an implicit guarantee, such that if the project fails lenders will be recompensed. It is this parent company guarantee which allows the cost of funding to be cheaper for balance sheet funded projects.

Some parent companies charge a specific guarantee fee to the project company reflecting this service being provided but others do not. However, unless the guarantee fee is reflected in the estimate of the cost of capital a like for like comparison is not being made between the project finance and balance sheet finance costs of capital.

A similar conclusion also applies to assessing the efficient financing structure and required return of a price regulated retailer in NI:

- In theory, the capital requirements and cost of capital, given the risk profile of the business, should be largely equivalent whether the business' financing structure is assumed to be on a standalone or integrated company balance sheet basis, provided that the assessment of the required return captures all the costs and sources of required funding.

[26] FE noted that Power NI's 2011 accounts showed that cash at bank and in hand was negligible at the point of compilation of both the 2010 and 2009 accounts. They also looked at the accounts of the Viridian Group, and found no evidence of the cash balances declared by NERA being held at parent company level to support Power NI's regulated retail supply operations.

[27] See CEPA (2013): 'Financeability study on the development of a regulatory regime for interconnector investment based on a cap an floor approach'

- However, the integrated company assumption, is likely to be misleading because it becomes very difficult under this approach to establish exactly what the cost and forms of capital are likely to be and requires some relatively strong assumptions on the form of investor and parent company of the retailer.

Therefore, consistent with our conclusions in Section 2, we believe that an assessment of the capital requirements and cost of financing for the regulated retail business should be completed on a standalone basis for a notional company.

3.3. Conclusions

This section has started to consider the capital requirements of Power NI's regulated activities and how to approach the assessment of how an efficient company might expect to finance those activities. The key points from this section are summarised in the text box below.

Box 7: Conclusions

- Overall price regulated electricity retail supply in the NI market appears relatively risky compared to the past and, in particular, to typical regulated companies, such as RAB-backed infrastructure.
- With a relatively small asset base, and thin profit margin relative to 'bought-in' costs, the increasing risk we would expect to be reflected in the capital requirements, cost of finance and, therefore, required returns of an efficient regulated business.
- Consistent with our conclusions in Section 2, we believe that an assessment of the capital requirements and the cost of financing for the 'asset light' retail business should be completed on a standalone basis for a notional company.

4. IMPLICATIONS FOR THE REQUIRED PROFIT MARGIN

The previous section has shown that a notional 'asset light' retail electricity business in NI requires various forms of capital to efficiently trade and finance its licensed activities. This total capital base however:

- may not always be employed by the business (as working capital requirement and margin calls are linked to the volatility of SEM prices); although
- access to this capital is required to insure against unanticipated events, principally related to trading in the all-island SEM.[28]

This raises the question of what return should be provided for this capital given part of the base requirement is likely to be more contingent capital?

The issue is made more complicated by the possibility the investor in the retail business may be an integrated company and, therefore, the 'risk capital' which is required by the business on a standalone basis may not exist as held 'cash' within the business. Were an extreme or "peak" downside supply shock to crystallise for the retail electricity business in NI, in this scenario one might instead expect a cash-call to its parent company:

- this would be financed through cash or credit facilities held within the wider business; or
- against the amounts expected to be paid out against other investments within the group.

As this is the case in reality with Power NI (which is part of the Viridian Group) analysis of the company's actual financing structure may provide a very misleading view of the 'risk capital' and lines of credit needed to support the retail electricity business.

We have also shown in Sections 2 that financial markets and rating agencies apply certain constraints on the financial strength, business model and profitability which retail and 'asset light' businesses must achieve to acquire a credit rating and attract the sources of capital needed by these companies (based on the concept of opportunity cost) to finance their activities.

Power NI has completed an assessment of the capital base it considers is required for an efficient business with the size and scale of its retail activities (see below). Given this analysis and the issues outlined above, in this section we outline a proposed framework:

- for how to calculate a required return on this estimated capital base (given the expected drawdown of these amounts); and
- how this might be reconciled and checked against wider evidence and precedence of profit margins to test for financeability.

[28] Adequate liquidity in the form of cash bank line availability was one of the key ratings factors identified by Moody's for unregulated power companies given the commodity/trading nature of these businesses.

We draw these findings together into framework for testing a required profit margin which we then apply to arrive at a range for 2014 control period.

4.1. Framework for testing a required profit margin

We propose a four stage approach for testing the required margin and price control financeability.

Our framework assumes that the UR has also set an achievable but efficient opex allowance for the price controlled licensed activities.

4.1.1. Stage 1 – Capital requirements and financing constraints

The initial stage of the analysis should look to establish the capital requirements of a notionally efficient 'asset light' regulated retail business, given its electricity trading activities and the size and scale of its regulated activities. In establishing those capital requirements, reference should also be made to the constraints which may apply to the business, including the providers of finance (e.g. rating agencies, banks and returns from comparable sectors), available hedges in the wholesale electricity market and an efficient company financing strategy. The conclusions of this stage should be used to inform the notional capital structure applied within the WACC x capital base approach for determining the required return and margin.

4.1.2. Stage 2 –WACC x capital base

The first step in Stage 2 is to estimate a risk adjusted cost of capital for the business.

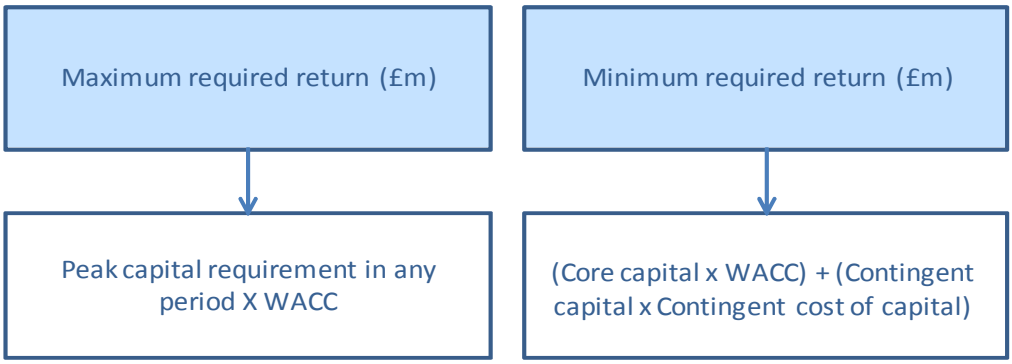
This should reflect a Capital Asset Pricing Model (CAPM) based estimate of the cost of capital based on analysis of the risks that an 'asset light' electricity retailer faces in the NI market, in order to establish the company asset beta and debt premium. Market evidence of required financing costs for similar retail businesses, and the impact of the scale and scope of the regulated retailer, should also be considered at this stage of the analysis.

In the second step of this analysis, the cost of capital should initially be applied to the required capital base to operate and insure against relatively extreme trading scenarios (termed as "peak" capital requirements). In this scenario, it is assumed that capital employed within the business requires a full return (at the company cost of capital) over the course of the trading year. This would define the "maximum" required return on the company's capital base.

The next step is to define a minimum required return on the company capital base.

We propose that this should be calculated according to similar principles as the maximum return scenario, but assumes that contingent capital (drawn down in more extreme events) is remunerated at a lower cost of capital (for example, the cost of a commitment fee). However, core business "risk" and working capital, for example, would continue to receive a return at the company's cost of capital, as for the maximum scenario.

Figure 4.1: Scenarios for arriving at a required margin range from the capital base x WACC approach



Source: CEPA

Our scenario approach recognises the various forms of working and "risk" capital that need to be available to the regulated business. Having made this capital available, this implies an opportunity cost for the providers of that capital although that capital may not always be employed.

This analysis should be drawn together to develop a range for the required margin given uncertainties in the wholesale and retail markets and the risks which a notional efficient business might seek to insure against through its capital structure.

4.1.3. Stage 3 – Regulatory precedence and margins observed in other sectors

The third stage of the analysis involves comparing the range for the required margin as implied by the capital base x WACC approach to regulatory precedent and observed margins in other sectors. In making this comparison the relative risks, in particular, exposure to volume, energy purchasing and internal cost risk under the regulatory regime, and relative capital requirements of comparator businesses, need to be taken into account.

The regulatory benchmarks should consider precedence of retail price controls in liberalised markets (such as Australia) rather than historic UK decisions, such as those made by Ofgem and the Monopolies and Mergers Commission (MMC) in the 1990s. As discussed below, there are a number of reasons why we believe historic UK decisions are no longer relevant to Power NI.

In terms of comparisons to profit margins in other sectors, care needs to be applied of ensuring an approach margin measure is adopted.

In our view, the appropriate measure for comparison with the regulated business is the EBIT margin, as this is consistent with applying a pre-tax WACC in the WACC x capital base method, and taxation costs being remunerated through the allowed margin.

4.1.4. Stage 4 – Combine evidence to develop a risk spectrum

The fourth and final stage involves combining the different elements of the analysis to establish a spectrum for the required profit margin.

Our spectrum is based around framing regulatory decisions and benchmarks against each other based on evidence on relative risk.

4.2. Assessment of the required margin

In this section we apply the framework outlined above to derive a spectrum for the required profit margin in the 2014 price control. This is informed by findings in the previous sections and an evidence base provided in Power NI's BEQ and further supporting annexes of this paper.

4.2.1. Capital requirements and financing constraints

Capital requirements

Power NI has commissioned an accounting advisor to assess the historical and forecast working capital and collateral requirements of Power NI's business were it to operate on a standalone basis. The methodology which has been applied in this analysis aligns with the methodology in practice adopted by the Viridian Group in assessing its actual required facilities.

In undertaking this work, the accounting advisor have sought to understand the peak historic and forecast requirement for business working capital and collateral usage by analysing:

- historic and forecast month-end Net Working Capital (NWC);
- "in-month" cash movements (proxy for in-month NWC movements) and identified trends over and above the month-end position for the historical period;
- the historical and forecast month-end "K";
- prefunding requirements (including facility draw downs and clearing requirements and a general cash float); and
- historic and forecast collateral posted by the business (both for Letters of Credit (LoC) and foreign exchange (Fx) hedging) on a monthly basis.

This analysis has sought to identify the "peak" working capital requirements of the business under three scenarios:

- Peak month – aggregated total NWC, K, in-month and foreign exchange hedging assessed based on highest monthly total.
- Peak seasonal – as per peak month but adjusted to look one month either side for each component since year-on-year peak requirement can slip by a month.
- Peak any period – reflects a worst case scenario by taking the peak monthly requirement for each component regardless of seasonal considerations.

To calculate each of these peak scenarios, the accounting advisor's analysis also calculated "average" NWC and collateral requirements historically and forecast financial years 2013/14 and 2014/15.

Table 4.1 below shows total peak working requirement on a forecast basis for the forthcoming price control period under each of these three scenarios plus the forecast "average" for 2014/15.

Table 4.1: Forecast peak capital requirements

Currency: £m	Average FY 2015	Peak month	Peak seasonal	Peak any period
NWC	13.7	25.2	22.8	25.2
In-month movement	4.6	3.4	15.7	15.7
K under recovery	10.7	18.4	22.0	22.0
Prefunding	10.0	10.0	10.0	10.0
NWC requirement	**39.0**	**57.0**	**70.5**	**72.9**
LoC	44.9	73.9	73.9	73.9
Fx hedging	3.9	3.9	5.3	14.5
Total	**87.4**	**134.8**	**149.7**	**161.3**

Source: Power NI accounting advisor and CEPA

In addition to working capital, we assume that the retail business also requires capital for investment in tangible assets such as IT, buildings and fittings needed to support the retail business. Based on discussions with Power NI, this is assumed to be equal to £5m.

The forecast capital requirements presented above are based on Power NI's regulated and non-regulated activities. Table 4.2 presents a revised total capital requirement for the regulated business where a 78:22 regulated / deregulated split is applied based on the regulated/deregulated split of Power NI's 2014/15 cost of sales.

Table 4.2: Forecast peak capital requirements for the regulated business

Currency: £m	Avge FY 2015	Peak month	Peak seasonal	Peak any period
NWC requirement	30.4	44.5	55.0	56.9
LoC	35.0	57.6	57.6	57.6
Fx hedging	3.0	3.0	4.1	11.3
Fixed assets	3.9	3.9	3.9	3.9
Total	**72.4**	**109.0**	**120.7**	**129.7**

Source Power NI accounting advisor, Power NI and CEPA

To apply our approach for Stage 2 of our financeability test, we have grouped this capital requirement into a "core" and a more "contingent" capital base, which impacts on the cost of the retail business having to employ or acquire access to this capital under our different scenarios. This is illustrated in Table 4.3.

Table 4.3: Capital base modelling assumptions

Element	Core	Contingent	"Peak"
NWC requirement	30.4	24.6	55.0
LoC	35.0	22.6	57.6
Fx hedging	3.0	1.1	4.1
Fixed assets	3.9	0.0	3.9
Total	**72.4**	**48.3**	**120.7**

Source CEPA analysis of Power NI accounting advisor and Power NI analysis

The "core" capital base is based on the average financial year 2015 capital requirements scenario. Contingent capital is then calculated as the difference between this core capital base and the peak seasonal scenario in Table 4.2.

Capital structure

In Table 4.4 below, we set out our assumptions of how the price regulated retail business might be financed and the implications for capital structure. These assumptions have been applied in section 4.2.2 to establish the asset light business cost of capital.

Table 4.4: Relevant assumptions for financeability analysis

Element	Assumptions	Notes
Regulatory assumptions	Notional price regulated retailer in the NI market	Financing structure to reflect the scale and scope of the asset light business
Capital requirements	Working capital Collateral Capital for fixed asset investment	Capital may not always be employed although retailer requires access to insure against trading risks
Credit quality	BB to B	See below
Gearing	Mix of debt and equity provides business working and risk capital	Gearing levels assessment by reference to appropriate asset light comparators and market evidence of the size capacity of debt facilities with lenders
Debt	Debt is provided as a revolving credit / letter of credit facility	Incurs a commitment fee and the market priced cost of debt when drawn upon by the regulated retailer
Equity	Equity is held either as cash within the business or posted as part of the LoC facility organised with company's lender (s)[29]	Where only assumed to be contingent equity, this receives a return on the basis of the net cost of equity (full cost of capital minus return provided by bank)

Source: CEPA

[29] The LoC facility is backed by equity and so the retailer receives a return on capital posted with the bank.

In terms of credit quality, we propose that the retailer's cost of financing be assessed at a sub-investment grade credit rating (in the range BB to B). We consider it unlikely that a business with the size and scope of the regulated asset light electricity retailer in NI could (or may need to) sustain a credit rating above this level (e.g. investment grade).[30]

This is supported by our findings in Section 2, which show that while an investment grade credit rating may act to reduce the cost of debt, the constraints which lenders and rating agencies apply to similar 'asset light' businesses, mean the regulated NI retailer is unlikely to be able to generate the required earnings to provide sufficient credit quality and safe guards against the risks of credit default that would be needed to maintain an investment grade credit rating.

For example, looking back to our findings in Section 2, evidence of the credit metrics applied to similar 'asset light' companies, suggest the notional retail electricity business might need to maintain an EBIT margin as high as 8-12%. This is one of the reasons why we consider our assumption that the retailer, on a notional standalone basis, would maintain a BB to B rating to be pertinent.

In applying a WACC x capital base approach, we have also taken account of market evidence provided to Power NI by a bank of the potential capital structure, credit rating and indicative arm's length/market pricing in relation to Power NI's regulated business, again on the theoretical basis of the company being a standalone entity.

The bank conclude that:

> "*on the basis of the basic financial information provided to us, we have assumed a £60m RCF and credit metrics consistent with a single B rated entity (the "Loan"). We would not propose a term loan, but an RCF / Letter of Credit Facility, with cash drawing capped at 50% of the overall facility size.*"

This supports the assumption of adopting a BB to B rating for the regulated entity.

The implications of assuming a £60m debt facility in the notional capital structure are also summarised in Table 4.5 below based on the "peak" seasonal capital requirement scenario.

Table 4.5: Market evidence on capital structure

Element	Assumption
"Peak" capital requirement	£120.7m
Debt (RCF / LoC facility)	£60.0m
Equity	£60.7m
Implied gearing	**49.8%**

Source: Power NI and CEPA

The bank's views on the possible pricing of this revolving credit (RCF) / LoC facility – based on a single B rated entity - is discussed in section 4.2.2 below.

[30] For completeness and consistency with regulatory precedence, we have considered evidence of borrowing costs at a rating level of BBB+ and above (i.e. investment grade) as part of our cost of capital estimate in Annex D.

Financial market constraints

In establishing a range for the required profit margin it is also important to recognise, as with regulated network companies, that certain market constraints will apply in order for the regulated company to be able finance its activities:

- As discussed above, Section 2 shows that for a given credit rating very similar businesses must meet certain target metrics for EBIT relative to sales.
- A power company's hedging and financial policy and cash-flow predictability are also important factors in maintaining sufficient credit quality and appropriate access to liquidity (e.g. in the form of cash bank line availability).

Table 4.6 below applies the illustrative ratings grid that we developed in Section 2 by drawing on our analysis of risk profile as presented in Section 3 and Annex B.

Table 4.6: Illustrative risk matrix for a regulated electricity retailer

#	Factor	Relevant sub-factors	Assessment	Risk *
1	Scale and business diversity	Market share, customer churn and company scale in market Structure of the market	▪ Like any price regulated business, reset of price controls a key risk for the company ▪ Uncertainty in the wider regulatory policy applied to the NI market	↑
2	Financial and trading policy	Capital structure and requirements Integration and hedging strategy	▪ Shortages of hedges in the market increases exposure to spot market ▪ Increases the need to insure internally against supply risks	↑
3	Efficiency and profitability	EBIT margins Profits relative to revenue and costs (profit volatility measure)	▪ Cost to serve pressures within a price regime which fixes the gross allowed margin ▪ This increases 'margin' risk between costs incurred and revenues allowed under the revenue cap	↑
4	Cash-flow predictability	Impact of the regulatory regime Integration and hedging strategy	▪ K-factor may no longer provide the revenue protection for the price regulated business in a competitive market[31] ▪ Risk of loss of market share / general changes in load profile	↑

Source: CEPA

** relative to previous price review*

Given the factors which investors and providers of credit to the regulated business can be expected to take into account when considering the riskiness of their investment, it suggests that, at least compared to previous price controls, required earnings (as reflected in the required profit margin)

[31] As discussed in Annex C, while the operation of the K-factor may provide a regulatory entitlement to recover under-recovered costs, the business may not have the capacity to do so in a market that is open to competition.

from the regulated business are increasing to address the increase in risk and deterioration of core of trading and 'asset light' business rating factors. In particular:

- a deterioration in the access to hedges increasing the regulated retail business' exposure to SEM spot prices;
- increasing customer churn and a declining market share and, therefore, risks that costs are incurred but not recovered; and
- internal pressures on the "cost of supply" per customer.

The assessment in Table 4.4 is also particularly important in helping to draw together the different pieces of analysis on required profit margin.

What it indicates (albeit on a relatively qualitative assessment basis) is that the riskiness of the earnings base of the regulated business is increasing for both lenders and shareholders in the regulated company. All things being equal, this would be expected to apply upward pressure on the required profit margin needed to ensure the regulated business remains financeable in a changing wholesale and new competitive retail landscape.

4.2.2. Cost of capital x capital base

Annex D provides our initial assessment of the cost of capital of an asset light regulated retail electricity business with Table 4.7 below summarising our findings. We show a low and high range for the cost of capital based on a standard electricity "retailer" maintaining a BB to B credit rating with a 49.8% gearing capital structure.

Estimates of the cost of debt and the cost of equity (by reference to the CAPM) require assumptions of the Equity Risk Premium (ERP) and/or the Risk-free Rate (RfR). For our initial estimate of the retail business cost of capital, we have adopted a nominal RfR and the ERP assumption as referenced in the UR's Approach consultation (5.25% and 5.0% respectively). This is in order to be consistent with NI regulatory precedent.

In developing the range, we also have accommodated evidence provided by a bank on indicative debt pricing for the notional RCF/LoC facility outlined above.

To provide this facility to a single B rated standalone entity, the bank suggest they: "*would expect margin pricing in the region of 5.00%, with a typical commitment fee of 40% of the applicable margin and c. 50bp reduction for Letter of Credit drawings.*"[32]

We have developed our own range for the cost of debt to accommodate this evidence, although we take a longer term view of the cost of borrowing that the asset light trading business is likely to face for a RCF/LoC facility. We adopt the assumption that the LoC drawings on this facility would receive a 50bp reduction on the debt premium (i.e. a return of 4.5%).

[32] Note this debt margin is quoted relative to LIBOR rather than the risk-free rate.

In terms of calculating the cost of contingent capital:

- For the retailer's debt facility, we have assumed that this incurs a commitment fee of 40% of the retailer's debt premium (consistent with the evidence provided by the bank).
- For equity, we have assumed a return of 4.75% is provided by the lender, resulting in a net contingent cost of equity equal to the cost of equity minus the return of 4.75%.[33]

The final column of Table 4.7 below then shows our initial point estimate of the asset light retail business' cost of capital. This accommodates both the standard inputs for a CAPM based WACC estimate and the market evidence referred to above. For the purposes of calculating an initial range for the required retail business return (as implied by the WACC x capital base approach) we have applied this scenario (i.e. the CEPA initial estimate) within our modelling.

We note that although Table 4.7 presents individual parameter assumptions for the retail business cost of capital, the focus should be on the overall cost of debt and cost of equity assumptions used rather than the individual parameters. We have adopted a relatively long term but consistent view of the financing costs the 'asset light' retail business would be likely to face.

Table 4.7: Estimate of the retail business cost of capital

Element	Low	High	CEPA initial estimate
Risk-free rate (nominal) [1]	5.25%	5.25%	5.25%
Debt premium (retailer)^	3.50%	6.00%	5.00%
Nominal cost of debt (retailer)	**8.75%**	**11.25%**	**10.25%**
ERP [1]	5.00%	5.00%	5.00%
Asset beta	0.5	0.6	0.6
Equity beta (retailer)[34]	1.00	1.19	1.19
Nominal post-tax CoE (retailer)	**10.23%**	**11.22%**	**11.22%**
Taxation[35]	20.00%	20.00%	20.00%
Nominal pre-tax CoE (retailer)	**12.78%**	**14.03%**	**14.03%**
Gearing (retailer)	50%	50%	50%
Nominal pre-tax WACC (retailer)	**10.78%**	**12.64%**	**12.15%**

Source: CEPA analysis

1 Assumption adopted to be consistent with NI regulatory precedent / UR Approach consultation

^ Assumes credit rating of B to BB for a standard retailer

[33] The 4.75% assumption reflects the retailer receiving a return of the nominal RfR with a 50bps reduction. This is a long term assumption being significantly higher than the return which might be expected in current markets.

[34] Re-levered at the retailer gearing level.

[35] We have adopted a corporation tax assumption of 20% (the main rate of Corporate Tax for 2015 as announced through the 2013 budget.

Applying these financing cost assumptions to the retailer capital base assumptions (based on our "maximum" and "minimum" scenarios described in section 4.1.2), provides an implied range for the required retail business return in the range 3.0-3.7% of projected turnover[36] (or £10.5m to £13.0m in nominal terms). This is illustrated in Table 4.8 below.

Table 4.8: Implied range for the required profit margin from a WACC x capital base approach

Scenario	Minimum	Maximum
Required return (£m)	10.5	13.0
Implied required profit margin range	3.0%	3.7%

Source: CEPA analysis using Power NI accounting advisor, Power NI and UR data

This reflects a return on a core required capital base that is needed to support the day to day operations of the retail business, and a return on a contingent capital base that is required to effectively trade in wholesale and retail markets. It is therefore a total required return to remunerate the capital that needs to be employed by the regulated business.

We note that both the supply entitlement[37] (St) and the generation cost (Gt) terms of Power NI's regulatory pricing restriction in theory allow the retail business to be funded for a return on its collateral capital base. In the case of the Gt (generation cost) term, this derives from the costs of collateral incurred in the hedging market and with SEMO (the SEM market operator).

If however, as stated in Section 3, the cost of collateral or risk capital is not being remunerated through the purchasing costs allowed under the Gt term, then the remuneration of the capital which is needed by the business to effectively trade, must be recognised elsewhere within the funding formula (i.e. the profit margin).

Given the real constraints in the hedging market[38] and the issues that this creates for non-vertically integrated organisations, we have considered the required return on a combined total basis (i.e. St and Gt). The return needed to be funded through the supply entitlement (i.e. St profit margin entitlement) could therefore be towards the lower end of our implied range of 3.0-3.7%. This however relies on part of the required total business return being funded through the Gt term over the course of the price control period.

4.2.3. Regulatory precedent and profit margins in other sectors

Annexes E and F review evidence of allowed profit margins in other retail price controls and observed profit margins in other retail and 'asset light' companies.

[36] The modelling adopts an assumption of £356m consistent with Power NI's BEQ submission.

[37] Which includes the allowed profit margin.

[38] Section 3 and Power NI's Approach response consultation highlights a lack of contract volume availability and point in time strike prices from the shortage of liquidity in the SEM contract market and the general operation of the market.

Regulatory precedence

As regards regulatory precedence, our main finding is that the comparators which the UR has cited in its Approach consultation (low risk historic UK based retail price controls) are likely not to be relevant to Power NI's regulated activities going forward, particularly given the business risk and the price control regime which applied at the time of these benchmark determinations.

The regulatory decisions made by Ofgem and the then Monopolies and Mergers Commission (MMC)(now the CC) during the 1990s were set in only semi-competitive retail markets (at best). These decisions were made before competition in these sectors had fully developed and also before evidence from competitive electricity markets (such as the GB electricity market) was available to regulatory authorities on profit margins (we return to GB evidence below).

The early 1990s margin decisions made by Offer and the MCC were in particular for regulated businesses acting effectively as a monopoly service provider.

Perhaps though, the most compelling reason why we consider these historic UK determinations may no longer be relevant to Power NI's retail business, is they may not properly account for the "risk capital" and collateral requirements that are associated with forward purchasing of energy in liberalised wholesale electricity markets, such as the SEM.

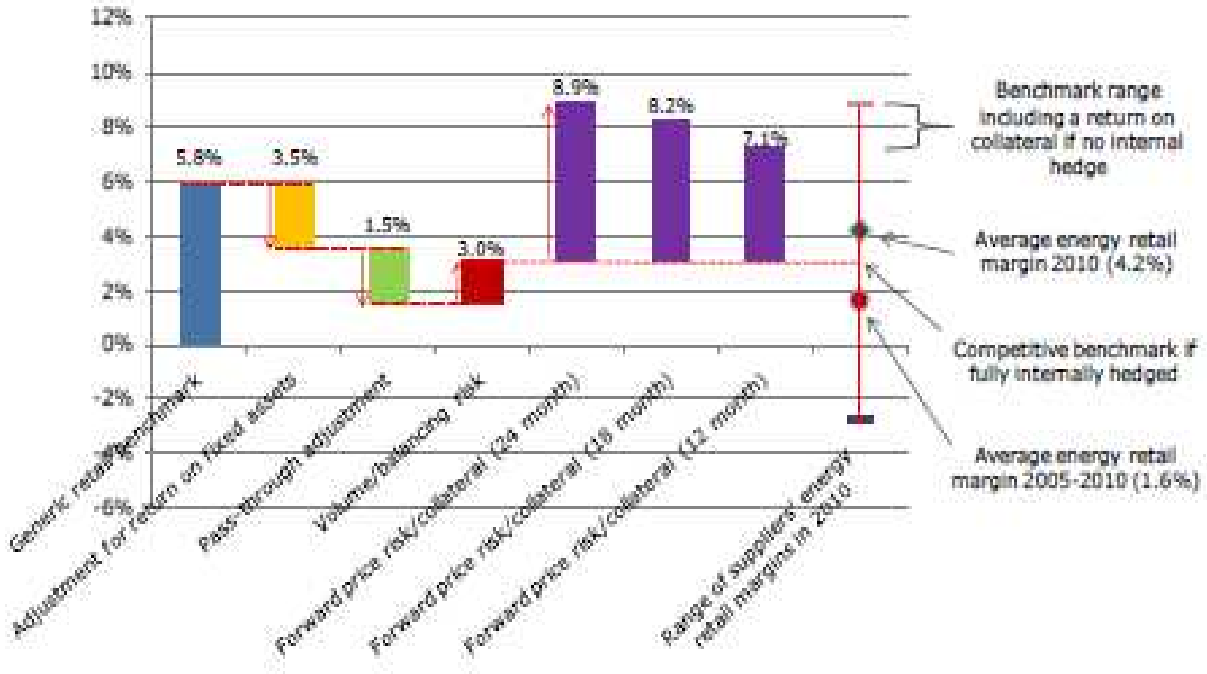
The previous decisions made by Ofgem and the MMC in particular were taken in very different wholesale market contexts. For example, wholesale electricity price dynamics have changed significantly since the early 1990s (linked to greater volatility in international oil and gas prices) and larger collateral requirements now placed on electricity trading businesses.

These impacts are explicitly brought out from Ofgem's profit margin analysis which it completed as part of the retail market review (see Figure 4.2 below). Ofgem's analysis recognised the need to account for the "*significant risk capital and collateral requirements associated with forward purchasing energy in volatile energy markets*"[39] when benchmarking required retailer profit margins.

We find that after adjusting Power NI's capital requirements, regulatory regime and the context of the SEM, that Power NI might sit in the range 3.0-4.0% on Ofgem's range. This reflects that the price regulated retailer in the SEM faces different volume/balancing risks compared to an electricity retailer in the BETTA market, and the findings from the capital base x WACC analysis that suggest a required total return on the retail business capital base is likely to be in the range 3.0-3.7% of projected turnover.

[39] Ofgem (2011): 'The Retail Market Review – Findings and initial proposals'

Figure 4.2: Ofgem profit margin benchmarking analysis



Source: Ofgem

Given the above, we also find that going forward, certain Australian regulatory determinations and evidence of observed profit margins from the competitive GB market, may provide more useful benchmarks for considering Power NI's required profit margin.

Ofgem has found that energy companies in GB's liberalised market have targeting much higher profit margins "through the business cycle" than what was allowed during the 1990s when price controls were in place, a finding that is brought out of the recent supply market indicator reports.

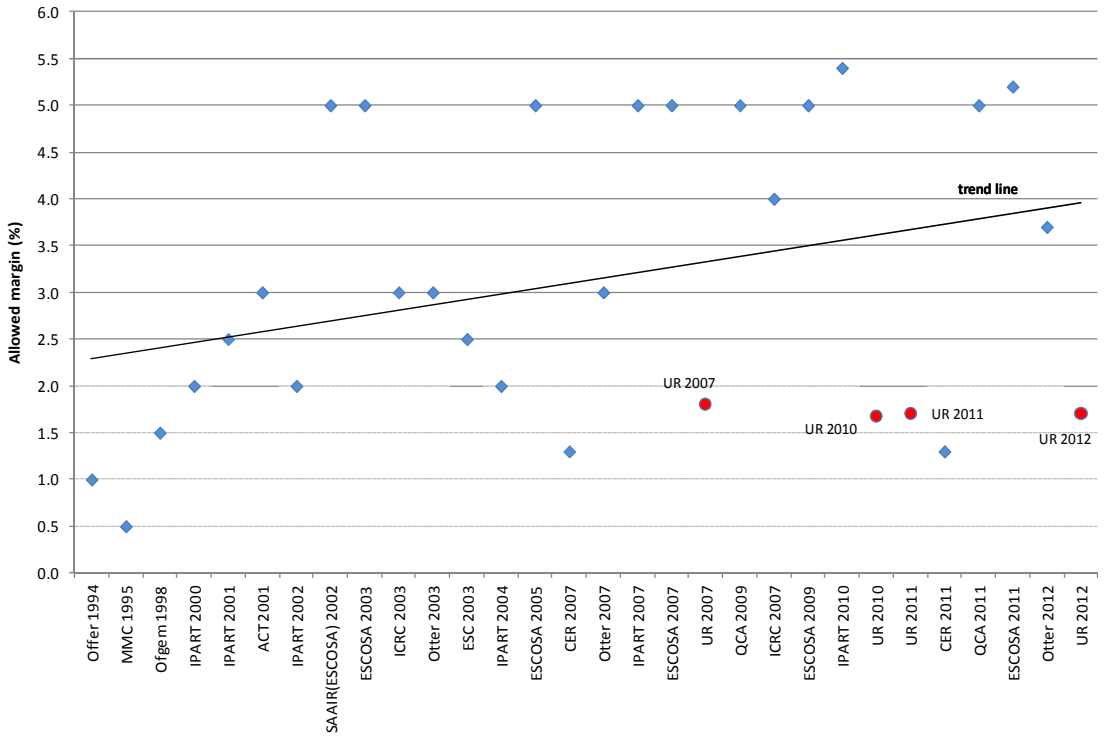
Evidence from more recent Australian decisions suggest that as competition (and the threat of competition) develops, profit risk and therefore the margin required by investors might also be expected to increase. Margin determinations made by the MMC in the 1990s[40] also recognised the impact of increased risks applied to retail telecoms businesses as competition developed and the need to reflect this in allowed returns where price controls applied.

Australian regulators have over time increased their allowed profit margins as protections from wholesale energy purchase and volume risks and competition have been removed. Given the increasing wholesale risks and capital requirements which Power NI's regulated activities face, we believe these determinations are now particularly relevant comparators for the 2014 review.

[40] See for example, MMC (1994): 'British Telecommunications Plc: A report on a reference under section 13 of the Telecommunications Act 1984 on the charges made by British Telecommunications Plc for calls from its subscribers to phones connected to the networks Cellnet and Vodafone', p. 32

Figure 4.3 brings out the findings of our benchmarking analysis together showing the evolution of allowed profit margin determinations over time for determinations made by the UR, CER, Ofgem, MMC and various Australian electricity regulators of regional state markets.

Figure 4.3: Benchmarking analysis of regulatory determinations



Source: CEPA analysis of regulatory determinations

Figure 4.2 illustrates a clear trend of increasing allowed profit margins by Australian regulators for regional state retailers which face increased competition, volume and purchasing risks. It also illustrates the more recent UR determination (although set in a market context open to competition) are below the trend line (and indeed, act to reduce the slope of that trend line).

These benchmarks, noting that care needs to be applied in ensuring they are comparable with NI, might suggest that an appropriate profit margin for Power NI's retail business is in the range 3.0% to 4.0%. This conclusion reflects the evidence from recent Australian retail determinations and Ofgem's retail market review findings which we consider reflect the price and volumes risks that are faced by Power NI's regulated business in NI.

Observed profit margins in other sectors

We have also reviewed evidence of observed profit margins from other energy retailers and retail sectors as a benchmark for the required profit margin for Power NI's regulated activities in the 2014 price control period (see Annex E). This is based on the established regulatory principle that to

attract capital into a sector, allowed returns should be comparable to similar investment opportunities given the characteristics and the risks of the investment opportunity.

We have reviewed market evidence of observable profits margins in UK, US and European retail and utilities sectors. This has involved compiling a sample of listed retail businesses in the FTSE350 and published company sector financial databases, where profit margins have been observable because of stock exchange disclosure requirements.

Table 4.9 below summarises some of the key findings of the UK analysis.

Table 4.9: Evidence of observed profit margins in other UK retail and asset light sectors

Element	EBIT to Net Sales (%) – 2006 to 2012			EBIT margin (%) 1997 - 2006
	Mean	High	Low	
All firms	12.0%	34.6%	-4.5%	12.7%
Utilities	21.1%	34.6%	6.0%	23.7%
Apparel retailers	14.5%	19.7%	6.9%	13.9%
Telecoms	14.6%	18.1%	10.3%	11.0%
Food retailers	4.5%	9.6%	-4.5%	5.9%
Speciality retailers	11.7%	30.4%	2.4%	6.9%
Home retail	9.4%	15.1%	5.5%	10.7%

Source: CEPA analysis of Bloomberg data

For the UK, we have reviewed profit margins for two time periods:

- 2006-2012
- 1997-2006 (the most recent 'complete' business cycle as measured by HM Treasury)

We believe the period 1997 to 2006 may provide a truer picture of underlying profitability as it is measured over a 'complete' UK business cycle.

The observed average EBIT margin for all firms in the sample and the 1997-2006 and 2006-2012 time periods is around 12-13%.

Observed EBIT margins in the utilities sector are the highest across all the sample sectors. This might be expected given the highly capital intensive nature of the business.

In contrast food, home and apparel retailers, which include supermarkets and high street retailers (which Ofgem has found to be more reasonable comparators for energy retail (see Annex F)), are lower with an observed EBIT margin in the range 4.5% to 14.5% (if measured over the period 2006 to 2012) and 5.9% to 13.9% (if measured over the 1997-2006 UK business cycle).

One of the statistics reported in Annex F is Asset Turnover.[41] The Alberta Energy and Utilities Board used a similar measure when setting a margin based price control for ENMAX Energy

[41] Calculated as total sales revenue divided by total assets.

Corporation (EEC). Given that the food and apparel retailers in our sample have an asset turnover greater than 2.0 (indicating that they are the most 'asset light' businesses in our sample) this again suggests these sectors are likely to be the most applicable benchmarks for electricity retail.

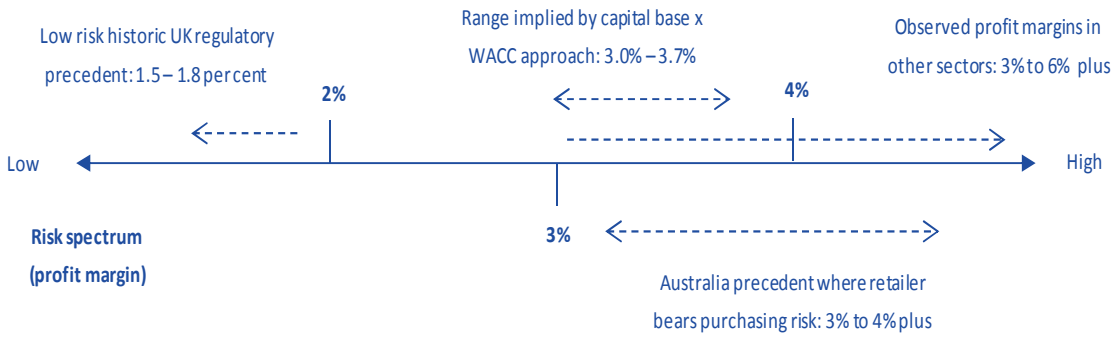
This evidence from other retail sectors and 'asset light' businesses, together with previous analysis by Ofgem on profit margins (and the impact on margins from wholesale pricing risks) as part of its Retail Market Review and Probe, indicates that the required profit margin for Power NI's regulated business might be in the range 3-6% given the risk profile of its activities.

4.2.4. Spectrum of the required profit margin

Figure 4.4 below brings the different pieces of the analysis together into a risk spectrum for the required profit margin. At the bottom-end of the range, is the low risk historic UK regulatory decisions, while the top-end of range reflects observed profit margins from other electricity retailers and retailers from other sectors (e.g. supermarkets and high street retailers).

The margin spectrum also shows that the most relevant regulatory benchmarks (allowed margins for electricity retailers in small regional markets who face some form of wholesale purchasing / volume risk and are subject to retail competition) and implied range from the capital base x WACC analysis, sit somewhere within the bottom and top-end of the range, with both pieces of evidence suggesting a required margin of around 3-4%.

Figure 4.4: Findings on the required margin



Source: CEPA

4.3. Conclusions

Where then does the appropriate range and point estimate of the required profit margin for Power NI's regulated business sit?

Given the capital requirements of the regulated business, and the expected cost from the retailer having to access that capital, a profit margin of 1.7% as allowed in the current price control seems insufficient to sustain the capital that an efficient company would be expected to require to trade in the SEM and a retail market open to competition.

Applying our framework of testing for a required profit margin, and therefore financeability, suggests a margin in the range 3-4% of turnover would be more consistent with the capital base, risk profile and expected returns by investors from the activities which are subject to price controls. This would also be consistent with the benchmarking analysis of profit margins in other sectors and we believe would meet our financeability test.

ANNEX A: FINANCEABILITY OF ASSET LIGHT BUSINESSES

This annex reviews evidence of the types of factor that ratings agencies take into account when analysing credit risk of unregulated power companies and similar 'asset light' businesses. Evidence of expected profit margins in other retail businesses, and what this might imply in terms of a required profit margin for Power NI's business, is provided in Annex F.

A1. Evidence from ratings methodologies

Ratings agencies have clear methodologies that they use for assessing companies in different sectors. In this section we review the types of factors that are considered by ratings agencies in assessing credit risk for unregulated utilities and power companies and asset light businesses including postal/express delivery, global retail businesses and the publishing industry (selected as comparators because of the economic characteristics of the sector).

A1.1 Unregulated utilities and power companies

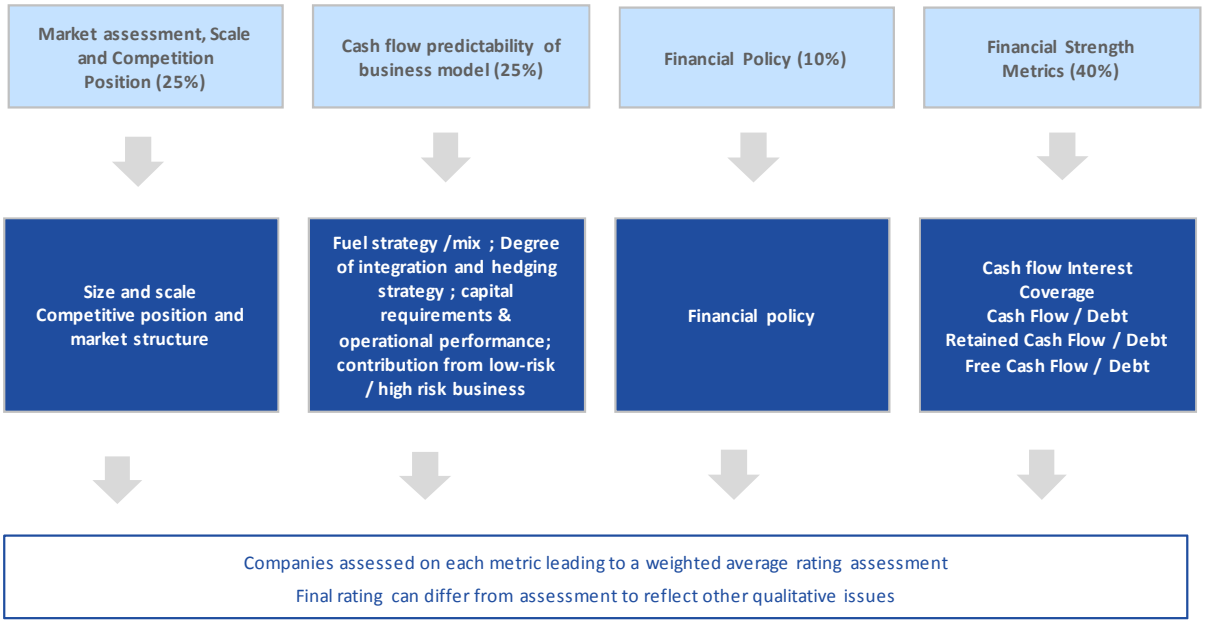
Moody's do not produce a rating methodology for standalone retail electricity businesses. However, the ratings methodology for unregulated utilities and power companies[42] provides an indication of the factors that are likely to be taken into consideration. These include:

- market assessment, scale and competitive position;
- cash-flow predictability of the business model;
- financial policy; and
- financial strength metrics.

These are combined in a sector ratings methodology including various sub-factors to account of both qualitative and financial measures of the riskiness of the business. Figure A1 below summarises the weighting applied to each factor and sub-factors.

[42] Moody's (2009): 'Unregulated Utilities and Power Companies – Rating Methodology'

Figure A1: Moody's rating methodology for unregulated utilities and power companies



Source: Moody's (2009)

As discussed in the main report, while the ratings methodology applied by Moody's generally considers supply businesses in the context of an integrated utility business model a number of specific references are made to supply companies under the market assessment, scale and competitive position and financial policy ratings factors.

Cash-flow predictability (linked to market assessment, scale and competitive position) seems to be a particularly important element of the Moody's ratings grid for unregulated utilities. One of the elements that it considers is the degree of integration and hedging strategy. As part of this assessment "factor ratings assigned may therefore also take account of the degree of competition, churn and profitability of a utility's supply business."[43]

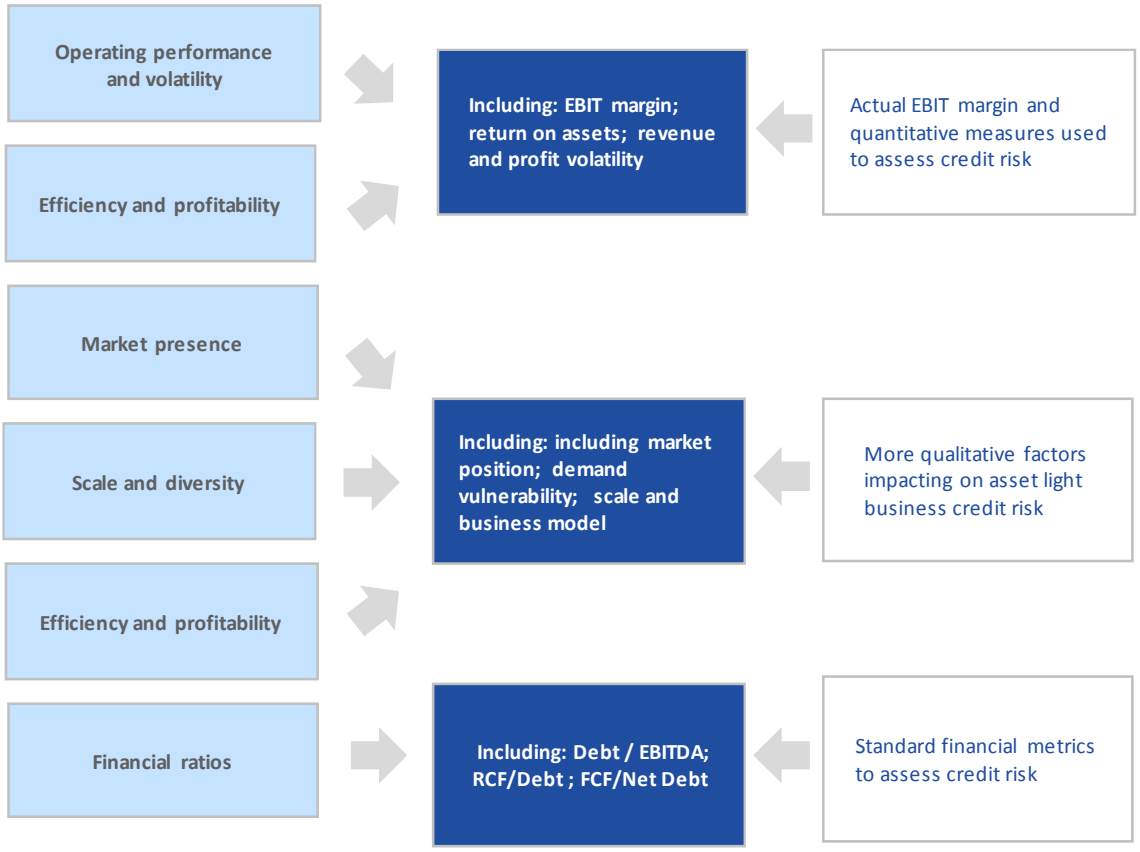
The impact on credit risk from business integration and hedging strategy are also considered as part of the cash flow predictability rating factor.

A1.2 Asset light businesses

We have reviewed the ratings methodologies that Moody's adopts for asset light businesses including postal and express delivery, global retail and the publishing industry. Figure A2 summarises some of the common factors which are taken into account. A detailed discussion of the reviewed industries is given in the following section.

[43] Ibid

Figure A2: Factors accommodated within asset light business rating methodologies



Source: CEPA analysis

For the efficiency and profitability factor, Moody's look at earnings before interest, taxes and non recurring items divided by revenues (EBIT margin) as a metric of operating profit margin levels.

Table A1 shows the credit rating applied within Moody's ratings methodology for a given EBIT margin level.

Table A1: Required EBIT margins for different credit ratings

Rating category	Aaa	Aa	A	Baa	Ba	B	Caa
EBIT margins	≥20%	16-20%	12-16%	8-12%	4-8%	0-4%	Negative

Source: Moody's

While other factors are clearly considered in the overall ratings grid for asset light businesses, Table A1 helps to illustrate the type of EBIT margins that are looked for by rating agencies in sectors which share similar economic characteristics to an electricity retail supply business.

A1.3 Industry reviews

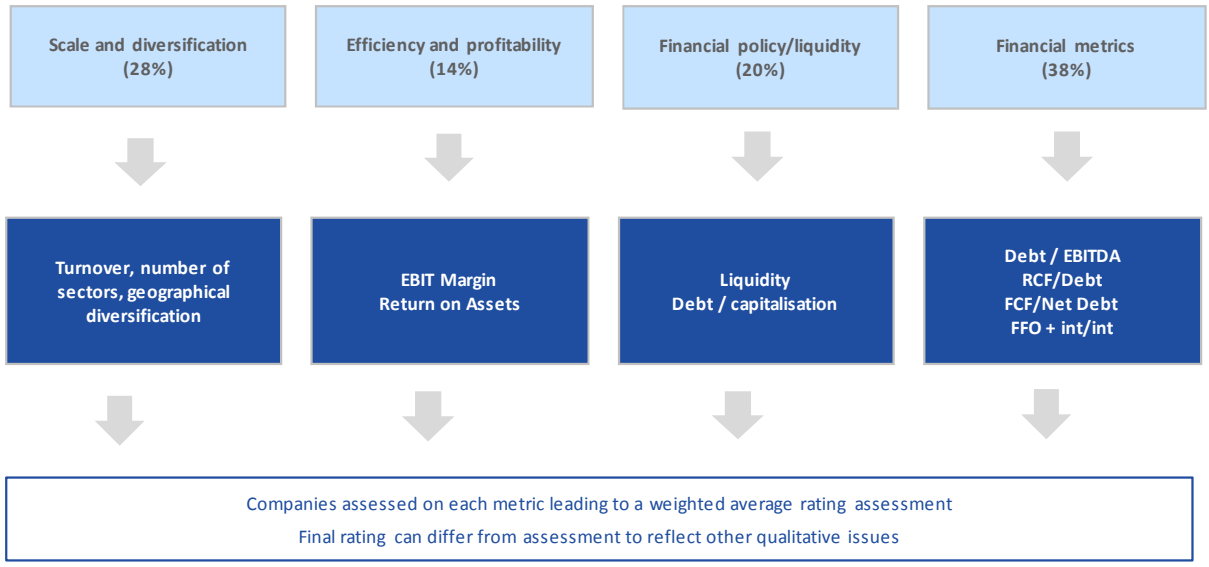
Postal and express delivery businesses

Moody's has a clear framework that it uses for assessing companies in the global postal and express delivery sector.[44] This covers postal operators that act as the national mail operators in their respective country holding the Universal Service Obligation (USO), and express delivery companies that provide transportation of packages and documents of limited weight and size.

While not a perfect comparator with an electricity retail business, the sector does share certain economic characteristics in that the businesses are relatively asset light compared to the utilities and network companies that are typically referred to when considering financing issues in price regulated sectors.[45] Given the context of mature markets, intensifying competition and exposure to substitution risks, two elements that are particularly important for credit quality in this sector are the companies' scale and their capability to pass on costs to their customers.

The types of factor considered in Moody's ratings methodology therefore include standard types of credit metric based on financial analysis, including operating margin levels which are considered to indicate a company's ability to manage rising costs and increasing competition in its respective markets and to maintain a pricing policy that generates adequate margins without affecting its market position. In addition, some qualitative factors reflecting the scope, and riskiness of the business are also included. This is summarised in Figure A3 below.

Figure A3: Moody's rating methodology for postal and express delivery businesses



Source: Moody's (2011)

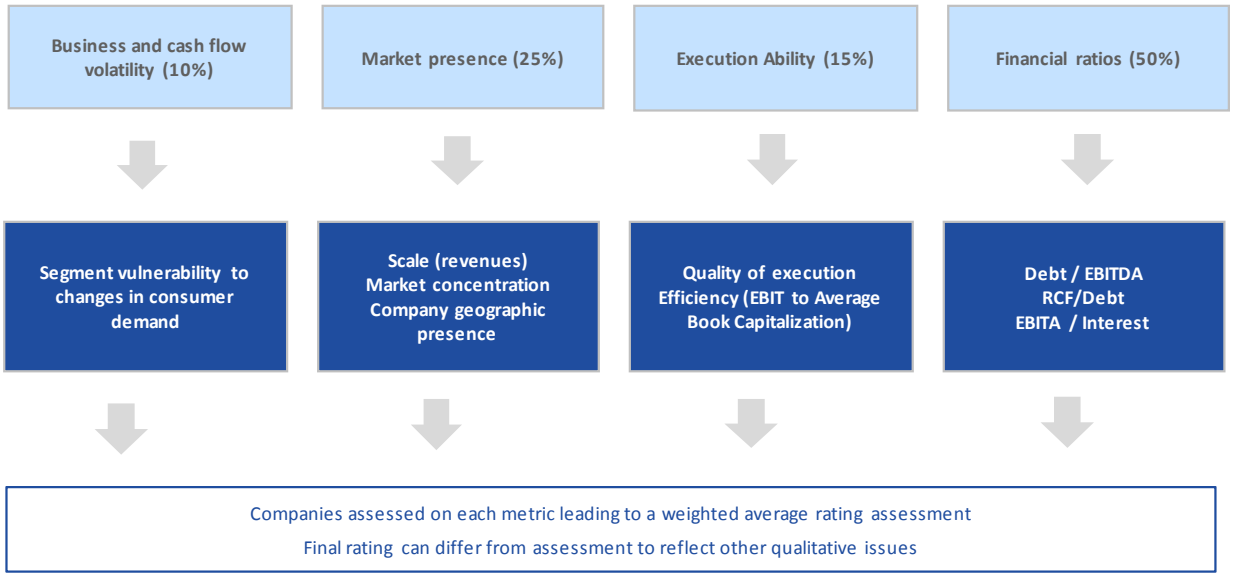
[44] Moody's (2011): 'Global Postal and Express Delivery Methodology'

[45] Note that an asset base for postal and delivery businesses can still be employed but is not always reflected on balance sheet because of a high reliance on operating leases.

Global retail businesses

Moody's has also developed a ratings methodology for assessing credit risk for companies that are operating in the global retail industry. [46] Similar to the approach applied for postal and express delivery companies this relies on four key factors that are important to the retail industry including business and cash flow volatility, market presence, execution ability and financial ratios. Figure A4 illustrates the weighting applied to each factor and the sub-factors or metrics that applied within each area.

Figure A4: Moody's rating methodology for global retail businesses



Source: Moody's (2011)

For the business and cash flow volatility rating factor, Moody's notes that for retailers:

> "*revenue and cash flow volatility is particularly important given the significant fixed operating costs, potentially meaningful seasonal variations in working capital inherent in the business, and easy pricing comparability on the part of customers, which leads to significant price competition.*"[47]

It also notes that where there are fixed costs and required asset investment this also acts to amplify the bottom-line impact of even modest variations in retail sales revenues (a similar point is demonstrated for regulated 'asset light' retail electricity businesses in Annex B and Annex D as part of our analysis of the business risk profile and cost of capital).

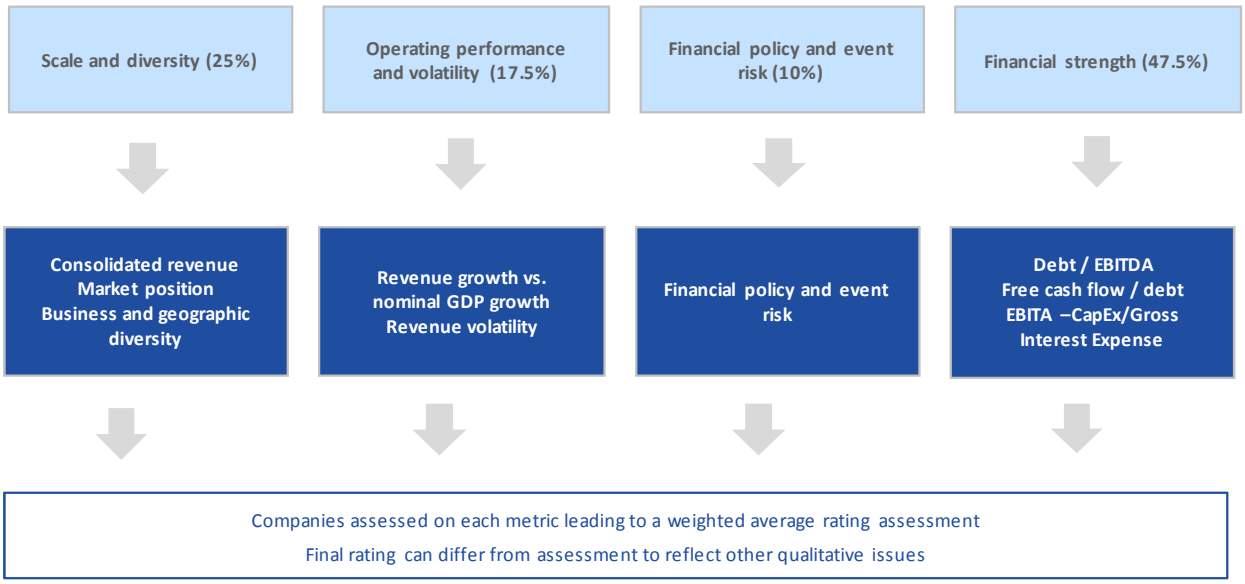
To measure or estimate this rating factor Moody's consider one of the key factors that drives business risk for retailers: the business' vulnerability to changes in consumer demand to factors such as changes in the economic cycle.

[46] Moody's (2011): 'Global Retail Industry'
[47] Ibid, p. 9

Publishing industry

Issuers covered under this rating methodology include a wide variety of companies that have roots in the print publishing industry.[48] Figure A5 below summarises the factors that are considered in the ratings methodology.

Figure A5: Moody's rating methodology for the publishing industry



Source: Moody's (2011)

One factor that is considered in the ratings methodology is operating performance volatility. This is considered an important indication of how well a company translates its market position and product/service offerings into revenue and how vulnerable that revenue may be to secular and cyclical changes. To assess revenue volatility Moody's applies a rating factor of comparing five-year average revenue to five-year standard deviation of revenue. Ratings may also consider EBITDA volatility as this incorporates the effects of operating leverage and management's ability to adjust costs in response to revenue changes.

A2. Applicability

While none of the sectors we have reviewed provide perfect comparators (given that the published rating methodology for unregulated power companies focuses on an integrated utility model) the following conclusions might still be made:

- Ratings agencies apply various efficiency, profitability and financial metrics as well as qualitative factors in deriving a company credit rating.
- For retail, asset light and utility businesses, the ratings agencies apply constraints on the financial strength and profitability that companies must achieve to acquire a credit rating.

[48] Moody's (2011): 'Global Publishing Industry'

- As these businesses must continue to access credit markets at efficient cost to finance and operate their businesses, the types of factor ratings agencies consider are likely to constrain what is required in terms of company returns.

There is no reason to suppose that similar conclusions to those made above do not apply to Power NI's retail electricity business. As we have set out in the main report, a notional regulated business operating in NI's retail electricity market will need to access various forms of working capital, risk capital and collateral in order to finance its activities. The credit risk methodologies presented above illustrate the importance ratings agencies place on the financial strength, ratios and cash flow measures (such as EBIT margins) of 'asset light' businesses.

The practical financing constraints that are applied by lenders and ratings agencies for asset light and retail business are in our view equally as applicable to a regulated retail business as are financeability considerations and constraints for capital intensive network companies.

We note that evidence from the postal and express delivery industry's credit rating methodology suggests that businesses with similar economic characteristics to Power NI's would need to achieve an EBIT margin in the range:

- 8-12% for a Baa rating (equivalent to BBB for Standards and Poor's (S&P));
- 4-8% for a Ba rating (equivalent to BB for S&P); or
- 0-4% for a B rating (equivalent to B for S&P).

ANNEX B: RISK PROFILE

This annex provides analysis of the risk profile of Power NI's price regulated activities. We first set out the risks which a *non-price regulated* retail electricity business in theory would face in NI's market (now fully open to competition). This involves a discussion of how retail pricing arrangements might be expected to work within a competitive market.

B1. Retail electricity risks

There are a number of business risks from operating a retail electricity business in NI. These include risks from having to purchase power through the wholesale market, non-fuel and internal retail cost related risks, regulatory and political risks and different forms of volume risk (both from changes in units supplied and the underlying customer base).

In an effectively competitive market without any price regulatory intervention, suppliers must compete on the basis of end consumer prices and their quality of service in order to acquire and retain their retail customers. The profitability of the business will depend on the interaction and management of these different business risks as discussed below.

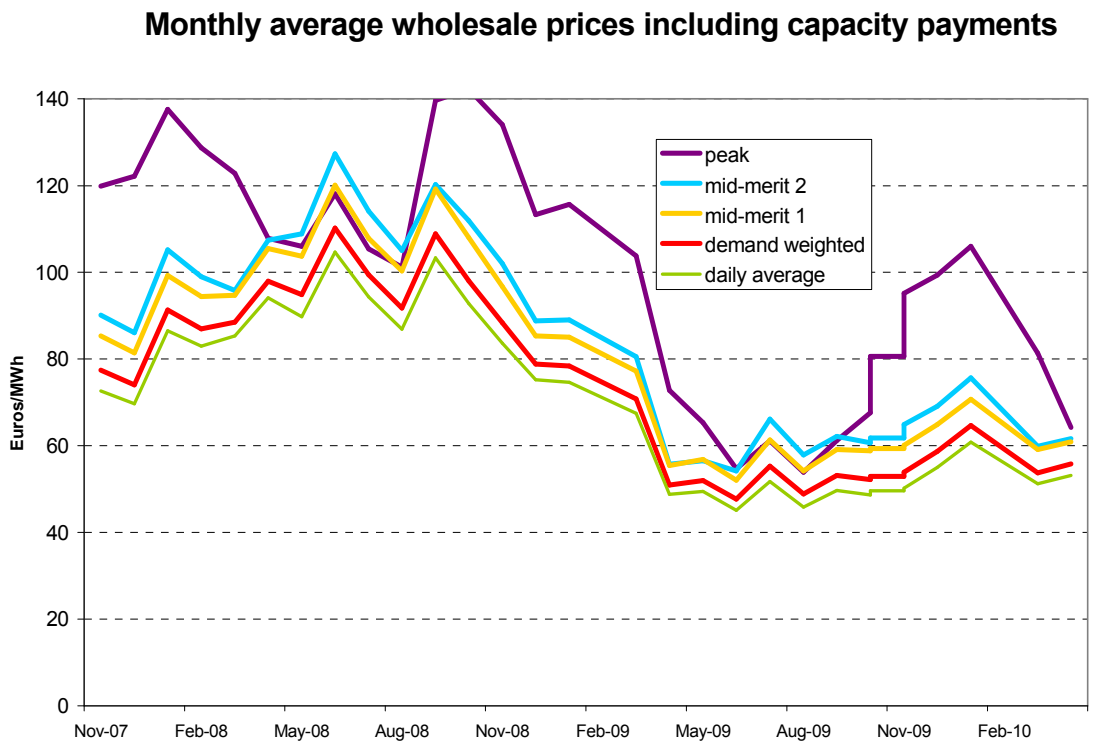
B1.1 Wholesale purchasing risks

A retail electricity supplier in the NI market must purchase its power through the SEM (a mandatory gross pool). However, trading through the wholesale spot market carries considerable risks given the unpredictability of the wholesale electricity price (set by the fuel price of the marginal plant for a given SEM market schedule).

Figure B1 shows monthly average prices in the SEM for the period November 2007 to early 2010. Suppliers lacking a generation hedge would have been exposed to wholesale price volatility and would have needed a means of hedging their retail price offerings. Exposure to the SMP would have increased the risk to suppliers cashflow and profitability, unless it could pass on the variability in input prices to its consumers, or hedge through fuel proxy hedges.

Suppliers in the SEM can and have sought to manage their wholesale price risk through various forms of hedging products and strategies. For example, suppliers can hedge their electricity purchases through three types of product: Directed Contracts, Non-Directed Contracts and PSO-Levy backed Contracts for Difference. A retail supplier in NI can also enter into currency hedges (to manage risks from trading in the SEM where prices are denominated in Euros but retail prices are in Sterling) and commodity hedges.

Figure B1: Monthly average wholesale prices for various products



Source: CEPA (based on SEMO/RA data)

However, while electricity hedging can help to manage wholesale price risk, the position taken by a supplier can also create various trading risks for the electricity supply business. For example, a supplier could incur costs if it were over-hedged (fewer sales than purchases) in a falling market or under-hedged (more sales than purchases) in a rising market. Either scenario would potentially create trading costs and risks for the supplier.[49]

As discussed in the main part of the report, both price regulated and non-price regulated supply businesses, are facing pressures on managing wholesale purchasing risk from shortages of hedges available in the market. Figure 3.2 (see main report) shows that total contract volumes offered in the market have been declining driven by lower directed contracts and a decrease in the volume of Republic of Ireland PSO-related CfDs and of Power NI PPB contracts offered.

The growth of renewables and increasing interconnection in the all-island electricity system (through displaced generation) has also been highlighted as a driver for reduced levels of hedges available in the market. From our discussions with Power NI, we understand many of the hedging products on offer are also increasingly shorter term in nature. For example, RoI PSO contracts are now only offered for auction on a quarterly basis, for the next quarter.

[49] This is effectively a form of volume risk. As most hedges contracts are for fixed volumes, but the retailer does not know exactly what future energy volume will be, and therefore, what volume will need to be hedged.

All things being equal, shortages of hedge within the SEM reduce suppliers ability to build a hedge portfolio that broadly matches its load profile thereby increasing the risks that retailers face. Where those costs are not recoverable, or manageable through alternative pricing arrangements, this increases the riskiness of the business.

We note that shortages of hedges (and the constraints applied by the hedging process) are a particular issue for Power NI's regulated business as non-vertically integrated organisations have to rely heavily upon the hedging market to manage their risk. As Power NI highlighted in its response to the 2011 – 2013 price review consultation paper:

> "The general operation of the hedging market forces Power NI to contract at specific and limited times. This exposes Power NI to both an ability to gain sufficient hedges and critically point in time strike prices."[50]

An NI retail business like Power NI's – heavily reliant on the outlook for hedging market – therefore faces significant risks from locking into hedges which may leave the retailer substantially out of market if pool prices change.

B1.2 Volume risk

Linked to the above, a retail supplier in NI will also face volume risks. These include supply risks from units of electricity sold and risks from changes in the retail customer base.

For example, an electricity retailer's *customer base* may remain unchanged for a period but the volumes of units which are sold may be higher or lower than is expected. How might such changes in units sold translate into underlying supply profitability?

If the electricity retailer targets a margin on the retail price, given future expectations for demand, then for every unit of electricity sold below or above expectations, this can be expected to translate into a fall or rise in profits. In contrast, if retailers target a margin *per customer*, an increase in units sold might be expected to have less of an impact on profits, as a fall or increase in profits might be expected to be competed away as suppliers reduce or increase their future prices to earn a normal return over the customer life or consumption cycle.

Changes in units sold may be driven by a number of factors, including variability in the weather, major demand outages or from changes in the conditions in the general economy (for example, units sold might be expected to fall during a recession if there is less business activity).

A retail supplier in an effectively competitive market also faces the risk of loss of demand from a loss of market share. This supply risk might be expected to increase as the competitive landscape matures, customer churn increases and end consumers search the market for the best offers that are available at any given point in time in the market cycle (hence volumes sold are linked to price risks discussed above).

[50] Power NI (2011): 'NIAUR Consultation – NIE Energy Supply Price Control 2011-2013 – Response to consultation proposals

This demonstrates the importance in a competitive market of customer acquisition and retention (discussed in a separate CEPA note on retail operating costs provided as part of Power NI's Approach consultation response).[51]

Major loss of market share is a real risk for retailers, if supply costs need to be recovered but the underlying customer base has reduced so significantly that were the supplier to seek to pass-on its input costs to the final consumer, it would make itself so uncompetitive in price that it would risk further loss of market share. This risk was demonstrated recently in the Republic of Ireland's electricity supply market where ESB incurred a significant loss of market share from the entry of Bord Gais Energy (BGE) in the market (see Text Box B1 below).

As discussed in Annex C (where we consider operation of K within market open to competition) unregulated suppliers typically adopt pricing methods to help manage these types of volume and price risk. For example, suppliers in the GB market typically charge an "ex ante" risk premium to help mitigate against volume (and resulting price) uncertainty as well as other non-hedgable risks such as changes in environmental scheme costs and network charges.

Text Box B1: Competition in Republic of Ireland retail supply

The retail electricity market in the Republic of Ireland has been open to competition for businesses since 2000 and in retail since 2005. Effective competition did not come about until 2009, when Bord Gais and Airtricity entered the residential market. The success of BGE's 'The Big Switch' programme led to 700,000 ESB customers (from an existing customer base of two million) leaving in the two years from February 2009. These levels of switching were the highest experienced within the EU.

In April 2011, the CER removed tariff regulation on ESB's activities in the residential electricity market. Full price deregulation came about when ESB's residential market share had been projected to fall below 60%. ESB offered a new price plan following deregulation and rebranded their electricity business as Electric Ireland. Net losses were stemmed and in the six months from April 2011, over 100,000 customers returned to ESB.

Source: ESB Annual report 2011 & 2012 and CEPA

B1.3 Retail supply and internal input cost risks

A supplier also faces a number of internal business risks with the ability to impact on the performance and profitability of the business.

For example, economic risks, such as unexpected changes in interest rates and exchange rates, operational risks (such as unexpected changes in operating costs linked to wage inflation) and cost recovery risks (such as material increases in customer defaults and bad debt) can all be expected to impact on retail supply profitability.

[51] CEPA (2013): 'Framework for setting retail operating costs in a liberalised market'

If internal operating costs increase, and costs are firm specific, all things being equal this will reduce firm profitability if the supplier faces a competitive constraint on the prices that it can charge its customer base (costs are incurred but cannot be recovered).

Alternatively costs may be recovered by the supplier (for example, an increase in internal labour costs) but this may cause customers to switch. Certain changes in cost may however effect all suppliers which are operating in the market (e.g. general wage inflation) which may have less of an impact on firm specific profitability.

B1.4 Regulatory and political risk

An electricity retailer will also face various regulatory and political risks, for example, from changes in taxation, legislation and market arrangements.

Changes in social and environmental policies (such as the NIRO) and electricity network charges, all impact on the costs which an electricity retailer has to recover from its customer base. Unexpected changes in these costs, if not recoverable, or not immediately recoverable, through future retail charges and revenues, may act to increase the variability of profits.

For example, if electricity network charges increase while retail prices are fixed, then while the retailer may in theory be able to recover these costs at a later date, in the interim there is a mismatch between payments made to the network company and the revenues that are received from customers. This inter-temporal mismatch in cash-flows has to be managed by the retailer increasing financial risk for the business.

Where the retailer has offered longer term fixed price deals, and network charges unexpectedly increase, it may also face the risk of unrecoverable costs. This has been a particular issue in the GB market following changes to network charging methodologies and increasing volatility of network company allowed revenues.[52]

B1.5 Asset light nature of the business

From an investor perspective, another key factor impacting on risk is the asset light nature of the business and the relatively thin profit margins retailers expect to earn relative to 'bought-in' costs from the wholesale market and networks.

All things being equal, as retail profit margins are thin relative to ongoing costs, investors are more likely to see their returns wiped out in the event of a downside supply shock compared a business where returns are a larger proportion of revenues (such as mature energy network company).

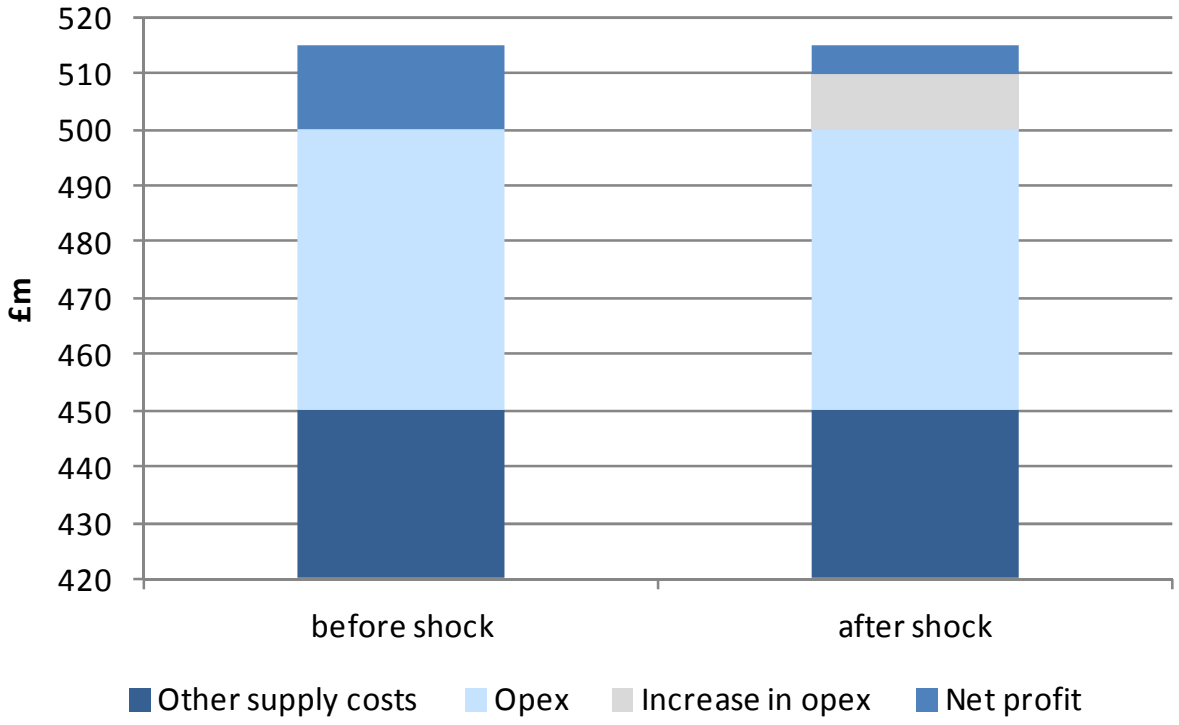
This is illustrated in Figure B2 which shows the impact of a 20% increase in retail operating costs for profits where a net margin of 3% is targeted on turnover. In this example, profits fall by 66%. Of

[52] See for example: CEPA (2012): 'RIIO-ED1: Managing Volatility – a report for EDF Energy' http://www.ofgem.gov.uk/Networks/PriceControls/WebForum/Documents1/CEPA%20EDF%20volatility%20report_final%20260912.pdf

course a small change in other supply costs, if not translated into a change in revenues, would have an even greater impact on profits.

This very simple example illustrates that it is not just the price and volume risks discussed above that are likely to impact on investors perception of the riskiness of an 'asset light' retail business in NI, but also how exposed expected returns may be to these retail supply risks given the dispersion and materiality of those risks.

Figure B2: Impact on supplier profits



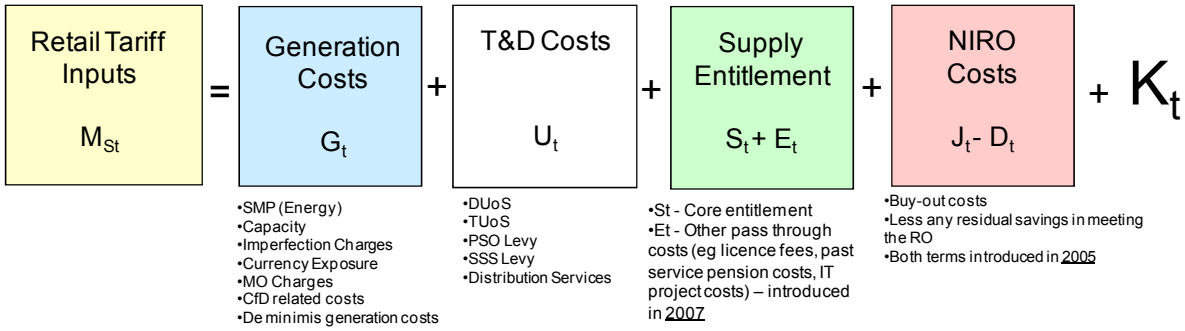
Source: CEPA

B2. Impact of the regulatory regime

The discussion so far has focused on the risks that an electricity retailer faces generally in the absence of regulatory price controls. However, in reality Power NI's pricing decisions are restricted by price controls set by the UR. This section explores the impact of the regulatory regime on the risks actually faced by the business.

The form of Power NI's price control has been in place since 1999/2000. The company's maximum allowed unit price of electricity (Mt) for customers subject to price controls is made of the elements illustrated in Figure B3.

Figure B3: Form of Power NI price control



Source: Power NI

The G_t refers to the cost of the wholesale electricity which Power NI purchases. As set out in UR's recent consultation paper, provided that Power NI complies with its Economic Purchasing Obligation (EPO), this is allowed as a pass through to consumers.

The Ut term covers the costs of using the electricity network in NI. Like wholesale costs, these are also an allowed pass-through item under the retail price control.

Jt encompasses costs associated with buy-out from the Northern Ireland Renewables Obligation (NIRO) with the Dt term representing any savings on the buy-out Power NI achieves.

Et is associated with costs which are currently considered to be uncontrollable and are passed through to customers on a 100% basis. These costs include licence fees; IT projects required in order to put in place the systems and processes to open Domestic markets and allow customers to switch supplier and past pension deficits.

The St term is effectively Power NI's allowed gross margin. It includes an allowance for operating costs, capital expenditure/depreciation and a profit margin. The allowed St term is currently collected on a ratio of 67% fixed amount plus a variable charge on a per customer basis of 33%. The allowed margin is calculated on the basis of *forecast* turnover.[53]

The Kt term is the price control correction facility whereby under or over-recoveries in the previous year can in theory be collected by the business (under-recovery) or given back to consumers (over-recovery). This applies to all costs (i.e. pass-through and controllable supply entitlement) allowed under the retail pricing restriction.

The regulatory regime as described above might be expected to have the following impact on the risk which the *regulated* retail business actually faces in the Northern Irish market:

[53] To be clear this means (consistent with the approach applied for retail gas price controls in NI) that the allowed margin is fixed as a percentage (currently 1.7%) of forecast regulated electricity sales turnover at the price review.

- The K-factor in theory allows Power NI to achieve full allowed cost recovery from its customer base and therefore the business faces a revenue cap and limited volume risk from its retail supply business.
- In theory Power NI faces very limited wholesale price risk provided it complies with its EPO. This is facilitated by the K-factor mechanism which allows for future recovery of unrecovered costs.
- As Power NI faces a fixed gross margin for the price control period, profits are exposed to systematic changes in operating costs (e.g. wage inflation) which cannot be passed-on to consumers until the reset of price controls.
- In theory the fixed variable split will reduce variable costs as customers switch away from Power NI and will increase variable costs as customers switch to Power NI. However, this assumes that the 67:33 split that is reflected in allowed revenues is reflected in actual outturn cost. Where they differ, the business potentially faces a margin squeeze if the fall in costs is not as large as the fall in revenues.[54]

As noted above, the EPO should in theory protect Power NI's regulated retail business from wholesale energy purchasing risk. However, reference to economic in the EPO suggests that, at least in theory, Power NI faces a form of low probability (but high cost) risk of incurred costs being disallowed by the UR under the EPO (essentially a form of ex post regulatory risk).[55]

The purchasing and hedging decision that Power NI is required to make are complex whilst also affecting a very large proportion of its underlying cost base. If an investor were to assume even a small probability of costs being disallowed then this would be expected to make a contribution to expected returns (assuming the risk is not diversifiable).

Perhaps though, the most compelling reason why purchasing risks may not be fully mitigated by the current regulatory regime, is that the K-factor, which should in theory allow full wholesale cost recovery, is constrained by the effects of a competitive market and its application within a regulatory pricing formula. We discuss the issue of K specifically in Annex C. Our conclusion is K may not provide the protection from risk that it has historically provided Power NI's business.

Finally we note that like any regulated company, Power NI's regulated business faces certain regulatory risks from its price review processes and the wider regulatory landscape. For example, Power NI has faced relatively short price control durations in recent years, which together with the absence of a road map/long term strategic view from the regulator of the future direction of retail

[54] This may particularly be an issue for allowed profits in the St term. The allowed margin (profit term) is set on the basis of forecast turnover and a reduction in customer numbers within the control period will reduce the allowed margin. This assumes though required returns (given capital employed) are variable. If the capital required to run the business does not fundamentally change as customer numbers change, then the business does not have the prospective of earning a margin that is sufficient to maintain the capital in the business.

[55] The extent to which this ex post risk is material would also depend on the role UR takes in reviewing the purchasing strategy ex ante as well as ex post.

electricity regulation) can be expected to create uncertainty for the business and investors of returns and recoverable operating costs.

Another example of regulatory risk faced by the business is the risk of unexpected changes in regulatory policy in the wider wholesale and retail market context.

As Power NI has highlighted to the UR in its BEQ submission, its retail electricity business is having to trade and operate in a wholesale and retail environment that is facing a number of regulatory and market changes from:

- the EU target electricity model;
- smart metering;
- retail harmonisation; and
- energy efficiency obligation.

In a regulated market such as electricity supply, these changes can potentially create cost of supply risks which are largely unhedgable by the business.

ANNEX C: OPERATION OF K IN A COMPETITIVE MARKET

The purpose of the K term in Power NI's pricing formula is to act as the correction facility whereby any under or over-recoveries in the previous year can in theory be collected by the regulated business (under-recovery) or given back to customers (over-recovery).

This K term applies to all retail costs (pass-through and controllable supply entitlement) allowed under the UR's pricing restriction.

Due to the fact that many of Power NI's costs are an *allowed* pass through (for example, wholesale purchasing costs) and because the K-factor in theory also allows any over or under recovery of allowed revenue to be included in the next tariff period (and hence recovered from customers), the UR conclude that profit margin, which is a function of risk, should be lower for Power NI than for retailers operating without price regulation.

This annex seeks to assess the operation of Power NI's K term in the NI retail electricity market, now open to competition, and why in our view, it may fail to eliminate risk and revenue volatility for Power NI's price regulated business.

C1. K-factors and the recovery of cost in a competitive market

A core activity of a retail electricity businesses is the effective management of incurred 'bought-in' costs from the wholesale purchase of energy and network use of system charges. As these costs are a large proportion of the retailer's underlying cost base, and profit margins are thin, efficient costs that are incurred need to be recovered.

Unregulated electricity retailers typically manage this process of cost recovery through a combination of ex ante and ex post pricing policies:

- Ex ante they may adopt pricing hedging positions or charge a "risk premium" within the profit margin to account for uncertainty of particular elements of the cost base.
- Ex post they might also operate their business in a similar way as a price regulated retailer, through a K-factor mechanism.[56]

In recent papers for Centrica[57] and EDF Energy[58], CEPA has discussed an example of the ex ante approach, involving an ex ante risk premium being applied in retailer margins to counteract the risk from uncertainty around network charges. In that context, the issue is that uncertainty of future network charges in the GB market (driven for example by revenue correction and incentive mechanisms in the network companies' price controls) mean that retailers face the risk of incurring different network charges than the ones they priced in to the final customer retail bill.

[56] Incurred costs are recovered ex post, to ensure average cost recovery over time.
[57] CEPA (2011): RIIO-T1 & RIIO-GD1: Uncertainty issues, A report for Centrica
[58] CEPA (2012): RIIO-ED1 Managing volatility, A report for EDF Energy

Now in theory the retailer can address this through applying a time lag of cost recovery (effectively an ex post K-factor type mechanism). However, the time lag implies an opportunity cost of time for the retailer. Future changes in prices also create a risk of customer switching.

The opportunity cost of applying an ex post cost recovery mechanism is, therefore, quite high for retailers given that they face demand side risk within the market. Hence, unregulated retailers have said they build in risk premiums into their margins, or in other words increase their ex ante margins, to take account of these underlying volatilities.

Unregulated retailers, therefore, have available a variety of ex ante and ex post 'pricing tools' to help them factor in supply risks and, in particular, to manage the risks from customer churn if an under recovery of cost were to require future price increases.

In contrast, a price regulated retailer, as is the case with Power NI, only has available an ex-post K-factor mechanism (given its price control restrictions) to manage the recovery of its incurred costs. The implications of this for the price regulated incumbent, where unregulated competitors also operate in the market, are discussed in the section which follows.

C2. Application of K by price regulated market

Figure C1 below illustrates the pricing strategies available to a regulated retailer like Power NI, dependent upon two states of the world that might occur and are impacted by the K-factor, i.e. either an under or over recovery of costs.

The key point to note is the potential asymmetry between the options that Power NI (as the price regulated incumbent) faces in different states of the world:

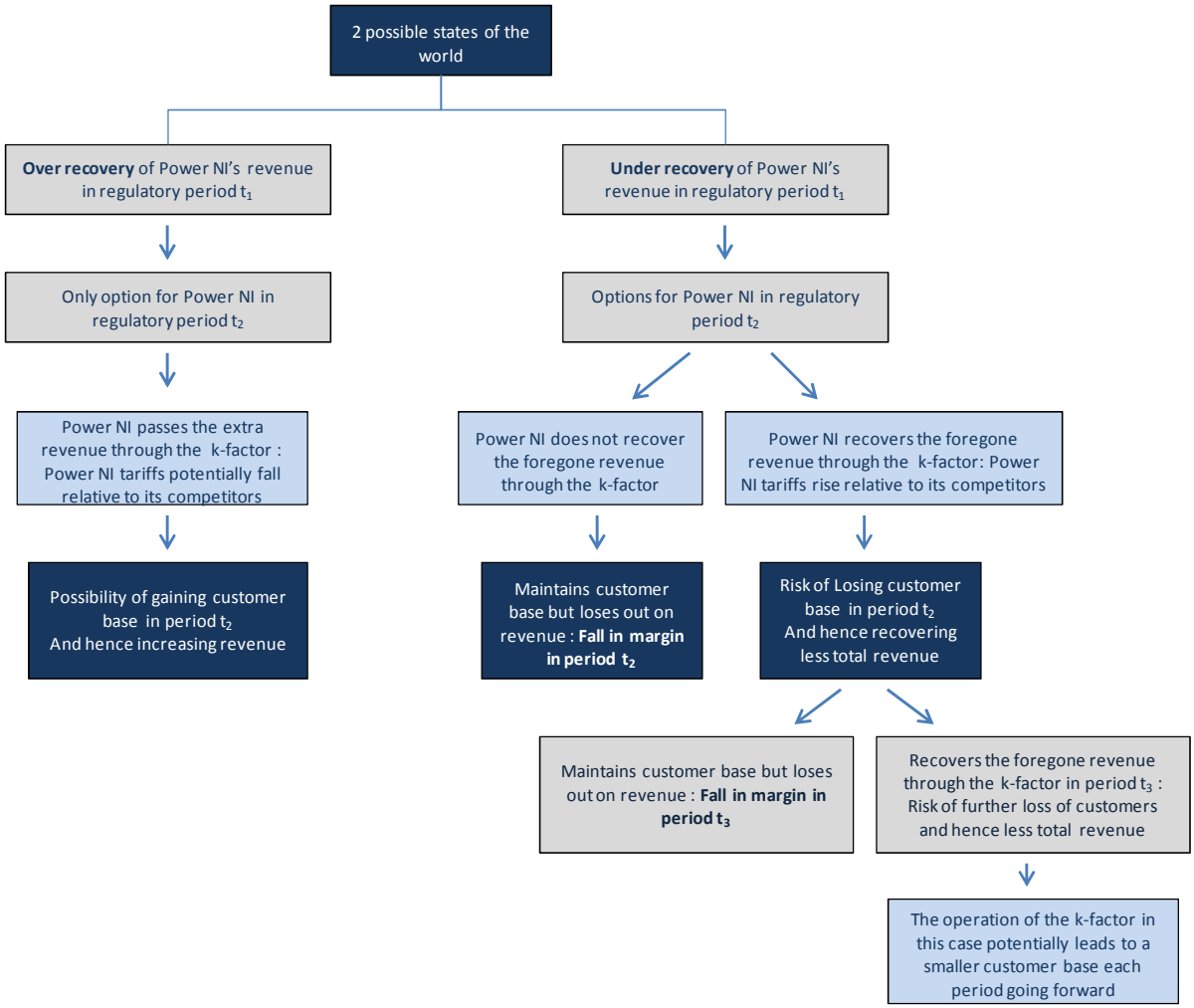
- in case of an over recovery, it is bound by the UR through its price controls to pass on all the extra revenue to its customers; but
- in times of under recovery, it may not necessarily be free to recover the extra costs from the customers in the next period.

Why is this the case?

In a retail market where there is competition, the price regulated incumbent faces a risk of losing market share to competitors if it seeks to recover an under recovery of its costs by the K-factor (i.e. ex post).[59] In an environment of a declining market share for the incumbent, this is a particular concern as with a smaller customer base to recover costs from, this may potentially lead to a further deterioration in the competitiveness of its pricing terms.

[59] Alternatively if costs are incurred but not passed through to the customers (via the K-factor in the next period), this will act to directly reduce retail business profit margins.

Figure C.1: Asymmetry of K-factor for under and over recoveries



Source : CEPA analysis

This is different from an unregulated retailer that faces the same options in both states of the world and hence can choose, for example, to stagger price increases or price reductions over different time periods in order to recover its underlying costs– essentially recovering costs and targeting a required profit "through the business cycle".

In a wholesale market like the SEM, the risks from under and over recovery of efficiently incurred costs are also closely linked to suppliers relative hedging positions and strategies:

- At any point in time, different suppliers will inevitably have different hedging positions (potentially fully efficient at the time they were struck) relative to the market.
- This will mean certain portfolios, depending on the state of the market at any point in time, can be expected to be "out of market" (with the supplier facing the risk of unrecovered costs and/or customer switching) while other suppliers will be "in of market" facing contracting gains and/or additional revenue from customer acquisitions.

This expected loss or gain from hedging might be expected to be broadly symmetric:

- At some points in the cycle a retailer might expect to be "out of market" (potentially facing contracting losses and customer switching).
- At other points in the cycle they may be "in of market" (facing contracting gains, more competitive pricing and, therefore, customer acquisition).

This however, may not be the expected outcome for the price regulated retailer, for the reasons set out in the subsection which follows.

C3. UR comments at the previous review

Power NI made representations at the previous price review (and in its current 2014 price review Approach consultation response) of the asymmetry of the operation of the K-factor.

The UR responded to this point as part of its final price review determination,[60] the key points of which are summarised in the text boxes below.

Box C1a: Dynamics in the case of an under recovery	
1	"The risks that Power NI describe which may affect the ability to recoup any under recoveries are not exclusive to Power NI, for example a general increase in wholesale prices will require other suppliers to increase prices too. This will provide scope for Power NI to increase their prices without losing market share. Given the fact that the Power NI market share is still likely to be around 80-85% by the end of this two year control, Power NI will have the ability to recoup any under recovery."

Box C1b: Dynamics in the case of an over recovery	
2	"In terms of passing back over recoveries Power NI argued (both during iterations and in their consultation response) that they cannot retain these, so the K has the effect of capping profits but not insulating Power NI from losses. The UR is firmly of the view that the K will insulate Power NI from making losses as outlined above. In addition to this, if Power NI have to pass back an over recovery then they will be pricing below prevailing market prices. This will represent a problem for Power NI competitors, and may well lead to migration back to Power NI. It is reasonable to assume that those customers who have switched away from Power NI are price sensitive. Therefore, whilst passing back an over recovery means Power NI cannot make extra profits (as they argue competitors can) those same competitors are faced with competing with tariffs that are artificially low in the subsequent year."

Source: UR

As set out above, we agree that in a liberalised retail electricity market many of the volatilities around wholesale costs are not exclusive to the incumbent operator Power NI.

However, the point that the UR miss is that irrespective of whether allowed items under the revenue formula are pass-through costs or are captured by the K-factor, competing retailers have additional pricing flexibility to manage these risks while the only tool available to Power NI is an ex post K. While K may provide a regulatory *entitlement* to recover costs, the price regulated retailer may not

[60] UR (2011): 'Power NI Price Control 2011-2013 Decision Paper'

have the capacity to recover incurred costs if it is to remain competitive relative to other suppliers in the market for its existing customer base and avoid the risk of further loss of market share.

The UR point to the fact that a loss of customers from an under recovery should be made up by a gain in customers in times of over recovery. However, again the point which is missed is that it is not simply being able to balance the loss of customers in one period with a gain in the next period, but rather the impact on competiveness that arises from this volatility in revenue and therefore retail prices as compared to its competitors. While Power NI's competitors can use 'price' as a mechanism to smooth volatilities in underlying costs (for example by staggering price increases or reductions), the price regulated retailer does not have this option.

The expected outcome for the incumbent is also linked to the discussion above on hedging. As is the case with unregulated electricity retailers in theory:

- In the event of a contracting gain, Power NI is required to pass-on any benefit to consumers. By doing so it may attract customers under its regulated tariff potentially leading to greater revenue and margin from acquired new customers.
- Similarly in the event that Power NI's portfolio is left "out of market", it faces the risk of price sensitive customers switching to other suppliers if all or part of the under recovery is recovered through a positive K.

However, in practice during the period of new entrant competition, the incumbent (price regulated) retailer is unlikely to face a symmetric upside and downside state of the world; during the period of developing competition it simply risks losing customers to entrant suppliers.

As this process occurs it faces a significant risk of under-recovery of contracted costs as these cannot be recovered from a smaller customer base in future periods if the business is to maintain its price competitiveness. Hence the asymmetry of K for under and over recovery.

What has changed in recent years to make these risks around the operation of K all the more acute, is that the retail electricity market has become increasingly competitive in NI. Churn rates in the non-domestic sector have reduced Power NI's market share significantly and at the end of September 2012, more than 135,000 electricity domestic customer have changed supplier since the effective opening of competition.[61]

In the domestic sector, the UR's more recent February 2013 Quarterly Transparency market monitoring report notes that: "*There is still a big share of customers remaining with the previously incumbent supplier* [Power NI]. *However, this situation is progressively changing, and the percentage of domestic credit (including direct debit) customers supplied by Power NI has been decreasing. In Q4 2012, this percentage was 80% which is a decrease from 81% in the previous quarter. Power NI currently suppliers 76% of keypad customers, which is a decrease from 82% from the previous quarter. The current non-incumbent share by customer in Q4 2012 is 20% for credit domestic customers and 24% for keypad customers.*"[62]

[61] UR (2012): 'Energy retail report'

[62] UR (2013): 'Retail market monitoring – Quarterly transparency report – Feb 2013'

The increase in churn rates has been in response to the entry of new competing suppliers in the NI market, and also the removal of switching constraints, with the implementation of the Enduring Solution in May 2012.

In Q4 of 2012, there has been a noticeable increase in the shares of Airtricity and Budget Energy, based on consumption, in the domestic keypad market, increasing from 11% and 5% in Q3 to 17% and 7% respectively. Power NI's share in this market segment has decreased from 83% in the previous quarter to 76% in Q4.[63]

Table C1 shows percent rates of quarterly switching for the whole of 2011 and the first three quarters of 2012. UR notes that with the Enduring Solution switching system going live, change of supplier numbers have increased to a current average of more than 10,000 per month.

Table C1: Switching rates in NI retail market

Period		Domestic (%)	Non-domestic (%)	Total (%)
2011	Q1	1.3	2.8	1.4
	Q2	1.5	3.6	1.7
	Q3	2.4	2.1	2.3
	Q4	2.9	3.0	2.9
2012	Q1	2.7	2.8	2.7
	Q2	2.6	3.0	2.6
	Q3	4.1	1.9	4.0

Source: UR

Events in the Republic of Ireland (see Annex B) have demonstrated how vulnerable an incumbent retailer can be to significant loss of market share in these market conditions. In general competing suppliers would also be expected to target more attractive customers, such as those who are more likely to pay their bills on time. The incumbent retailer therefore also risks being left with a riskier customer base to recover costs from in a market with active competitors.

C4. Summary

This annex has considered the operation of Power NI's K term in the NI retail electricity market. It has demonstrated that the dynamics of the regulated business passing costs to customers or recovering costs through the K term in a market without competitors (i.e. a monopoly market), and in a market with competitors *without* pricing restrictions, are very different in terms of the risks of losing out on customers and hence losing on revenue and future margin.

Our analysis of the operation of K in a competitive market suggests it may not provide the safeguard for profitability that the UR has in the past argued applies to the price regulated retailer and indeed may expose the retailer to certain purchasing and volume risks.

[63] Ibid.

These are risks which investors and credit rating agencies do account for in competitive markets.

For example, in March 2006 Moody's changed its rating outlook in respect of Centrica to negative despite its announcement to increase tariffs by 22%. This was due to the risk of Centrica losing market share from its retail pricing position and strategy.

Moody's rating outlook reflected: "…*Centrica's current disadvantage over its UK peers from its short generation position and its gas biased and thus costly fuel mix. As a result, Centrica's residential energy margins are further impacted by the necessity to purchase at high prices, power to meet its requirements. Moody's assumes that further acquisitions of power generating capacity (including power purchase agreements) are inevitable, but that such will come at a high price in the present environment, similarly to any upstream gas assets.*"[64]

[64] Moody's Investor Services (2006): 'Moody's Changes outlook on Centrica's ratings to negative' sourced from KPMG (2006): 'Report for Energy Australia – Appendum to Benchmarking Retail Operating Costs and Margins'

ANNEX D: ESTIMATE OF THE COST OF CAPITAL

This annex provides our initial Capital Asset Pricing Model (CAPM) based estimate of Power NI's weighted average cost of capital (WACC). The expectation is that this will be applied within a capital base x WACC approach of determining the required profit margin for Power NI's price control.

D1. Assumptions

The assumptions we have used to develop our estimate of the cost of capital are outlined in the main part of the report. These assumptions have been applied to establish the input parameters for an 'asset light' business cost of capital.

To develop a range for the cost of capital, we have assumed two scenarios that might apply to the asset light regulated business:

- An **integrated "utility"** which is potentially maintaining an investment grade credit rating. We consider evidence of borrowing costs at A to BBB credit rating levels.
- A **standard "retailer"** maintaining a BB to B credit rating with a capital structure informed by information provided by a bank.

Note that the **integrated "utility"** scenario is not based on a RAB-backed network company. To develop our cost of capital parameters for this scenario, we therefore place the greatest weight on market evidence from utility companies that have no network assets (e.g. Centrica).

For the reasons outlined in the main report, we have adopted the **standard "retailer"** scenario in the modelling of the required business returns.

D2. Gearing / capital structure

D2.1 Definition

When a WACC formulation is used to derive allowed returns, it is necessary to select an appropriate gearing ratio before a WACC value can be estimated:

$$WACC = g \times COD + (1-g) \times COE$$

where COE and COD are, respectively, the estimated cost of equity and cost of debt before taking account of the tax deductibility of debt interest payments and g is the gearing ratio.

Typically when setting a WACC for price controls, decisions are required about (i) the definition of gearing, (ii) whether the gearing should be 'notional' or the actual gearing of the company, and (iii) if notional gearing is used, what value to use.

In a regulatory context, gearing is typically defined as the ratio of net debt / RAB as the numerator in this ratio is (should be) the market value of the net debt attributable to the regulated business. In recent price reviews, UK regulators have also adopted an 'optimal' or 'notional' gearing approach in

assessing gearing for WACC calculation purposes, that is the proportions of debt and equity that an 'efficiently financed' company would employ. The notional gearing value is then set by reference to:

- regulatory precedent;
- market evidence (actual gearing levels that regulated companies have been able to carry); and
- financeability considerations.[65]

The notional gearing assumption for network companies typically accounts for medium/longer term borrowings (largely ignoring issues such as working capital although gearing on a 'net debt' basis is calculated net of cash holdings).

In contrast, retail businesses are 'asset light'. Power NI's business for example, only has a small RAB. The capital requirements of the business are therefore very different to a typical regulated company (as described within the main report).

Therefore, for the purposes of our analysis, we have adopted a slightly alternative definition of notional gearing to that typically applied in regulatory price determinations. We define gearing as: the proportion of working capital, borrowings for fixed assets and "risk" capital employed by the business which is financed by debt less cash.

D2.2 Market data

There is very limited financial data of financing structures for standalone retail electricity businesses, as retailers in GB markets typically tend to part of an integrated utility.

Accordingly we have looked at observed gearing levels of a selection of energy businesses and retailers which are listed on the UK stock exchange (see Tables D3 and D4 below). While these businesses are far from perfect comparators, they provide useful information of the types of capital structure adopted in similar sectors.

As set out in the introduction, we define our **integrated "utility"** scenario as based on a utility company without a RAB-backed network business. Therefore, for the energy sector we have excluded certain listed companies from our sample (e.g. National Grid, Pennon and SSE) given these businesses include network assets.

[65] See Ofgem (2012): 'RIIO-GD1 final proposals'

Table D3: Market cap gearing rates for utilities and retail companies

Company	Average gearing		
	1yr	2yr	5yr
Centrica	20.3%	19.4%	14.1%
BT	34.3%	36.2%	44.6%
Marks & Spencer	25.0%	25.8%	29.6%
Morrison	19.6%	15.7%	12.0%
Next	9.3%	11.0%	14.6%
Sainsbury	25.7%	25.8%	23.5%
WH Smith	0.0%	0.0%	0.2%
Tesco	23.5%	22.4%	22.3%

Source: Bloomberg

Calculation: Net debt/ Net debt + Market cap

N.B. Net debt =ST + LT Borrowings – Cash – Marketable Securities – Collaterals

D2.3 Regulatory precedent

We have also reviewed regulatory precedence of gearing assumptions used in recent price control determinations in the UK (see Table D4 below).

Table D4: Gearing assumptions in recent price control decisions

Decision	Year	Regulator	Allowed gearing ratio
NIE RP5	2012	UR	50%
RIIO-GD1	2012	Ofgem	65%
RIIO-T1 (NGET)	2012	Ofgem	60%
SONi	2011	UR	55%
NATs	2010	CAA	60%
Bristol Water	2010	Competition Commission	60%

Source: CEPA analysis of regulatory decisions

As with the network data, we note that for the reasons outlined above, these determinations are far from ideal comparators for Power NI's retail business, given the differences in the core capital requirements of the majority of these comparators.

D2.4 Standard retailer assumptions

For the **standard "retailer"** scenario, we have also taken account of evidence provided by a bank of the potential capital structure in relation to Power NI's asset light business on the theoretical basis of the company being a standalone entity.

Given the "peak" seasonal capital requirement of the business and assuming a £60m debt facility for capital structure is made available to the business, this implies a gearing ratio of 50% as set out in Table D5 below (see discussion in main report).

Table D.5: Market evidence on capital structure

Element	Assumption
"Peak" capital requirement	£120.7m
Debt (RCF / LoC facility)	£60.0m
Equity	£60.7m
Implied gearing	**49.8%**

Source: Banking advisor, Power NI and CEPA

D2.5 Conclusions on gearing

Based on the above, we have adopted an initial value for the gearing ratio (debt/debt + equity) in the range 20% to 30% for the **integrated "utility"**. This primarily takes account of gearing levels achieved by retailers and integrated energy businesses without network assets (our main comparator being Centrica). For the **standard "retailer"** we adopt the assumption of 50% gearing consistent with the analysis in Table D.5.

D3. Economy wide parameters

Estimates of the cost of debt and cost of equity (by reference to the CAPM) require assumptions of the Equity Risk Premium (ERP) and/or the Risk-free Rate (RfR). These are typically referred to as 'economy wide' cost of capital parameters.

For our initial estimate of Power NI's cost of capital, we have adopted the nominal economy-wide parameter assumptions referred to in the UR's Approach consultation and used for the NIE RP5 determination (these are a nominal RfR of 5.25% and a ERP of 5.0%).

These assumptions are used to be consistent with NI regulatory precedent.

D4. Cost of debt

D4.1 Approach

As with gearing we have assessed the cost of debt by considering evidence that would be consistent with both the **integrated "utility"** and **standard "retailer"** scenarios.

For the **integrated "utility"** scenario we have sort to calculate a cost of debt by adding a debt premium to the UR nominal RfR assumption of 5.25% and by considering evidence of the total cost of debt as observed directly from market data on bond yields. We have looked at a range of evidence on borrowing costs for a range of credit rating levels.

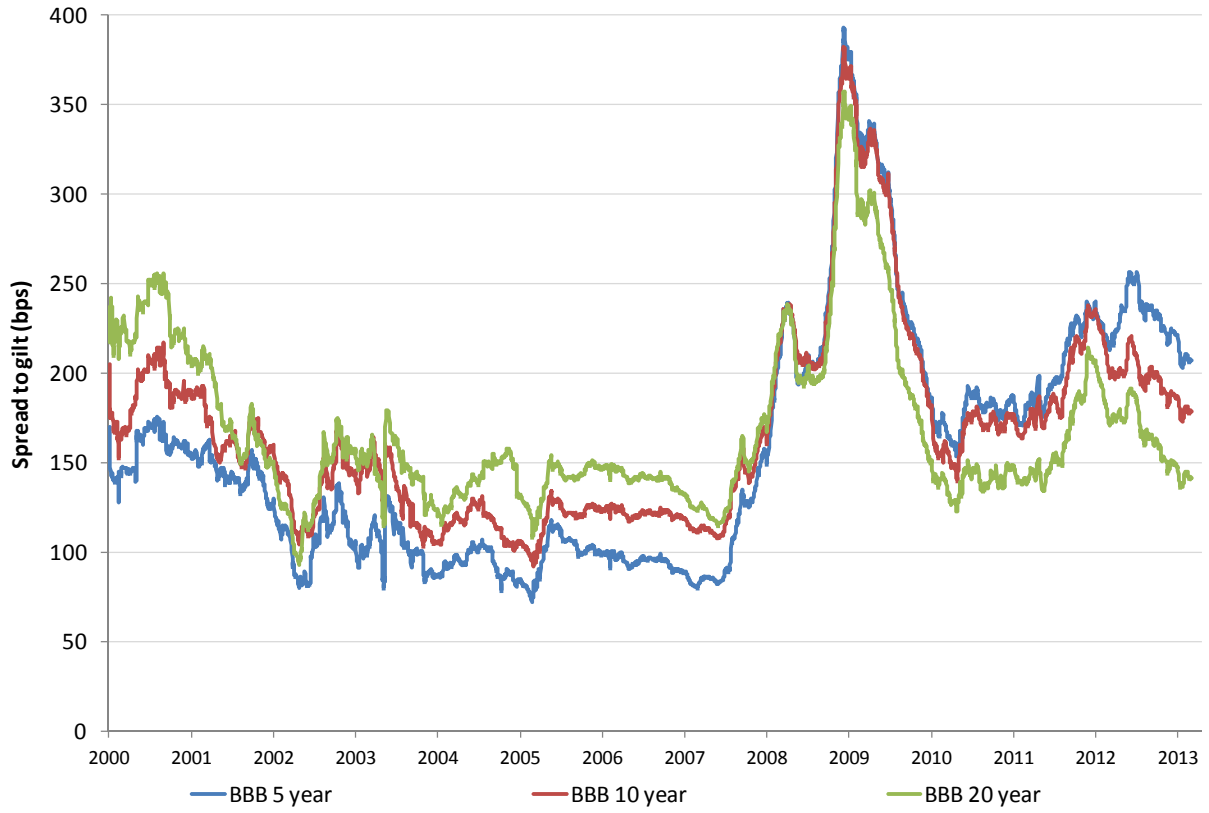
For the **standard "retailer"** scenario we adopt a similar approach, but have also considered evidence of comparators outside of the utilities sector and evidence provided to Power NI by a bank on the pricing terms it might apply to a £60m RCF/LoC facility where the notional business has a single B credit rating.

D4.2 Evidence from spreads on bonds

The debt premium is the cost above and beyond the RfR which a company has to pay when borrowing in order to reflect that it is not completely free of default risk. Hence the debt premium is influenced by the company's credit rating.

Figure D1 shows the evolution of spreads (against benchmark gilts) for sterling denominated corporate debt with a BBB rating for different debt maturities.

Figure D1: UK BBB rated credit spreads by maturity

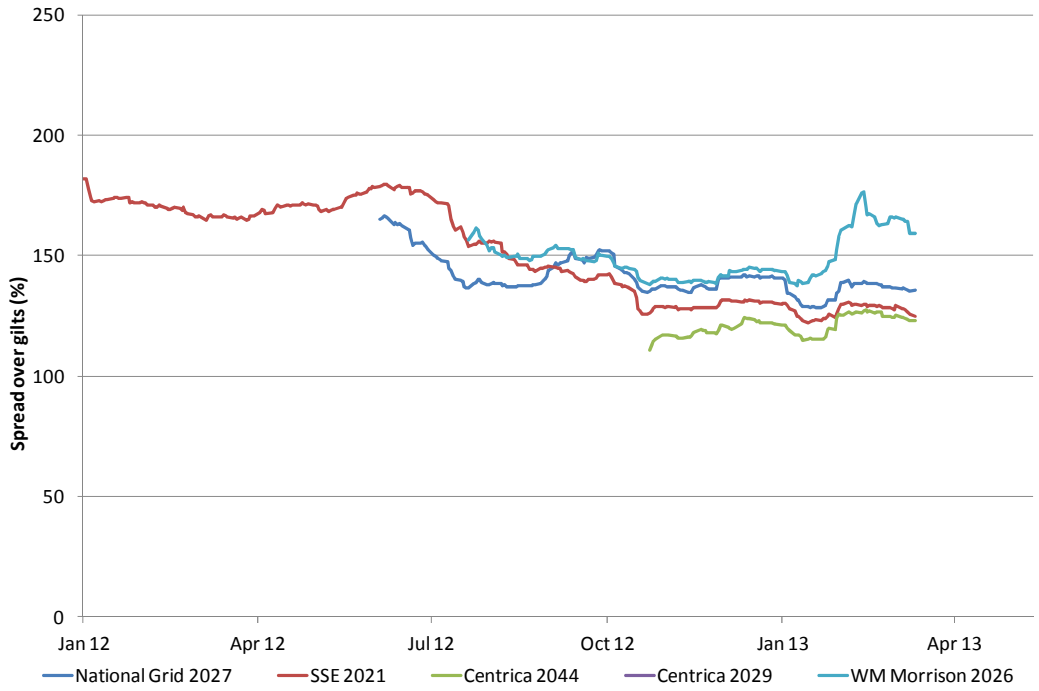


Source: Bank of England and Bloomberg

We have also considered evidence of spreads on relatively new issues by companies in the energy and other retail sectors.

Figure D2 shows spreads over gilts for recently issued bonds by utilities (including Centrica and SSE) and WM Morrisons.

Figure D2: Spreads on recent issues for retailers and energy businesses



Source: CEPA analysis of Bloomberg data

The above figures are based upon an assumption of credit rating in the range A to BBB. As you look below this investment grade, data is less comprehensive, therefore we have considered 20-25 UK bonds with a credit rating between BB and B.

The spreads to gilts are significantly wider than observed for the credit ratings assumed above and a summary is shown in Table D6.

Table D6: Average broad BB rated spreads over gilts

	BB rated		B rated	
Statistic (bps)	**At issue**	**Today**	**At issue**	**Today**
Mean	361	461	581	671
Median	387	436	627	667
Min	*97*	*253*	*103*	*468*
Max	*925*	*746*	*799*	*885*

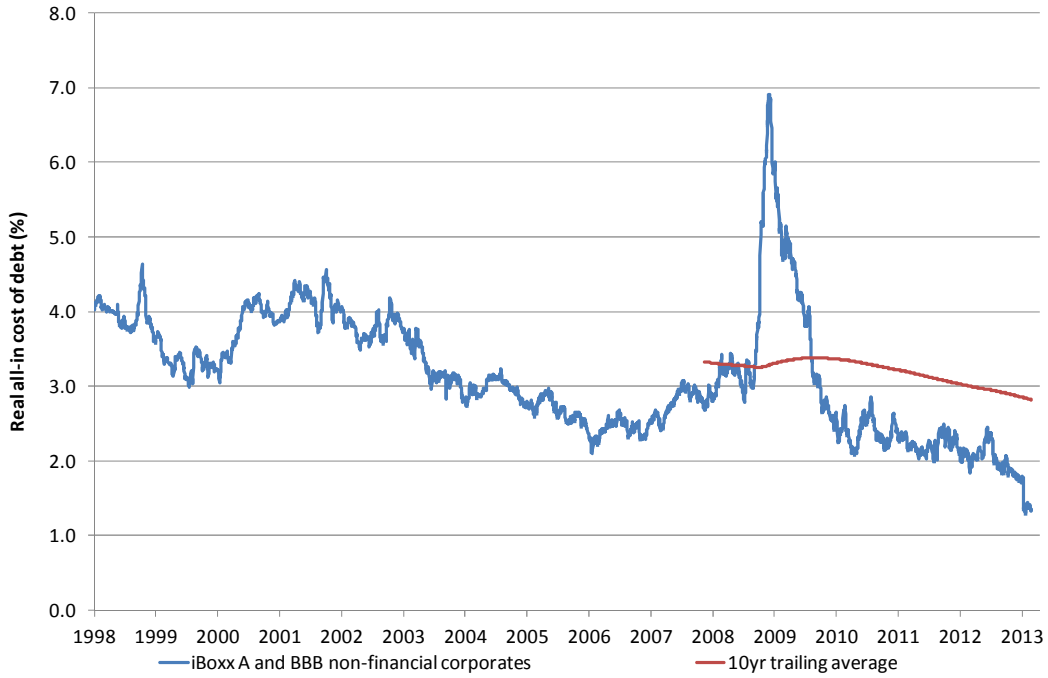
Source: Bloomberg, CEPA analysis

Note: Tenor of bonds typically 8-12 years (although some are of a longer tenor)

D4.3 Evidence of all in cost of debt

Turning to evidence of the all in cost of debt, Figure D3 shows the real 'all-in' cost of debt for non-financial A rated and BBB rated bonds in the Market iBoxx database. The chart also shows the 10-year trailing average.

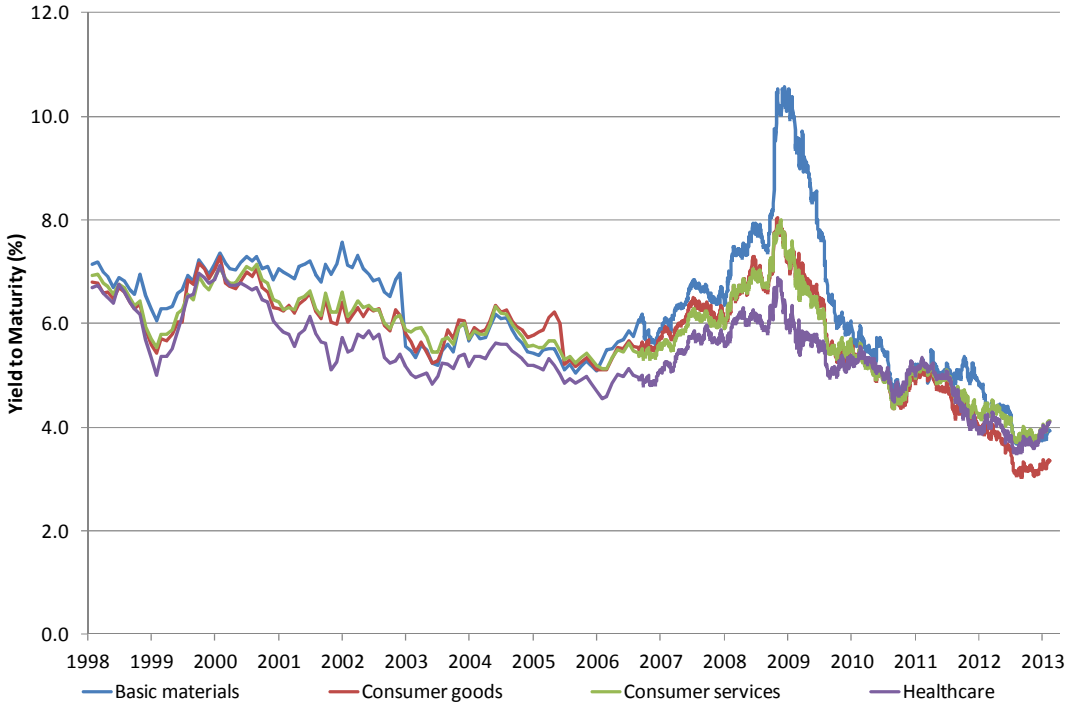
Figure D3: iBoxx non-financial A rated and BBB rated 10yr real cost of debt indices



Source: Markit iBoxx

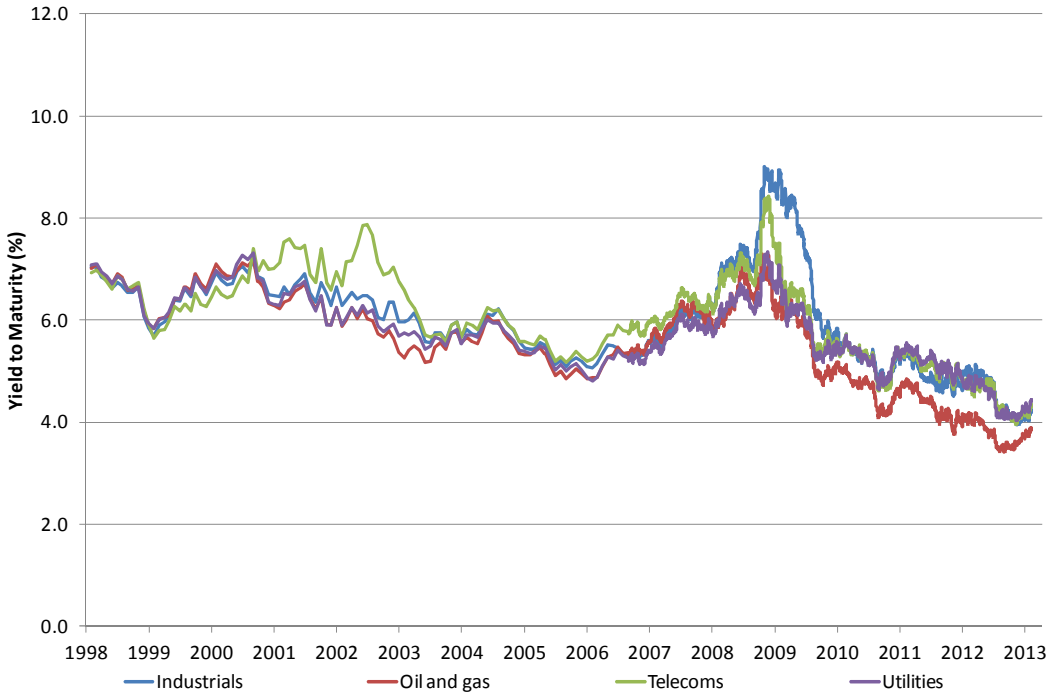
Figures D4 and D5 show evidence of nominal yields for various sectoral indices as reported within the Market iBoxx database.

Figure D4: iBoxx sectoral indices



Source: Markit iBoxx

Figure D5: iBoxx sectoral indices



Source: Markit iBoxx

D4.3 Evidence of cost of RCF/LoC facility

As part of its views on capital structure, a bank also gave an indication of the pricing that might apply to a single B rated entity seeking the £60m RCF facility discussed above.

As set out in the main report, to provide this facility to a single B rated standalone entity, the bank suggests they: "*would expect margin pricing in the region of 5.00%, with a typical commitment fee of 40% of the applicable margin and c. 50bp reduction for Letter of Credit drawings.*"[66]

This was based on pricing of comparable facilities as summarised in Table D7 below.

Table D7: Recent financings for single B names and/or debt instruments

Date	Country	Industry	Currency	Amount (m)	Tenor (yrs)	Margin
Feb 13	UK	Consumer	GBP	40	6	L+500
			GBP	20	7	L+575
			EUR	60	7	E+525
			GBP	20	6	L+500
			GBP	10	6	L+500
Jan 13	Europe	Consumer	EUR	65	6	E+475

[66] Note this debt margin is quoted relative to LIBOR rather than the risk-free rate.

			EUR	65	6	E+525
			EUR	15	6	E+475
Jan 13	France	Services	EUR	86	6	E+425
			EUR	100	7	E+500
			EUR	35	6	E+425
			EUR	15	6	E+425
Dec 12	Italy	Consumer	EUR	55	6	E+600
			EUR	55	7	E+600
			EUR	20	6	E+600
Oct 12	UK	Services	GBP	90	5	L+400
			GBP	130	6	L+450
			GBP	125	6	L+425
			EUR	60	5	E+400
Sep 12	UK	Healthcare	GBP	60	6	L+500
			GBP	155	7	L+600
Aug 12	Germany	TMT	EUR	100	6	E+500
			EUR	150	7	E+550
			EUR	15	6	E+500
Aug 12	Germany	Healthcare	EUR	15	6	E+500
			GBP	25	6	L+500
			EUR	145	7	E+550
			EUR	25	6	E+525
			EUR	25	6	E+500
			EUR	68	7.5	11.50%

Source: Power NI banking advisor

Note: E+ refers to the spread over 6 month Euribor. L+ refers to the spread over 6 month Libor.

D4.4 Small company premium

There is regulatory precedent of applying a small company premium within the allowed cost of debt to recognise the higher cost of capital for a smaller companies, such as market operators, retail business and small water companies. Smaller companies only have limited access to the bond market and subsequently have a much greater reliance on more expensive bank debt.

For example, Ofwat has used small company premiums on the cost of capital in their price determinations for water only companies. These premiums relate both to the cost of equity and cost of debt. In their PR04 Final determination they set out that the premium was skewed more towards

equity than debt. The overall rationale behind the small company premium was for financeability reasons and due to the view that these companies faced a restricted access to financial markets. The premiums were applied to these companies based upon four different bands. These bands were based on the opening RCV values in the regulatory period.

The CC also discussed the merits around a small company premium for the Bristol Water determination. On the cost of equity, their judgement was that the asset beta captured the higher systematic risk faced by a small company and they did not allow an explicit small company equity premium (Bristol Water had asked for 0.7%). However, for the cost debt, the CC provided an uplift of 30bps to cater for issue fees and cash-costs.

We have not sought to estimate a small company premium explicitly at this stage of the review process. However, this may be something to consider within a final derived range and point estimate for the determination.

We note a small company premium may already be accommodated through adopting an assumption that the credit rating of the asset light retail business would be in the range BB to B rather than at an investment grade credit rating (as is the case with our standard "retailer" scenario).

D4.5 Conclusions on the cost of debt

Given the evidence above, Table D8 brings together our initial view of the range for the cost of debt likely to be faced by the notional price regulated retail business in NI for both the **integrated "utility"** and **standard "retailer"** scenarios.

Table D8: Proposed range for the cost of debt (nominal)

Element	Low	High
Nominal risk free rate [1]	5.25%	5.25%
Debt premium (utility)	1.50%	2.50%
Debt premium (retailer) ^	3.50%	6.00%
Nominal cost of debt (utility)	**6.75%**	**7.75%**
Nominal cost of debt (retailer)	**8.75%**	**11.25%**

Source: CEPA

1 Assumption adopted to be consistent with NI regulatory precedent / Approach consultation

^ Assumes credit rating of B to BB for a standard retailer

For the **integrated "utility"**, we assume a range for the debt premium broadly implied from observed spreads on utility bonds and indices for A and BBB rated bonds. We place more weight on the higher rates from this evidence given the size and scale of the asset light business.

For the **standard "retailer"** we adopt a range of 3.5% to 6.0% for the debt premium which is consistent with spreads observed for bonds rated BB to B and also the margin pricing quoted by a bank for a single B rated RCF/LoC facility.

D5. Cost of equity

D5.1 Approach

As we set out in the introduction, we have adopted a CAPM based to approach to estimate the regulated business cost of equity.

The CAPM approach is widely used as an input by UK regulators (including the UR), is endorsed by the CC[67], and is well understood. Our assessment of the cost of equity (R_e) is based on assumptions regarding the appropriate risk-free rate (R_f), equity risk premium (ERP) and equity beta, which are combined in the following formula:

$$R_e = R_f + \beta . ERP$$

An equity beta is a function of business risk and financing, derived from the correlation between a stock's return against the relevant market return, with financing risk itself dependent on the level of gearing.

To remove financing risk and make the figures comparable, the equity beta (β_e) can be de-levered by the actual gearing level (G) to obtain an asset beta (β_a), with the use of the following formula[68]:

$$\beta_e = \beta_a + \beta_a \left(\frac{G}{1-G}\right)$$

The notional gearing level, which will also affect the allowed WACC, can be used to re-lever the asset betas to comparable equity betas.

Given we propose to adopt assumptions for the RfR and ERP consistent with the UR determination for the RP5 review, the focus of our analysis is therefore the company beta. Our approach to estimating beta has involved the following:

- analysis of raw equity betas and asset betas from market data of listed companies (including utilities and retail businesses);
- review of regulatory precedence on allowed asset and equity betas in recent price control decisions; and
- initial relative risk analysis utilising the findings from our risk profile analysis in Annex B to place the regulated business asset beta compared to other regulatory determinations.

Our findings for each area are discussed in the subsections below.

Having established a range for the retail business asset beta, we re-lever this asset beta according to the gearing assumptions adopted for the **integrated "utility"** and **standard "retailer"** scenarios.

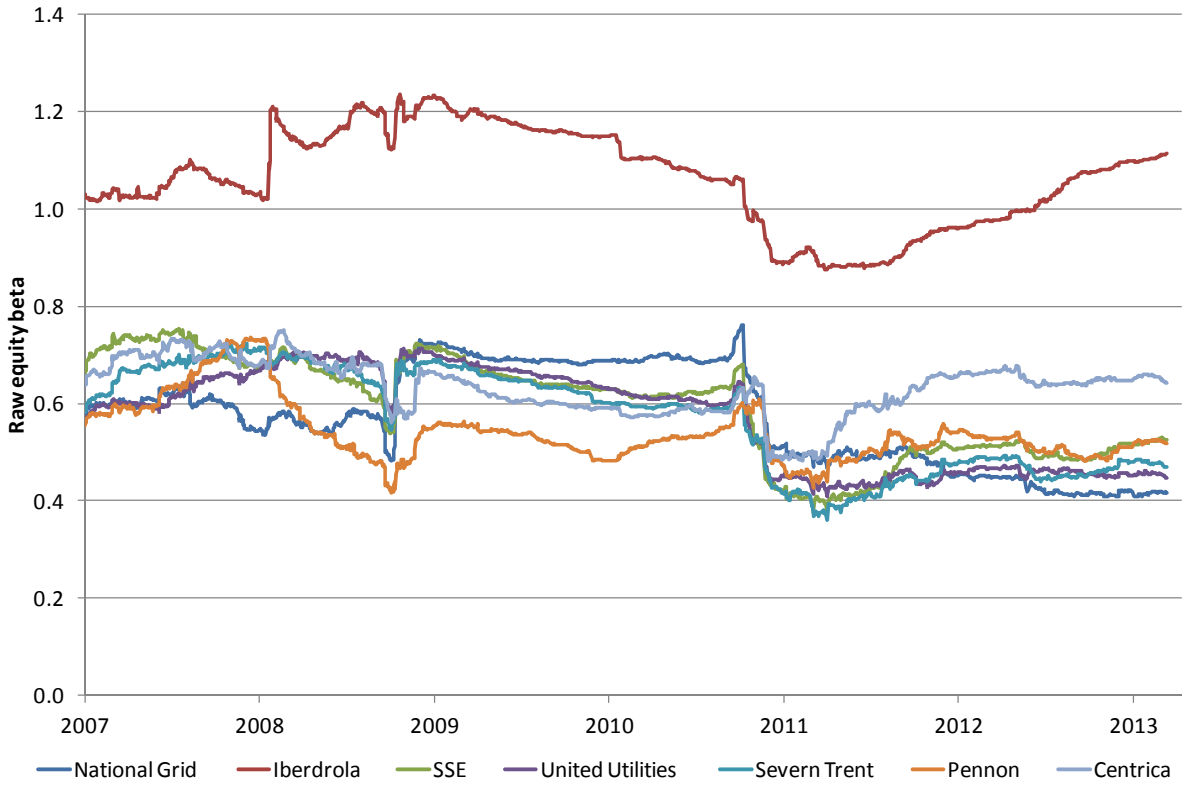
[67] Competition Commission (2010) Bristol Water Plc Price Determination, p. N4.

[68] Assumes a debt beta of zero and tax implications are not considered, as per the approach of many UK regulators and finance professionals.

C5.2 Analysis of market data

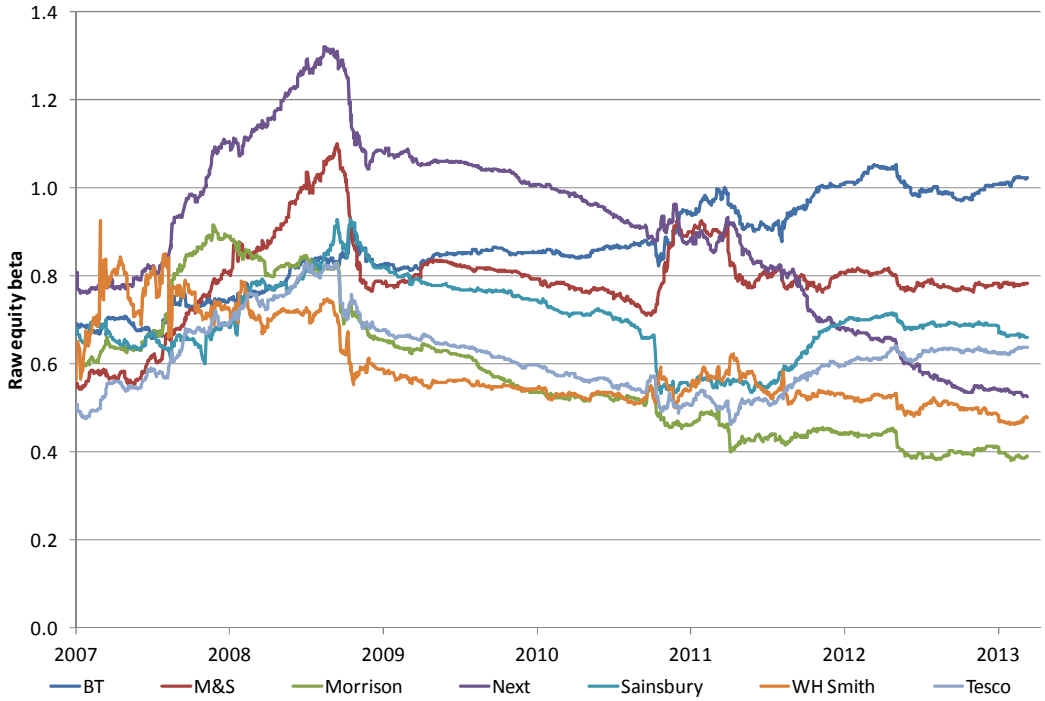
Figures D6 and D7 show raw equity betas for listed UK utility companies and retail businesses outside of the energy sector.

Figure D6: Raw equity beta for utilities



Source: Bloomberg

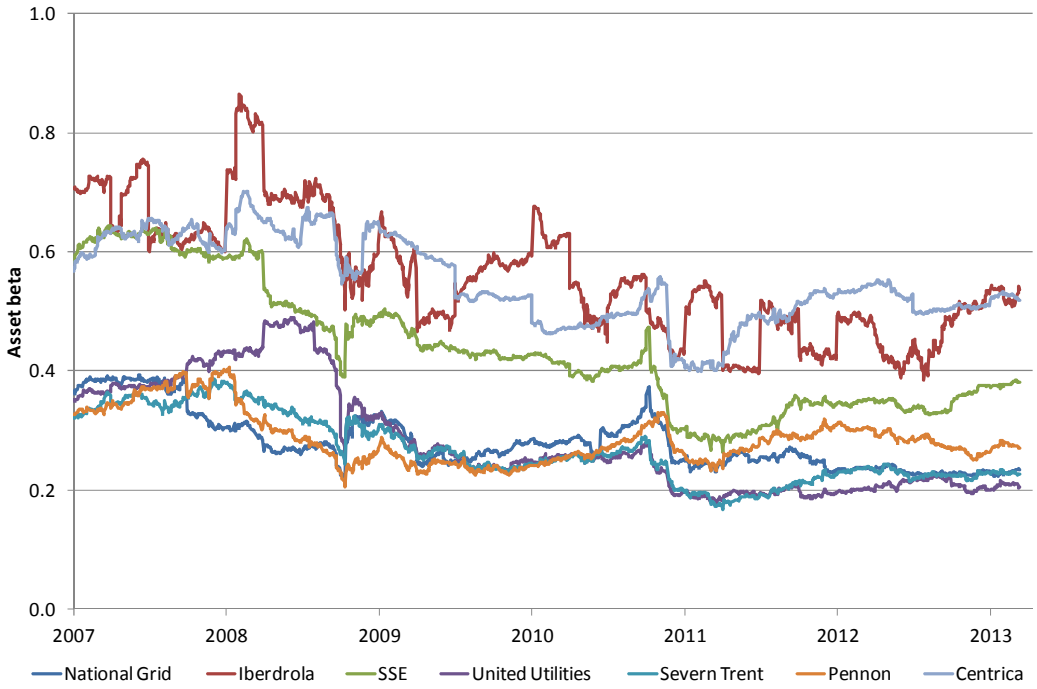
Figure D7: Raw equity beta for retail companies



Source: Bloomberg

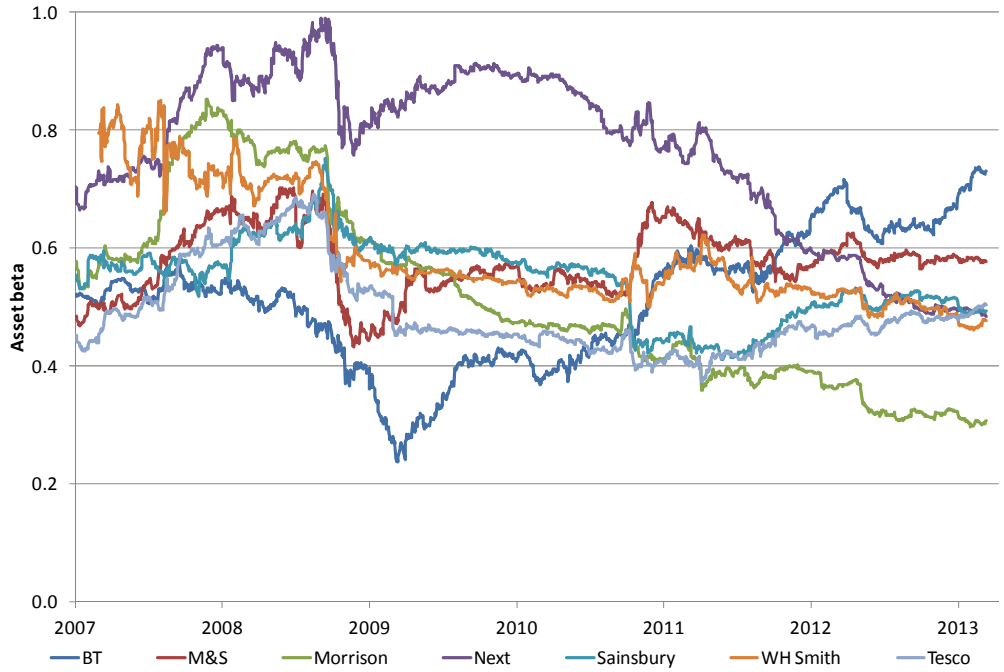
We calculate de-levered asset beta estimates for each of the comparator companies in Figures D6 and D7 above, based on the raw equity betas and annual data for each company's gearing (based on net debt and market capitalisation). This information is shown in Figures D8 and D9 below.

Figure D8: Asset beta for utilities



Source: Bloomberg

Figure D9: Asset beta for retail companies



Source: Bloomberg

A further comparator to consider within this analysis could be Drax, the electrical power generation company. Figure D10 shows the two year rolling asset beta for the company.

Figure D10: Drax asset beta

Source: Bloomberg

The asset beta is above that of the other utility companies considered and in the upper half of the range for the retail companies. Drax is slightly different to the others in that they have had zero gearing for the past two years. Table D9 shows the impact of re-levering Drax's asset beta by a notional gearing level of 60%.

Table D9: Drax asset betas

	Asset beta averages			**Equity beta at 60% notional gearing**			**Raw equity beta**		
	1yr	**2yr**	**5yr**	**1yr**	**2yr**	**5yr**	**1yr**	**2yr**	**5yr**
Drax	0.58	0.58	0.56	1.45	1.45	1.40	0.58	0.58	0.59

Source: Bloomberg

This has been compared to Grant Thornton estimates, as shown in Figure D11 below.

Figure D11: Grant Thornton asset beta estimates

	31/12/2010		**31/12/2009**	
	2 years	**5 years**	**2 years**	**5 years**
TRADITIONAL ENERGY				
Centrica	0.33	0.29	0.37	0.27
E.On	0.50	0.77	0.72	0.89
RWE	0.57	0.49	0.62	0.59
SSE	0.13	0.37	0.47	0.43
Statoil	0.68	0.74	0.84	0.48
Average	**0.44**	**0.53**	**0.60**	**0.53**
RENEWABLE ENERGY				
Nordex	1.30	1.57	1.74	2.39
Gamesa	1.30	1.61	1.71	1.93
Repower	0.09	0.32	0.37	0.44
Vestas Wind	0.92	1.77	1.94	2.09
Iberdrola Renovables	0.32	0.57	0.94	2.06
Terna Energy SA	-	-	0.89	0.38
Average	**0.65**	**0.97**	**1.27**	**1.55**
ELECTRICITY TRANSMISSION				
Terna	0.14	0.25	0.20	0.25
Red Electrica	0.40	0.44	0.33	0.45
ITC Holdings	0.61	0.57	0.59	0.58
National Grid	0.20	0.22	0.23	0.18
Average	**0.34**	**0.37**	**0.34**	**0.36**

Source: Grant Thornton

D5.3 Relative risk analysis

This section looks at how arguments based on relative risk might influence an estimate of the regulated retail business asset beta. Relative risk analysis is an instrument for framing regulatory decisions against each other. It can provide guidance as to whether decisions have placed the industry correctly, locating them against bounds suggested by other regulatory decisions.

Table D10 below summarises regulatory precedent of allowed asset betas in recent price control determinations.

Table D10: Asset Beta estimates

Sector/ Company (decision taken by)	Control Period	Asset Beta
RIIO-T1 (Ofgem) - NGET	2014-2022	0.38
RIIO-GD1 (Ofgem)	2014-2022	0.32
NIE RP5 (UR)	2013-2017	0.42
Water and Sewerage (CC)	2011-2015	0.27-0.36
Water and Sewerage (OFWAT)	2011-2015	0.40
Utilities (CC)	2011-2015	0.30-0.45
Electricity distribution (Ofgem)	2011-2015	0.40
International airports (CC)	2009-2014	0.44
Heathrow (CC/CAA)	2009-2014	0.47
Gatwick (CC/CAA)	2009-2014	0.52
Commercial real estate (CC)	2011-2015	0.54
Rest of BAA (CC/CAA)	2009-2014	0.61
Market (CC)	2011-2015	0.72
DAA (CAR)	2010-2014	0.60
Airlines (CC/CAA)	2009-2014	1.0
Network Rail (ORR)	2009-2014	0.40
BNE UK (CER)	2012	0.50
BNE Ireland (CER)	2012	0.50
BGN T&D Gas (CER)	2013-2017	0.40
SONI (NIAUR)	2010-2015	0.40
Wholesale Mobile Call Termination (Ofcom)	2011-2015	0.60
NATS (CAA)	2011-2014	0.60
Electricity transmission and distribution (NMA)	2008-2010	0.40

Source: Bristol Water Price Limits determination,14th September 2010 and CEPA analysis

A key decision to note from Table D11 is the asset beta allowed for NATs (the national air traffic control services provider). NATs is recognised as being unusual among regulated companies in being an 'asset light' business with a relatively thin profit margin. The business is also subject to some form of volume risk under its hybrid price / revenue cap regulatory regime. It therefore shares economic characteristics with Power NI's 'asset light' retail business.

Some of the factors that practitioners and regulators typically take into when seeking to assess relative risk and company asset beta include:

- cost risk;
- volume risk;
- incentives/performance risk; and
- regime credibility risk.

The size of the regulated company asset base or revenue stream relative to allowed profits or opex (sometimes referred to as operational gearing – see discussion in Annex B) is another factor that is often taken into account in this analysis.

In Table D11 we have provided a very high-level analysis of two of these factors (volume risk and operational gearing) for the different regulatory sectors and decisions that are captured in the asset beta decisions in Table D12.

Table D11: Asset beta comparison

Sample	Volume risk	Operational gearing	Asset beta
Energy / water networks	Low to moderate (revenue cap)	Low (large RAB and profit stream)	0.3-0.45
Regulated airports	Some volume exposure	Low (large RAB and profit stream)	0.4-0.61
NATs	Moderate given hybrid regime	High	0.6

Source: CEPA

As discussed in Annex B, Power NI's retail electricity business can be characterised as highly operationally geared (thin profit margin relative to revenues / bought in costs). This means that even quite small amounts of out/under performance say on opex (or other inputs to the control) can have a sizeable impact on profits.

It might also be argued that with increasing competition, the K factor does not operate as intended in which case the business although in theory protected against purchasing and volume risks (by a regulatory entitlement to recover costs), in fact has some exposure to these risks and represent a significant proportion of its underlying / 'bought-in' cost base.

This might suggest that the most suitable comparator for Power NI is NATs where an asset beta assumption of 0.6 was adopted by the CAA for the 2011-2014 price control period.

D5.4 Conclusions

Given the evidence above, Table D12 brings together our initial view of the cost of equity faced by the notional price regulated retail business in NI.

Table D12: Proposed range for the cost of equity (nominal)

Element	Low	High
Risk-free rate (nominal) [1]	5.25%	5.25%
ERP [1]	5.00%	5.00%
Asset beta	0.5	0.6
Equity beta (utility) [2]	0.63	0.86
Equity beta (retailer)	1.00	1.19
Nominal post-tax CoE (utility)	**8.38%**	**9.54%**
Nominal post-tax CoE (retailer)	**10.23%**	**11.22%**

Source: CEPA

1 Assumption adopted to be consistent with NI regulatory precedent / Approach consultation

2 Low and high range based on a 20-30% range for gearing

We show the cost of equity for both the **integrated "utility"** and **standard "retailer"** scenarios.

Each scenario adopts the same range for the asset beta (the bottom end of our range takes greater account of market evidence of utility company asset betas, while the top end reflects the beta assumption used by the CAA for NATs) but is re-levered at the relative gearing assumptions for each scenario.

ANNEX E: REGULATORY PRECEDENT

This annex reviews regulatory precedent of allowed profit margins by economic regulators when setting margin based price controls for utility companies.

First we consider the regulatory comparators that the Utility Regulator (UR) has reviewed in its 2014 Price Control review Approach consultation and analyse their relevance to Power NI's forthcoming price control determination. We then consider wider regulatory precedent of allowed margins in price controls, including international evidence from Australian energy retailers, and evidence from Ofgem's supply market indicators and retail market reviews.

E1. UR analysis

The UR has reviewed examples of regulatory precedent of price controls set by Offer, Ofgem, the Monopolies and Mergers Commission (MMC), the UR and Commission for Energy Regulation (CER) in the Republic of Ireland. UR notes that these regulators and competition agencies have historically provided for margins between 0.5% and 1.7% of a retail businesses turnover. Table E1 below summarises UR comments on each of these determinations.

Table E1: Regulatory precedent reviewed by UR

Decision	Margin allowance	Comments
Offer, 1994	1.0%	Allowance was for pre-1998 price controls for monopoly businesses with pass-through arrangements for upstream purchase costs
MMC, 1995	0.5%	This was the MMC's conclusion in a 1995 inquiry into Scottish Hydro-Electrics price control (in effect an appeal against the previous entry in this table).
Ofgem, 1998	1.5%	The allowance was for post-1998 price controls for businesses in the liberalised domestic retail market.
CER	1.3%	The Commission allowed the same margin throughout the deregulation of the Irish retail market.
UR	1.5% to 1.7%	The stated allowance has been applied to monopoly and dominant suppliers with allowed pass-through arrangements for upstream purchase costs.

Source: UR analysis

As we have discussed in the main report, we would argue that the decisions which are referenced in the UR's Approach consultation are not relevant to Power NI's regulated business looking forward particularly given the context of NI's retail and wholesale market:

- The early 1990s margin decisions made by Offer and the MCC were for regulated businesses acting effectively as a monopoly service provider.

- In referencing these decisions no account is given of the relative state or threat of competition which other regulatory precedent (see discussion below) has noted as relevant when considering required returns by retail investors.
- Historic UK determinations may also not properly account for the "risk capital" and collateral requirements that are associated with forward purchasing of energy in liberalised wholesale electricity markets, such as the SEM.
- The previous decisions made by Ofgem and the MMC in particular were taken in very different wholesale market contexts. For example, wholesale electricity price dynamics have changed significantly since the early 1990s (linked to greater volatility in international oil and gas prices) and larger collateral requirements now placed on electricity trading businesses.
- With regards the margin allowed by the CER within ESB PES's retail tariffs (1.3%) we note that the decision proposed around the time of deregulation (2010) had also set a +/-3% band around the supply entitlement where over-recoveries within the 3% band would be retained by ESB PES and any excess beyond 3% would be applied as a reduction to the following years. Although this decision was never implemented (deregulation was chosen as a better course of action), effectively this would have allowed ESB PES to have earned a profit margin of up to 4.3%.[69]

E2. Wider regulatory precedent

One of the other limitations of the UR's regulatory precedence analysis is that it also adopts a relatively selective sample of regulatory decisions of allowed profits margins in retail electricity based price controls.

This section therefore presents evidence from a wider sample of regulated margin benchmarks including evidence from Australia where a number of regional electricity suppliers continue to be subject to certain forms of price control regulation.

Table F2 at the end of the annex summarises our comparator analysis, including the supporting regulatory regime and policy context which led to the regulatory decision on profit margin. Below we draw out some of the key conclusions.

E2.1 Ofgem Retail Market Review

Ofgem Retail Market Review

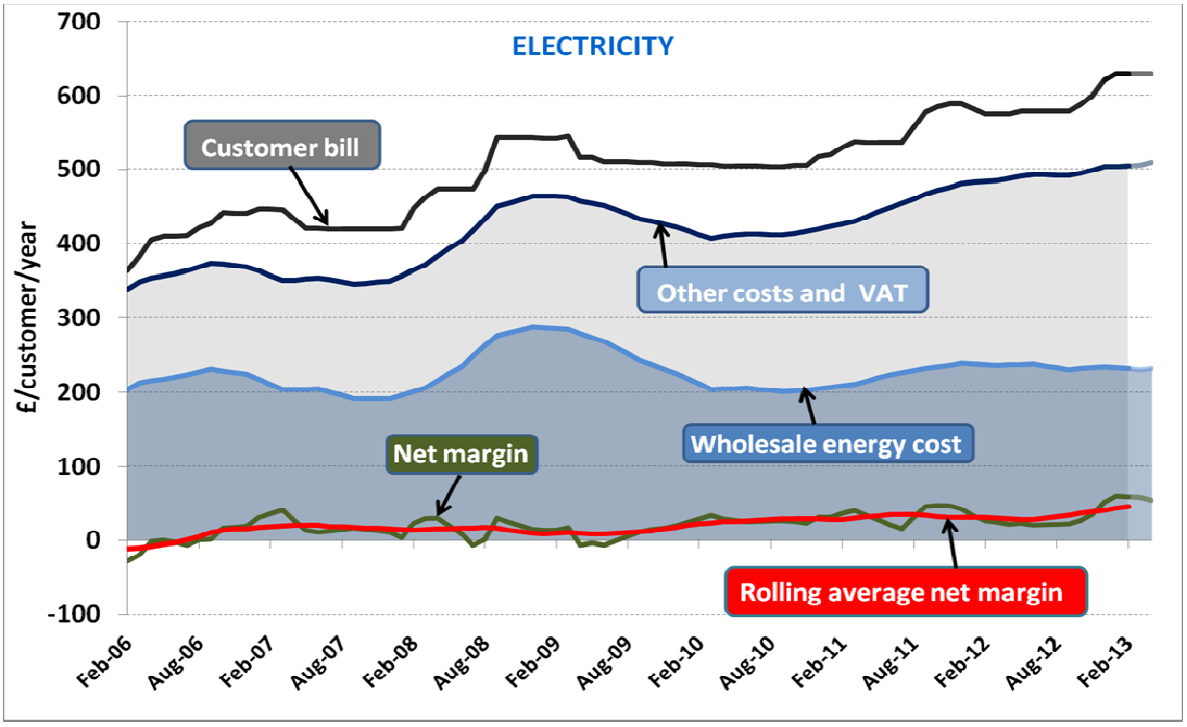
One of the reasons why historic regulatory precedent of allowed profit margins should be treated with some caution is they were set before benchmarks of profit margins from competitive retail energy markets were available to regulatory agencies.

[69] CER (2010): 'Decision on ESB PES's Price Control 2011-12', CER 10/182

As discussed in the main part of the report, Ofgem has completed relatively comprehensive analysis of profitability in the GB electricity market in recent years. Figure E1 shows the most recent results from Ofgem's supply market report which shows an increasing net margin in recent years.

As part of the Retail Market Review (RMR) and Probe, Ofgem also found that energy companies in GB's liberalised market have targeting much higher profit margins "through the business cycle" than what was allowed during the 1990s when price controls were in place. As part of this profitability analysis, also Ofgem recognised the additional capital costs that retailers are likely to face in fully competitive and liberalised retail and wholesale electricity markets relating to forward price risk/collateral requirements (see Annex F for a more detailed discussion).

Figure E1: Electricity supply market indicators



Source: Ofgem

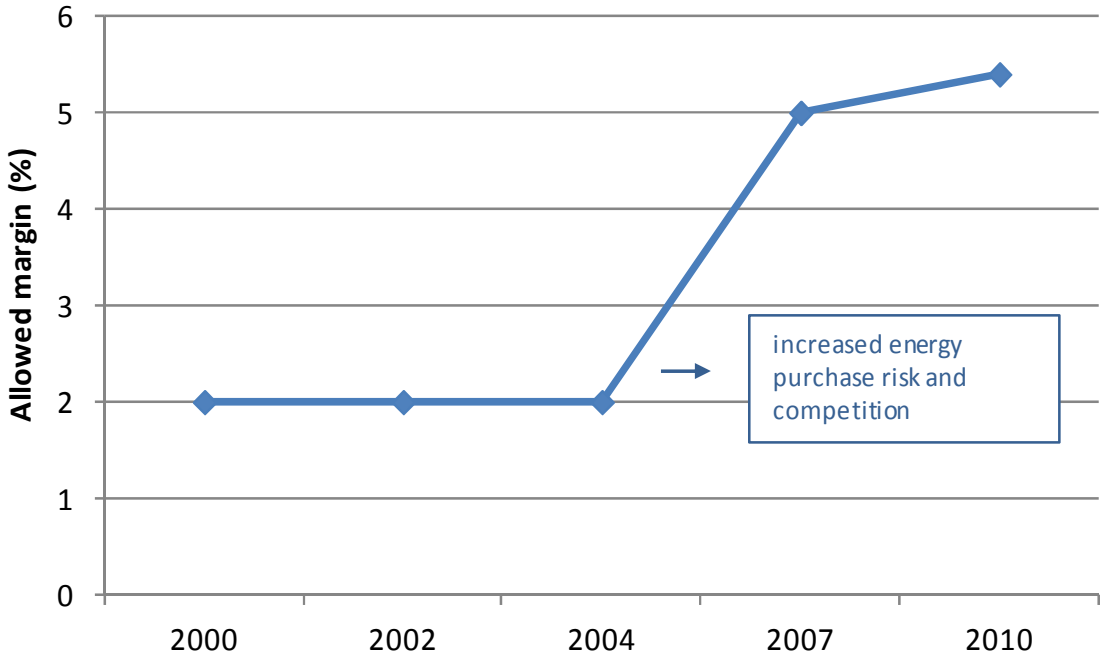
E2.2 International evidence

Our international review has focused on retail determinations in Australia since the year 2000. These determinations are relevant given that they apply to similar small regional electricity markets that have been increasingly liberalised by state regulators. Price regulated retail companies have increasingly faced competition from new entrants into the state regional markets.

One of the key issues that regulators in Australia have considered when setting an allowed profit margin for retailers is the extent to which the retail companies were protected from energy purchase risk. For example, IPART had allowed a net margin of 2% up to 2007 as retailers were protected from energy purchase risk by the Electricity Tariff Equalisation Fund (ETEF). However, since 2007 the removal of the protections provided by the ETEF has led IPART to re-evaluate the appropriate

margin for electricity retailers. The latest determination set in 2010 allowed a margin of 5.4% set on the basis of EBITDA (see Figure E2 below).

Figure E2: Electricity supply market indicators



Source: CEPA analysis of regulatory determinations

Benchmarking against a wider set of Australian jurisdictions in which retailers are not protected from energy purchase risk by some regulatory mechanism reveals that there appears to be some consensus among Australian state electricity regulators that the appropriate retail margin is between 3 per cent and 5 per cent (on an EBIT basis although the top end of the range may partly reflect allowances for depreciation in the profit margin).

The form of regulatory regime also has an impact on Australian regulators perception of relative riskiness. For example, the regulator for Tasmania allowed a margin of 3.7% (EDITDA) in a context where the retailer faces little volume risk, as the small customers market is not open to competition and the pricing formula contains a K-factor.

In contrast IPART, which allowed a margin of 5.4% (EBITDA), use a weighted average price cap (WAPC) approach for regulating prices. This approach limits the average change in each retailer's regulated prices (weighted by the relevant quantity), rather than the change in its individual regulated prices. It ensures that each retailer's regulated prices do not generate more revenue in total than IPART allowed for in the determination (given the assumed number of customers on regulated prices and their assumed electricity consumption).[70]

[70] See IPART (2012): 'Review of regulated retail prices and charges for electricity 2013 to 2016'

Table E2: Decisions on margins for comparator sectors

Decision	Date	Margin	Market open to competition?	Comments
IPART (Independent Pricing and Regulatory Tribunal) decisions for electricity retail margins in New South Wales in Australia for different years from 2000 to 2010.	2000	2.0% EBITDA	No	UK margins were the starting point for arriving at a figure. Considered different risks in regulatory environment and competitive pressures. The Electricity Tariff Equalisation Fund (ETEF) protected companies against energy purchase risk. Figure is based upon a standard retailer.
	2002	2.0% EBITDA	Yes (early)	Believed no change was required since previous determination. Risks from energy purchasing costs, customer default, bad debt and competition from electricity substitutes were viewed as parameters worth of consideration.
	2004	2.0% EBITDA	Yes (early)	No compelling reason to change from previous determination.
	2007	5.0% EBITDA	Yes	The removal of the protections provided by the ETEF meant a revaluation of the appropriate margin. The cost allowances were made for mass market new entrants (MMNE), a notional new market entrant which can achieve economies of scale. Acknowledged that competition likely to increase over the determination period. Felt that a market may have competitive outcomes, but low levels of customer churn.
	2009	5.0% EBITDA	Yes	Mass Market New Entrant retailer approach (Assess the costs of a hypothetical retailer, including the electricity purchase costs for the regulated load in each Standard Retailer's supply district, and the retail costs and retail margin for a mass market new entrant.) 3 approaches used: Bottom-up, benchmarking and expected returns.
	2010	5.4% EBITDA	Yes	Efficient Standard retailer approach; the regulator explicitly aims to reduce customer's reliance on regulated prices. Retail margin increased from 5.0% to 5.4% to take account of all the systematic risks faced by the retailers. 3 approaches used: Bottom-up, benchmarking and expected returns. Benchmarking based on data for over 300 firms across 6 sub-industries.

Decision	Date	Margin	Market open to competition?	Comments
QCA (Queensland Competition Authority), Australia decisions from 2007 to 2012.	2007-present (annually)	5.0% EBITDA	Yes (early)	Referenced retail margins accepted in other jurisdictions. Based upon a proportion of costs.
OTTER (Office of the Tasmanian Economic Regulator), Australia , decisions in 2003, 2007 and 2012.	2003	3.0% EBITDA	No	Lack of effective competition meant relatively less risk as compared to other states. Includes bad debt and working capital. Some risk in electricity substitute competition.
	2007	3.0% EBITDA	No	No compelling reason to change from previous determination, although integrated into National Electricity Market (NEM).
	2012	3.7%[71] (total sales) or 3.8% on costs EBITDA	No[72]	Benchmarking against other Australian regulators (ICRC and ACT), ActewAGL in Canberra in 2008. Benchmarking adopted again in the latest determination based on New South Wales, the Australian Capital Territory, South Australia and Queensland[73]. Return on investment analysis also used. Retailer faces little volume risk as small customers market not open to competition. The margin was raised by 0.7% compared to previous decision to compensate Aurora for the increased cost of capital arising from a higher cost of debt and the increased depreciation associated with the new CC&B system.

[71] See page 8, http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/Statement_of_Reasons-Retail_tariff_approval_1_July_2012.pdf/$file/Statement_of_Reasons-Retail_tariff_approval_1_July_2012.pdf

[72] Though customers consuming more than 50MWh (i.e. businesses etc) segment has been open to competition

[73]http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/104709_104791_Electricity_Retail_Price_Investigation_Final_Report_October_2010.pdf/$file/104709_104791_Electricity_Retail_Price_Investigation_Final_Report_October_2010.pdf

Decision	Date	Margin	Market open to competition?	Comments
ESCOSA (Essential Services Commission of South Australia) formerly called SAIIR (South Australian Independent Industry Regulator) decisions from 2002 to 2011.	2002	5.0% EBITDA	Yes (early)	Similar riskiness to Victoria, with relatively high churn rates. Market is relatively peaky, so relatively high margin is appropriate with no ETEF. Based upon a proportion of controllable costs.
	2003	5.0% EBITDA	Yes (early)	No compelling reason to change from previous determination (by SAIIR, now ESCOSA). Considered actual costs incurred by the company.
	2005	5.0% EBITDA	Yes	No compelling reason to change from previous determination. Regulatory determination was for 10% on a non-controllable cost basis, which is equivalent to 5.0% on an EBITDA basis.
	2007	5.0% EBITDA	Yes	No compelling reason to change from previous determination.
	2009	5.0% EBITDA	Yes	No compelling reason to change from previous determination
	2011	5.2%[74] EBITDA	Yes	Mainly benchmarking against regulatory decisions in other states as well as bottom-up analysis. Have recently also looked at return on investment analysis.
ICRC (Independent Competition and Regulatory Commission) decision in 2003 and 2007.	2003	3.0% EBITDA	Yes (early)	Relatively less risky than South Australia decision. Used a return on capital approach.
	2007	4.0% EBITDA	Yes	Took into account higher distribution and transmission costs.

[74] http://www.qca.org.au/files/ER-QCA-NEP1213-RegPri-FinalDet-0512.pdf

Decision	Date	Margin	Market open to competition?	Comments
ORG (Office of the Regulator General), Victoria, Australia decision in 2001.	2001	2.5-5.0% EBITDA	Yes	Starting point is the IPART decision, which was for government-owned entities that were protected by the ETEF.
Utility Regulator decisions for Power NI (previously NIEES) from 2007 to 2012	2007	1.8%	Yes (early)	Efficient wholesale costs are allowed for pass through. Figure relates to a cash amount for a forecast level of turnover. Allowed margin is based on a 67% fixed proportion and a 33% variable proportion based upon customer numbers.
	2010	1.7%		
	2011	1.7%	Yes	
	2012	1.7%		
Republic of Ireland (CER)	Various	1.3%	Yes (significant) in years before deregulation	Margin set before deregulation. Note: ESB had the capacity to earn an additional 3% under the proposed decision for 2010 but this was not implemented as deregulation was chosen as a better course of action.
Ofgem	1998	1.5%	Yes (early)	See Table E1. Allowance was for post 1998 price controls for businesses in the liberalised domestic retail market. Included a pre-specified allowance for generation costs. Ofgem noted that the main risk to PESs was that competitors would attract away customers and/or place pressure on prices, however, price restraints were applied on the assumption of the absence of such pressures.
MMC	1995	0.5%	Partial	See Table E1. This was the MMC's conclusion in a 1995 inquiry into Scottish Hydro-Electrics price control.
Offer	1994	1.0%	Partial	See Table E1. Allowance was for pre-1998 price controls for monopoly businesses with pass-through arrangements for upstream purchase costs

** Note: Figures represent the mid-point of a range.*

Source: CEPA analysis of regulatory determinations

ANNEX F: PROFIT MARGINS OF RETAIL AND ASSET LIGHT BUSINESSES

In this annex we review evidence of profitability in energy retail and other relevant sectors including supermarkets, high street retailers and telecoms.

First we consider Ofgem's analysis of profit margins in GB energy retail and its benchmarking results against other sectors as part of the 2009 Retail Market Review.

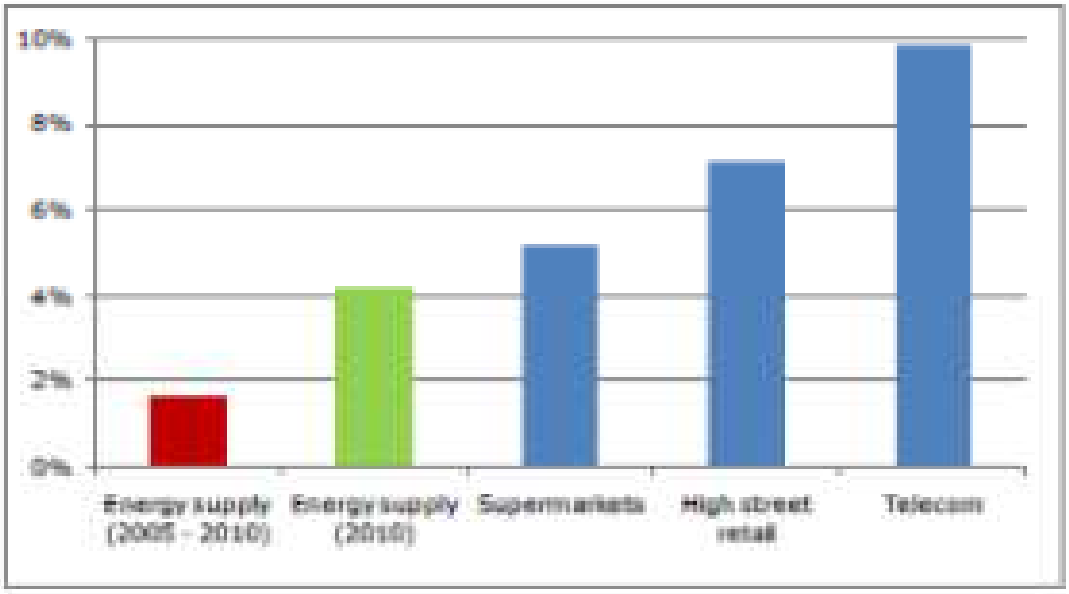
We then consider wider market evidence of profit margins in comparable sectors, focusing on the types of profitability measure that were considered important by rating agencies and that have been used to support allowed returns in other price determinations.

F1. Ofgem Probe and Retail Market Review findings

As part of the 2009 retail probe and more recently the RMR, Ofgem has benchmarked energy retail margins against a number of other sectors, focusing on supermarkets, high street retailers, and telecoms.[75] Figure F1 below shows the findings of Ofgem's analysis, illustrating average operating profit margins for energy supply over 2005 – 2010 and for 2010 against the average profit margin in the supermarkets, high street retail and telecom sectors.

In reporting this analysis, Ofgem noted that average margins in the energy sector had been lower than those observed in other retail sectors.

Figure F1: Ofgem profit margin comparisons across sectors



Source: Ofgem

[75] Ofgem (2009): 'The Retail Market Review – Findings and initial proposals – Appendix 9'

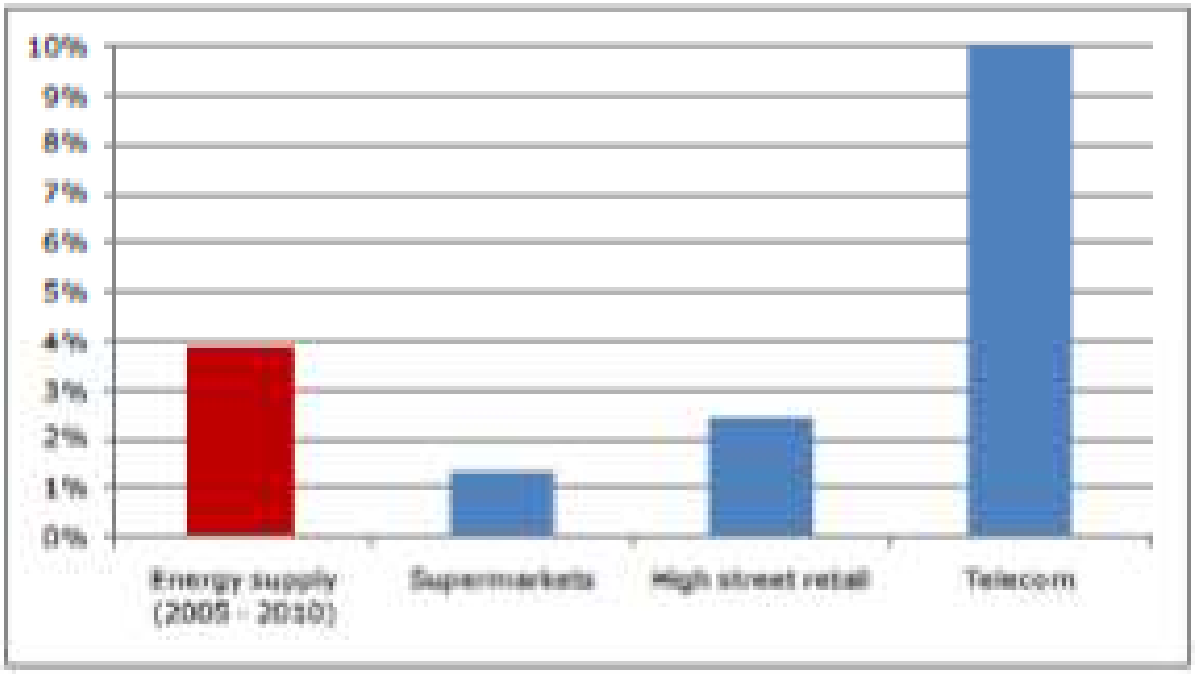
As well as compared observed profit margins, Ofgem also calculated the variability of profit margins observed in these different sectors (see Figure F2 below). Ofgem suggested that the "*higher variability of profit is likely to indicate a greater level of profit risk.*"[76]

Ofgem noted that variability in energy supply is higher than in the supermarkets and high street retail sectors though very much lower in the telecom sector. This is an important finding (one which we note is not referenced in UR's Approach consultation) given Ofgem suggest higher profit variability is linked to a greater level of profit risk.

This measure of risk is also one that the credit ratings agencies have in certain contexts given weight to (see Annex A).

Its relevance to profitability is based on the asset light nature of retail businesses, in particular, electricity where limited fixed assets are employed within the business. As described in Annex B, from an investor perspective, one of the key factors impacting on risk is that retail profit margins are thin relative to ongoing costs, which mean that investor returns can be very exposed to small changes in supply costs.

Figure F2: Ofgem profit margin variability comparison



Source: Ofgem

As part of its wider findings on supply profitability, while Ofgem found that energy retail margins averaged around 2% since from 2005 to 2010 (see Figure F1 above), during the retail probe it noted that 2% was below companies expectations over the business cycle:

[76] Ibid, p. 42

"*Based on suppliers' submissions, we estimate the average pre-tax margin on sales in energy supply between 2005 and 2007 (inclusive) was around 2 per cent. Evidence from business plans suggests that this was below companies expectations, although compensated for by higher profitability in electricity generation and gas production. Several companies cite a "through the cycle" supply margin of 5 per cent as an appropriate benchmark for the retail energy sector, based on public comments by Centrica, owners of British Gas.*"[77]

The variability of retail profit margins over the business cycle is also brought out of the supply market indicators published more regularly by Ofgem. As illustrated in Table F1 below, profit margins as a percent of turnover have been increasing since the period Ofgem undertook its initial profitability analysis.

Table F1: Electricity and duel fuel net margins

Margin as % turnover	Dec 2008	Dec 2009	Dec 2010	Dec 2011	Dec 2012
Electricity	1.8%	4.0%	5.8%	5.1%	5.7%
Duel fuel	-2.1%	3.5%	3.1%	3.0%	4.7%

Source: UR and CEPA

F3. Observed profit margins in comparable sectors and businesses

F3.1 UK evidence

Given Ofgem's analysis was completed in 2009, we have compiled more recent market evidence of observable profits margins in UK retail sectors. This has involved compiling a sample of listed retail businesses in the FTSE350, whose margins are observable because of stock exchange disclosure requirements. The data for our companies was sourced using Bloomberg. We have then separated them into six sectors. These sectors are:

- Utilities;
- Apparel;
- Telecoms;
- Food retailers;
- Speciality retailers; and
- Home retailers.

Each sector has 3-8 companies included within this, so this is more illustrative rather than definitive. Table F.2 sets out the company and sector for our sample.

[77] Ofgem (2008): 'Energy Supply Probe – Initial Findings'

Table F.2: Data set

Company	Sector
Centrica	Utility
National Grid	Utility
Pennon	Utility
SSE	Utility
Severn Trent	Utility
United Utilities	Utility
Burberry	Apparel
JD Sports	Apparel
Next	Apparel
Sports Direct	Apparel
BT	Telecom
ITV	Telecom
Vodafone	Telecom
Associated British Foods	Food retailer
Booker Group	Food retailer
Greggs	Food retailer
Marks & Spencer	Food retailer
WM Morrison	Food retailer
Ocado	Food retailer
J Sainsbury	Food retailer
Tesco	Food retailer
Dignity	Speciality retailer
Dixons	Speciality retailer
Halfords	Speciality retailer
Inchcape	Speciality retailer
WH Smith	Speciality retailer
Carpetright	Home retailer
Debenhams	Home retailer
Dunelm	Home retailer
Home Retail Group	Home retailer
Kingfisher	Home retailer

Source: CEPA analysis of Bloomberg data

Tables F3 and F4 overleaf summarise the results of the analysis.

The averages calculated are simple averages, with each company carrying equal weighting. High and low figures are included to indicate the range of figures within this grouping, as the mean may prove insufficient as a descriptive statistic.

The figures are also taken at a particular point in time, namely the end of June in each year. The averaging period has been selected to show the average over an economic cycle, as an appropriate rationale for looking at rates which are subject to annual variations.

In our view, the most appropriate profit margin for comparison with electricity retailers is the EBIT margin of listed retailers, rather than the EBITDA margin, as listed retailers are typically more capital intensive than electricity retailers incurring depreciation charges. This is also the measure applied by rating agency methodologies (see Annex A).

One of the statistics reported in Table F2 is Asset Turnover.[78] The Alberta Energy and Utilities Board used a similar measure when setting a margin based price control for ENMAX Energy Corporation (EEC). Given that the food and apparel retailers in our sample have an asset turnover greater than 2.0 (indicating that they are the most 'asset light' businesses) this suggests these sectors are likely to be the most applicable benchmarks for electricity retail.

[78] Calculated as total sales revenue divided by total assets.

Table F3: Summary statistics of profit margins for UK retail sectors (2006-2012)

Element	Profit margin (%) [1]			EBITDA to Net Sales (%)			EBIT to Net Sales (%)			Asset turnover [2]		
	Mean	High	Low	Mean	High	Low	Mean	High	Low	Mean	High	Low
All firms	4.9%	27.1%	-26.0%	17.5%	49.1%	1.4%	12.0%	34.6%	-4.5%	1.47	4.87	0.19
Utilities	11.7%	27.1%	0.1%	31.7%	49.1%	7.6%	21.1%	34.6%	6.0%	0.61	1.40	0.19
Apparel retailers	7.5%	12.2%	3.1%	17.6%	23.8%	10.5%	14.5%	19.7%	6.9%	2.01	3.10	1.15
Telecoms	-8.8%	4.5%	-26.0%	27.4%	36.1%	19.0%	14.6%	18.1%	10.3%	0.52	0.77	0.28
Food retailers	3.0%	6.8%	-8.0%	7.5%	13.7%	1.4%	4.5%	9.6%	-4.5%	2.15	4.87	1.06
Speciality retailers	5.7%	14.1%	-1.9%	14.2%	35.2%	4.0%	11.7%	30.4%	2.4%	1.72	2.60	0.52
Home retail	6.0%	10.2%	3.1%	12.3%	17.6%	8.0%	9.4%	15.1%	5.5%	1.45	2.21	0.98

Source: CEPA analysis of Bloomberg data

Note 1: Profit margin = Income / sales ;

Note 2: EBIT margin = Sales/ Total assets (on average)

Table F4: Time-series of EBIT margins (mean average)

Element	2012	2011	2010	2009	2008	2007	2006	1997-2006 average
All firms	11.7%	12.1%	13.0%	9.5%	11.1%	12.9%	13.9%	12.7%
Utilities	19.2%	21.1%	25.7%	19.2%	18.7%	21.3%	22.4%	23.7%
Apparel retailers	14.0%	14.6%	14.4%	10.9%	13.0%	16.2%	18.1%	13.9%
Telecoms	16.7%	16.6%	13.8%	2.8%	15.0%	15.9%	21.5%	11.0%
Food retailers	5.7%	5.2%	5.0%	3.6%	3.1%	5.6%	3.3%	5.9%
Speciality retailers	10.0%	11.2%	12.6%	11.8%	12.4%	12.0%	12.1%	6.9%
Home retail	8.0%	8.8%	9.5%	8.1%	9.7%	9.6%	12.0%	10.7%

Source: CEPA analysis of Bloomberg data

F3.2 US evidence

Damodaran Online provides data on financial data from markets across the world. For margin data, there is annual data on over 6,000 listed US companies and other companies internationally.

This is broken down by sector and we can use this information as a cross-check against the UK evidence on profit margins as presented in the previous sections. Figure F.3 presents time-series data on EBIT/Sales margins for four comparable sectors.

Figure F.3: EBIT margin for US sectors 1999-2012

Source: Damodaran Online

There are different measures which can be used to observe margins. While our preferred method is to use the EBIT margin (this is also the most applicable measure for Power NI given an allowance for taxation under price control is provided through the profit margin), Figure F.4 presents net margins, net income divided by sales, as a point of reference to the above analysis.

Figure F.4: Net margin for US sectors 1999-2012

Source: Damodaran Online

The use of net margins gives lower figures than with the EBIT margin. There are annual variations with each approach, although excluding apparel, the margins are around 4-10% on an EBIT basis and 2-4% on a net margin basis.

F3. Regulatory precedent of relying on observed margins outside the energy sector

While Ofgem reviewed evidence of observed margins in other retail sectors, this was as part of a market review where regulatory price controls had been removed for nearly decade.

We have considered regulatory precedent of benchmarking analysis outside of the energy retail sector being applied to determine a regulatory allowed retail profit margin.

Our review shows that a number of regulatory bodies (including the MMC) have in the past considered evidence of profit margins in other retail sectors in setting price controls on the basis that margins for retail energy businesses should be broadly consistent with margins for other comparable businesses. The full analysis is provided below.

Monopolies and Mergers Commission

The MMC considered evidence of other trading companies return on turnover (ROT) as part of the British Gas (BG) 1993 review.

BG submitted evidence of ROTs for comparator retail trading companies including as Kingfisher Plc, Marks and Spencer Plc, J Sainsbury Plc, Selfridges Ltd, Albert Fisher Plc (a food wholesaler), Bestway Cash and Carry Ltd, Boropex Holdings Ltd (retailer and wholesaler of motor parts) and C Walker & Sons Ltd (steel stockholder). This method indicated ROTs of between 3 and 7 per cent.

Oftel – Isle of Man energy prices

In benchmarking returns, Oftel considered other similar vertically integrated European electricity companies[79] average return on sales and return on capital employed. Further benchmarking was conducted against a larger sample. This was based upon FTSE350 companies. To mirror characteristics of the company, there were indicators set out, of which the thirty companies closest to the MEA were selected. These indicators and the calculation used were:

- **Size** – Net sales;
- **Cost structure** – (Net revenue minus EBITDA)/ Capex;
- **Capital intensity** – Net revenue/ Fixed Assets; and
- **Risk** – Standard deviation of annual growth in the EBITDA.

Alberta 2006 Regulated Rate Tariff[80]

The Alberta Energy and Utilities Board (EUB) set a margin based price control for ENMAX Energy Corporation (EEC).

There was a difference in opinion whether the margin should be calculated on the total costs of goods sold or the total sales revenues. The former was considered an after-tax mark-up, whilst the latter was considered an after-tax margin. The Board felt that profit divided by total sales revenue was the right approach.

In selecting comparators, the turnover ratio (TOR) was used as a first screen[81]. A TOR of 5.0 was taken as indicative of the retail electricity business, given the relative lack of inventories and relatively few fixed assets. Sectors with TORs of below 2.0 and above 8.0 were excluded from the sample.

The use of the TOR left eight industries. These were:

- Grocery stores;
- Retail stores;
- Human Resources;
- Shoe stores;

[79] Jersey Electricity, Guernsey Electricity, ESB and the Manx Electricity Authority (MEA) itself.
[80] EUB (2006): 'Reasonable Return Margin – ENMAX Energy Corporation'
[81] Calculated as total sales revenue divided by total assets.

- Specialist retailers;
- Medical services;
- Retail building supply; and
- Office equipment and supplies.

In determining comparable industries, the skills and functions required within the industry were analysed and the essential service nature of energy was also considered.

Grocery stores or combined grocery and retail stores were considered the most appropriate comparator in terms of satisfying the above conditions.

IPART – New South Wales

IPART applied a benchmarking approach, amongst other methods, to determine the appropriate retail margin in its review of regulated retail tariffs and charges for electricity for the 2010-2013 period and proposes to use the same approach for the 2013 to 2016 period.

In particular, the benchmarking approach examined reported margins for comparable listed firms with the aim of establishing a range for the retail margin. This was seen as a useful methodology because it gives an indication of profit margins observed in the market. IPART applied this approach under the assumption that:

> *"the retail margin for an electricity retail business should be broadly consistent with those for other comparable retail businesses".*[82]

In identifying comparable listed firms, IPART's consultants, Strategic Finance Group (SFG), applied a broad interpretation, recognising that there was a trade off between examining data from a large number of comparable firms versus ensuring that the chosen comparators face the same risks and growth prospects as electricity retailers.

SFG analysed financial information on listed retailers on an annualised basis from 1980 to 2008. The sample included 329 firms listed in Australia, the UK and the US.[83] Results are set out in Table F.5.

[82] IPART (2010) "Review of regulated tariffs and charges for electricity 2010-2013", at p.132

[83] Note that 7% of observations were excluded. These were observations below the 1st percentile or greater than the 99th percentile. This was to ensure that conclusions were not based on extreme outcomes which may be a result of asset write downs.

Table F.5: Summary statistics for listed retailers, 1980-2008

Country/ Sector	EBITDA/ Sales (%)	EBIT/Sales (%)	Leverage (%)	Book-to-market assets (%)	Value/EBIT
All firms	9.3	6.5	19	62	12.9
Country					
Australia	9.2	6.8	19	63	12.1
UK	8.7	6.2	17	63	11.6
US	9.8	6.6	20	62	13.4
Sub-industry					
Apparel retailers	10.0	7.1	14	60	12.0
Broad-line retailers	8.0	5.7	20	67	12.2
Drug retailers	5.8	4.5	14	52	14.8
Food retailers and wholesalers	6.1	4.1	24	65	11.6
Home improvement	9.4	7.3	19	60	13.6
Specialty retailers	7.5	5.3	22	68	13.1
Average[84]	**8.1**	**5.8**	**19**	**63**	**12.6**

NB. Values reported above are the mean values. The report also included the median, low and high results.
Source: SFG (2010)[85]

SFG selected the EBIT margin as the appropriate profit margin for electricity retailers, rather than the EBITDA margin as most listed retailers are more capital-intensive than electricity retailers.

An average EBIT/Sales ratio of 6.5% was observed for the full sample with no material difference between the profitability of retailers across the three countries. Average margins were higher in the early years of the sample with an annual average of 7.9% between 1980 and 1991, falling to 6.2% between 1992 and 2008.

SFG also analysed information for 84 energy utilities in Australia, the UK and the US. The purpose of this analysis was to check whether there was something noticeably different about the margins currently being earned by retail energy businesses, compared to margins of the broader set of retailers. The results are set out in Table F.6.

[84] This average excludes specialised consumer services . Specialised consumer services include 60 firms and 532 annual observations and is markedly different from the other sub-industries.
[85] SFG Consulting (2010) "Estimation of the regulated profit margin for electricity retailers in New South Wales"

Table F.6: Profit margins of retail energy businesses

	EBITDA (%)			**EBIT (%)**		
	2009	2008	2007	2009	2008	2007
Businesses						
RRI Energy (retail energy)	-7.4	11.5	3.0	-10.0	11.2	2.9
Australian Power and Gas	-22.5	-51.1	-759.1	-13.0	-35.6	-808.8
AGL Energy (retail energy)	4.7	6.1	3.8	3.9	5.6	3.4
Babcock and Brown Power (energy markets)	14.3	19.0		8.2	13.3	
Origin Energy (retail)	8.9	10.6	9.6	7.9	9.7	8.4
Summary statistics						
	Median over three years			Median over three years		
All observations (n=20)	5.4			4.8		
Profitable Australian firms (n=14)	7.1			6.7		
NSW Regulated Segments (n=6)	6.2			5.8		

Source: SFG (2010)

In general, the listed energy utilities in the UK and US did not provide sufficient detail in segment reporting to lead to robust conclusions on the profitability of retail segments.

In addition to the Australian companies, only one US firm, RRI Energy Inc (now part of GenOn Energy), reported data which was considered to be close enough to a retail energy segment to generate a reliable observation. The results of the profit margin analysis of the retail energy businesses is set out in Table F.6.[86]

Based on its analysis, SFG concluded that profit margins of retail energy businesses were not materially different from the observed profit margins of the broader class of retailers.

[86] This only includes companies where information was reported (and therefore was not commercial-in-confidence). Information for Country Energy, Energy Australia and Integral Energy was listed as being commercial-in-confidence.