

Assessment of Potential Financing Options for Utility Networks

Discussion paper

December 2010

Introduction

Background

- 1.1 In mid 2009 the Utility Regulator began a major programme to identify synergies and price control best practice across the three major sectors we regulate.
- 1.2 One particular area that we have been considering recently concerns how regulated networks are financed. This is particularly relevant given the degree of infrastructure investment which is required in Northern Ireland over the next 10-20 years. We commissioned economic consultants First Economics (FE) to develop a paper for us that, among other things:
 - Assessed past examples of project financing and the principles applied by other regulators;
 - Outlined a range of options available for the financing of regulated networks; and
 - Assessed the pros and cons of each option.
- 1.3 Today we are publishing FE's paper as a contribution to the debate and welcome views and comments from all interested stakeholders. We plan to host a seminar on 12 January 2011 to debate the issue further.
- 1.4 We are not posing any specific questions in this discussion paper. Instead we invite stakeholders to comment on FE's thinking in general, and their proposition on a potential way forward.
- 1.5 Readers should note that the views and opinions set out in the FE paper remain those of FE. At this stage we are seeking feedback on the ideas presented by FE, and/ or any further ideas that stakeholders may have on the matter.

Responses

- 1.6 This is an open discussion paper. If you wish to express a view on the contents of the attached paper or any related matter, we would welcome your response. Responses should be received by 5pm on Friday 18 February 2011 and should be addressed to:

Leigh Smyth

Electricity Directorate
Queens House
14 Queen Street
BELFAST
BT1 6ED

Tel: 028 9031 1575

E-mail: Leigh.Smyth@uregni.gov.uk

- 1.7 Our preference would be for responses to be submitted by e-mail.

- 1.8 Individual respondents may ask for their responses in whole or in part, not to be published, or that their identity should be withheld from public disclosure. Where either of these is the case, we will ask respondents to also supply us with the redacted version of the response that can be published.
- 1.9 As a public body and non-ministerial Government department, we are bound by the Freedom of Information Act (FOIA) which came into full force and effect on 1 January 2005. According to the remit of FOIA, it is possible that certain recorded information contained in consultation responses can be put into the public domain. Hence, it is now possible that all responses made to consultations will be discoverable under FOIA – even if respondents ask the Utility Regulator to treat responses as confidential. It is therefore important that respondents note these developments and in particular, when marking responses as confidential or asking the Utility Regulator to treat responses as confidential, should specify why they consider the information in question to be confidential.

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Financing Networks

A Report Prepared for the Utility Regulator

30 November 2010

1. Introduction

This is a discussion paper from First Economics on the financing of regulated networks. It has been commissioned by the Utility Regulator in Northern Ireland as a contribution to a cross-directorate project on future industry financing arrangements. Our brief has been to assess the pros and cons of the ways in which regulated companies currently finance themselves and to consider whether changes to the regulatory regime can contribute to the lowering of financing costs in future regulatory control periods.

The paper is structured into four main parts:

- section 2 gives some context for the discussion by outlining the different roles played by today's regulated networks and explaining how they are financed;
- sections 3 and 4 put forward two broad ideas for debate and discussion –
 - the possibility that major expansion projects may be split out from existing licensed businesses so that they can be financed and delivered by third parties,
 - a more radical proposal to split a portion of regulated companies' RABs into separate companies, to be repaid by customers separately from the funding that they give for the day-to-day operation maintenance and renewal of the network; and
- section 5 concludes.

2. Context

The current model

Regulated networks in the UK currently share a very similar form of regulation and a common approach to delivering and financing their activities. The main features of this set up are that:

- a licensed company takes full responsibility for the safe and reliable supply of infrastructure – existing and new – to network users;
- the company enlists lenders and shareholders to finance these activities;
- the company earns a return on its asset base, with the rate of return sized to be enough to compensate lenders and shareholders for the risks taken by the company; and
- a regulator tests periodically for financeability to make sure that the company is capable of discharging its responsibilities.

There can be some significant variation in the roles, risk allocation and ownership in different sectors, but the above features generally still prevail. For example:

- a company may engage contractors to perform many of its activities, but ultimately the accountability to customers and to the regulator for the proper execution of these activities remains with the company itself;

- many risks are ultimately apportioned between companies and network users, but the company is required to fund the consequences of such risks until they are reflected in future prices at a later date; and
- in some cases there is no privately owned equity in a company – it may be a debt-only company or owned by government. However, regulators still tend to allow the company a return and assess its financeability as if it were owned by private shareholders.

The prevailing model is therefore very clearly that of a single corporate entity taking overall responsibility for the range of activities required on the network, including the financing of the network assets. This model is generally seen as having served customers well over the last 20-25 years. In many sectors it has been associated with reductions in service costs, high levels of investment and improved levels of network performance and customer service. But the question has been raised by some as to whether this model delivers best value for the financing of regulated network industries going forward.

In considering this question here we are particularly mindful of two contexts that are as relevant for Northern Ireland as for the rest of the UK:

- first, years of cumulative investment in network assets mean that regulated companies generally now have large balance sheets to maintain, represented both by large RABs and high levels of investors' capital. As an example of this, NIE's T&D RAB is now valued at over £1bn compared to a starting RAB in 1992 of just over £500m in today's prices; and
- second, in many sectors, high levels of infrastructure investment are projected, often associated with reducing carbon emissions or securing supply, and often entailing major schemes. NIE, for example, estimates that meeting DETI's renewable target will cost £1bn investment over the next 10-15 years.

Against this backdrop, we explore below why the current model is being questioned.

Different activities

One starting point is to look at the constituent parts of a regulated business. Some commentators have pointed out that the activities of regulated companies can be thought of as falling into three different groupings:

- operating and maintaining the network, i.e. providing customers with 'today's outputs';
- delivering major investments, to support the provision of 'tomorrow's outputs'; and
- the collection of payment due from customers for past investments.¹

This categorisation may appear quite conceptual and artificial when held up against the typical management organisation of a regulated company. As currently structured, many of the functions of companies – and perhaps of regulators too – are likely to cut across these three groupings. However, it can be argued that categorising these activities in this way distinguishes activities

¹ Note that infrastructure businesses with long-lived assets do not collect payment from customers for investments at the point when the money is spent. Rather, they expect customers to pay for that investment in instalments over the life of the built network asset.

with quite different qualities and risks, and therefore with possibly different financing requirements.

Under this approach, the general perception of the three activities might be characterised as follows:

- the ‘operating business’:
 - concerned with significant levels of ongoing annual expenditure, both operating and capital (renewals and replacement) in nature;
 - key risks are around delivering efficiencies, achieving outputs from the planned scope of activity, variability in revenues and financial incentives linked to performance;
 - financing requirement is relatively moderate. Some finance will be required for working capital and some level of equity will be needed to take the year-on-year risks;

- the ‘projects business’:
 - concerned with large programmes of capital expenditure, often lumpy in their timing;
 - key risks are associated with planning and design, cost and schedule overrun, achievability of outputs and deliverability and cost of financing;
 - financing in the course of these projects is likely to require significant capital, including significant risk-taking equity;

- the ‘capital recovery business’:
 - concerned with financing and refinancing the completed network assets, as reflected in the regulatory asset base (‘RAB’), until the capital value of historical investments has been recovered in full from customers;
 - risks are limited in nature and level and are associated with the reliance that can be placed on the regulator’s commitment to the RAB and the ability to raise finance at reasonable cost;
 - financing requires large amounts of capital, but which need not necessarily take significant risk.

The financial features of these three ‘businesses’ are summarised in the table below.

Table 2.1: A stylised view of the three ‘businesses’ of regulated networks and their features

	Cash outflows	Level of risk	Financing requirement
‘Operating business’	Ongoing expenditure on opex and capex	Medium	Low – some risk taking capital on ongoing basis
‘Projects business’	Lumpy project capex	High	Medium to high – considerable risk taking

			capital during construction
'Capital recovery business'	Capital servicing and repayment	Low	High – considerable low risk capital on ongoing basis

Why might the current model be sub-optimal?

On the basis of a stylised description such as the above, a regulated company can be portrayed as an amalgam of three quite diverse 'businesses' with quite different risk profiles. The apparent contrast between these 'businesses' has led some to consider that it is sub-optimal – from a financing perspective – for these three different activities to be grouped together within one entity.

One point of view has is that it is financially inefficient to combine the 'projects business' with the 'operating business'. The arguments made in support of this position are two-fold:

- first, it can be argued that the risks and particular challenges of raising finance for large investment schemes puts at risk the ability of the rest of the business to finance its functions. This is because the largest schemes can sometimes represent a very significant proportion of investors' capital. And with risks that are sometimes proportionately much higher than in a company's routine expenditure, these schemes can dominate the risk profile of the company that delivers them. They can also cause a shift in capital structure to a much higher level of gearing, which can cause a company to fail credit rating agencies' and regulators' financeability tests; and
- second, that bundling the delivery of large investments into the core business leads to a lack of contestability in delivering such schemes. In most unregulated sectors, both public and private, the delivery of large construction projects is procured from parties outside the commissioning organisation, and through a competitive process. This should bring with it the right expertise and management focus at a competitive price. In a regulated sector, whilst a network owner may contract out many of the individual activities within a project, if it still retains the overall control of the scheme, it precludes this level of contestability being achieved;

There is also a view that it is sub-optimal to combine the 'operating business' with the 'capital recovery business'. The arguments can be summarised as follows:

- the higher risks of the operating business 'taint' the lower-risk capital recovery business and thereby drive up its financing costs. The reliance that investors could otherwise put on receiving returns on the RAB is reduced by their apparent dependency on the company meeting its ongoing expenditure and performance targets and successfully delivering on its investments; whilst
- the requirement on the operating business to maintain a large balance sheet to finance past investments limits the range of companies eligible to take on the operation of network businesses. That is, without the need to provide long term financing of the RAB, operators could exist on something closer to a franchise basis, which could increase contestability in providing network services; and

- it can also be argued that the overall profits of the bundled business are dominated by the returns on the RAB. This may dilute any financial incentives relating specifically to the operating business or the projects business. This may be particularly important where the regulator might wish to create high-powered incentives for such activities, e.g. to build infrastructure quickly despite significant planning barriers, or to improve levels of customer service.

The corollary of the argument that the current approach is sub-optimal is that there would be benefit from the separation of activities. The different strands of argument suggest that these might be realised in a number of different ways. However, in all cases the ultimate prize would be a financial one, namely delivering a lower cost network to customers.

But is there actually evidence to show that networks are not currently financed as efficiently as they could be?

Possible evidence for sub-optimal financing

Our approach here to exploring this is to see if we can ‘explain’ the financing costs in the current structure, given what we understand about the risks of regulated companies. If we find a level of financing costs that we cannot fully explain, this would suggest there may be something sub-optimal about the current structure.

From our analysis, we would highlight two features of regulated companies’ finances as being quite difficult to rationalise.

The first is the scale of regulated companies’ equity, which is generally considered as their ‘risk-bearing capital’. A great deal has been written in recent years about the ‘flight of equity’ across the regulated sectors. It will therefore be a surprise for many to discover that the value of shareholders’ funds invested in the UK’s regulated industries has not fallen but in fact is higher now than it was when companies were privatised in the 1980s and 1990s.

Table 2.2 provides some figures on this phenomenon. The data shows, for example, that shareholders paid £9 billion in today’s prices when they bought shares in the ten England & Wales water and sewerage companies in 1990. As at 31 March 2010 the combined equity capital of those ten companies stood at £14.5 billion.

In the case of Northern Ireland Electricity, the value of the T&D business’s equity at privatisation was just over £500m in today’s prices. As at 31 March 2010 the value of shareholders’ funds invested in the company was broadly unchanged.

Table 2.2: Valuation of equity (2009/10 prices)

	England and Wales water and sewerage companies	NIE T&D business
Value of equity at flotation	£9.0 billion	£524m
RABs at 31 March 2010	£47.2 billion	£1,007m
Net debt at 31 March 2010	£32.7 billion	£491m
Implied equity value at 31 March 2010	£14.5 billion	£516m

Sources: Ofwat (2010), RD04/10; Ofwat (2010), Financial performance and expenditure of the water companies in England & Wales 2009-10; MMC (1997), Northern Ireland Electricity plc: a report on a reference under Article 15 of the Electricity (Northern Ireland) Order 1992; analysis of NIE's 2009/10 accounts.

What makes these figures even more curious is that the need for risk-bearing capital has arguably diminished since privatisation. In our analysis – summarised earlier in this section – of the risks present in companies' different activities, we found that most of the risks were around the 'operating business' and 'projects business' rather than around 'capital recovery'. Intuitively, most of the financial risk faced by regulated companies relates to their potential to under-perform their cost allowances; the more cost they face on an annual basis, the greater the risk is therefore likely to be on an absolute basis. Risks themselves are hard to quantify but by comparing the level of equity with the level of annual expenditure we obtain quite a useful, high-level metric for tracking changes in the ratio of companies' risk bearing capital to the level of risks they face.

Table 2.3 examines this relationship over time by comparing equity values to annual opex and capex incurred by the companies. The table shows that water and sewerage companies are today spending no more in real terms than they were 20 years ago and that NIE is spending much less. However, in both cases the ratio of equity capital to annual expenditure is significantly higher than it was at privatisation.

Table 2.3: Equity values compared to annual opex and capex (2009/10 prices)

	England and Wales water and sewerage companies	NIE T&D business
Value of equity, flotation (A)	£9.0 billion	£524m
Average annual opex, first control period (B)	£3.7 billion	£95m
Average annual capex, first control period (C)	£4.3 billion	£100m
A/(B + C)	1.1 times	2.7 times
Value of equity, 31 March 2010 (D)	£14.5 billion	£516m
Average annual opex, current control period (E)	£3.7 billion	£67m
Average annual capex, current control period (F)	£4.8 billion	£72m
D/(E + F)	1.7 times	3.7 times

Sources: miscellaneous Ofwat reports; Ofwat (2009), Future water and sewerage charges 2010-15: final determinations; MMC (1997), Northern Ireland Electricity plc: a report on a reference under Article 15 of the Electricity (Northern Ireland) Order 1992; NIAER (2006), Northern Ireland Electricity transmission and distribution price control 2007-2012: final proposals.

We find it hard to explain why now established companies, with proven track records in well-defined and well-understood regulatory regimes need proportionally more risk-bearing capital than they did at privatisation. We also think that the multiples in table 2.3 look quite high in their

own right – i.e. we wonder why companies with five-year regulatory cycles and a variety of risk-sharing arrangements needs to hold equity worth almost 1.7 to 3.7 times annual expenditures. It is therefore especially surprising to us that Ofwat, in common with many other regulators, uses notional balance sheets when setting price limits which, on average, assume that companies hold even more equity still. In PR09, for example, notional balance sheets showed water and sewerage companies with shareholder funds of £20 billion, a more than doubling of the equity capital invested in the companies at privatisation.

A second and related puzzle can be found in the other component of regulated companies' financing: companies' borrowings.

At the point of privatisation, most regulated companies had little or no debt. They have since gone on to accumulate billions of pounds in borrowing as a result of significant capital programmes over the last 20 years. Table 2.2 shows, for example, that water and sewerage companies collectively owed £32.7 billion at 31 March 2010, while NIE owed almost £500m.

We can see from table 2.2 that the amount borrowed has not exceeded the growth in companies' RABs. We also know from table 2.3 that the ratio of equity capital to annual expenditures has grown over time and currently stands at healthy levels. Taking these things together, the probability that a company will burn through all of its shareholder funds and find itself unable to pay its debts as they fall due has almost certainly fallen since privatisation. This ought to mean that the probability of lenders experiencing a loss on each pound of debt currently lent to regulated companies is no greater than the probability that lenders would have attached to the loss of the very first pound that they gave to regulated companies after privatisation.

This is not borne out by the empirical evidence, however. For example, when regulated companies first borrowed money from lenders they were rated very highly by credit rating agencies – typically obtaining ratings of AA or better. Nowadays, most of the companies contributing to tables 2.2 and 2.3 have ratings of A- or BBB+. This means that the ratings agencies are saying that their calculation of the expected loss on each pound of debt has gone up even as the size of the equity cushion has increased.

A typical regulated company must today pay lenders a debt premium (i.e. a margin over the risk-free rate) of around 150 basis points. This annual stream of compensation adds up to a considerable amount when it is factored into bills. A customer might therefore wonder what it is that has caused ratings agencies and lenders to have become more nervous about companies' solvency when all that has really changed since privatisation is that companies have built up a stock of historical investments that need to be repaid through the inclusion of the depreciation of RABs in regulators' periodic review calculations of allowed revenues.

Summary

All of the above is based on a stylised *economic* view of the finances of regulated companies. It clearly does not take into account a detailed analysis of the risks of companies and how they have changed since privatisation nor does it examine how ratings agencies have assessed the credit worthiness of companies. This is quite deliberate since here we are trying to step back from the blow-by-blow detail of how the financing structures and costs have developed for regulated networks. Instead we are trying to question whether the financing that is now in place is something that we can readily explain, given what we know about the risks of regulated companies, and in particular their RABs. On this basis, the two features examined above –

continuing high levels of equity and high borrowing costs – suggest there is at least circumstantial evidence that the manner in which network businesses are currently financed is not optimal.

Clarification: Regulatory rates of return and companies' financing costs

The analysis in this section is directed towards exploring whether companies' *actual* financing costs are higher than might be expected given an economic appreciation of the risks of regulated sectors. We are concerned here with whether companies might be paying their investors too high a cost for providing capital, given the apparent risks they face.

A distinct but related question can also be asked about whether regulators have set returns that are too high *given* the current financing costs actually faced by companies. Answering such a question would draw on different theoretical approaches to assessing the cost of capital and its components as well as on market evidence for the returns required by investors. This last category, in the past, has included comparisons of the trading or sale prices of companies with the value of their RABs.

We do not focus on this second question since it relates to how regulators set allowances at price reviews rather than to the focus of our paper which is how the structure of regulated sectors and regulation could reduce financing costs. The two questions are essentially separate and any value identified from answering the two questions respectively should be thought of as additive. We do, however, recognise that if actual financing costs could be reduced this should then be reflected in lower regulatory rates of return so as to benefit customers through reducing the prices they pay.

Two propositions to explore

The suspicion that regulated networks are not being financed in an optimal way causes us to think that the bundling together of the 'operating business', 'projects business' and 'capital recovery business' may represent poor value for money. Specifically, we wonder if investors' worries about large capital programmes in the future force companies to build or hold onto risk-building capital well before it is needed and if the perceived risks around opex, capex and service quality cause investors to under-value the commitment that regulators have to making customers pay companies for their historical investment.

This leads us to explore two propositions, namely that better value for money may be achieved through:

- separating out major investments from network infrastructure companies so that third parties might play a greater role in delivering and financing these; or
- separating out the ownership of the RAB so that it can be financed separately from other parts of the business.

The first of these proposals might help regulated companies to convince investors that they do not need to hold quite so much risk-bearing capital. The second proposal might make the cost of financing post-privatisation RAB additions much cheaper.

We explore each idea in turn in sections 3 and 4 below.

3. The Financing and Delivery of Major Projects by Third Parties

Opportunities for third party involvement

The first proposition to explore is that there would be a financial benefit to customers from large investment schemes being designed and delivered by parties other than the network operator. As set out in section 2 above, this proposition is based partly on the view that the size and risks of large schemes can make it difficult for regulated companies to finance their other operations and assets; and partly on the observation that if the network operator always designs and delivers such investments themselves, even if they use contractors for specific packages of work, then this precludes many of the potential benefits of competitive procurement.

In focusing from the outset on large projects, we recognise upfront that a network infrastructure company carries out a range of different capital expenditure activities, not all of which may be suitable for third-party delivery. Much of its capex programme is likely, for example, to comprise 'capital maintenance' work, that is renewal and replacement required to deliver current network outputs. It is difficult to pass the responsibility for delivering and financing this activity to other parties since it is likely to be integral to the operation of the network. 'Capital improvement', or 'enhancement' schemes are likely to range from small local projects to very large programmes of nationwide significance. These are likely to offer themselves relatively more readily for third party delivery, but only particularly large schemes would be candidates given the transactional difficulties and costs described below. There can be no 'hard and fast' threshold value, but a cut-off of around, say, £50m in value might be a reasonable approximation to bear in mind. This would suggest that schemes such as NIE's Tyrone to Cavan Interconnector could at least be considered.

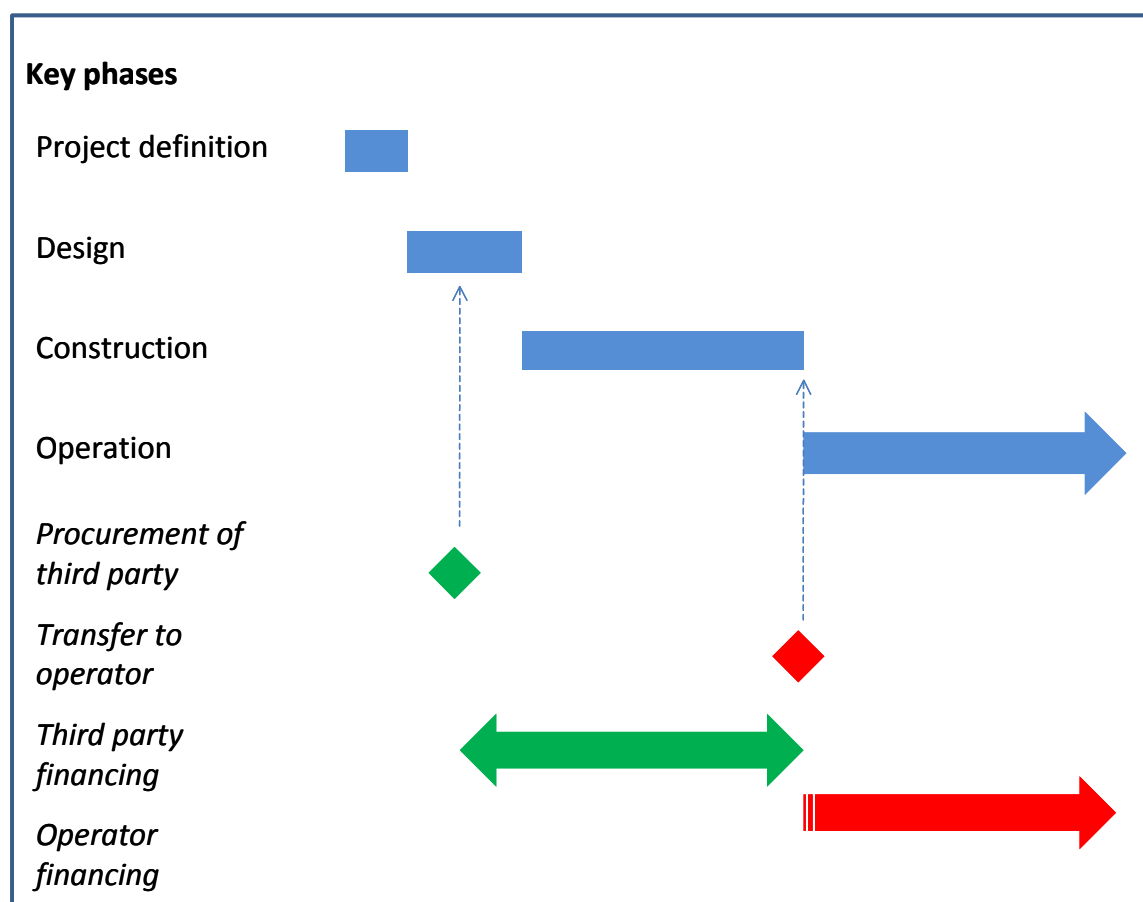
For such large capex projects how might third parties take on the delivery and financing roles? The details would depend on the sector and the nature of the scheme but, for characterisation here, we think that the involvement might be on the following lines through the key phases of the project:

- *project definition*: the network operator together with customers and industry stakeholders would identify and agree the need for the investment, its objectives and key features;
- *procurement*: a competitive procurement process would be run, from which the winning bidder would be selected as the construction company or consortium to deliver and finance the defined scheme (the 'third party'). The bid would commit the third party to delivering infrastructure outputs to key milestone dates at a target price, with specified rewards and penalties for achievement and non-achievement of delivery at milestones and a pain/gain sharing mechanism for overspend and underspend around the target cost;
- *project planning and design*: the network operator would probably need to procure the necessary planning consents – and take risk around these – since it would generally be expected to be the body vested with any permitted powers and the most appropriate applicant. It would also play a facilitating role in the initial design, including vouching for the specification and condition of existing assets which the new investment would connect to. The detailed design would be the responsibility of the third party;

- *construction*: the third party would be responsible for delivering the necessary of scope of works, in partnership with contractors where appropriate. An agreement or suite of agreements would be needed with the network operator to give the third party the necessary information and access to the network, and to protect the network operator's existing assets and their operations;
- *financing*: in the course of the works, the third party would finance the construction (and design) costs through raising debt and equity. This would likely entail equity provided by the construction company or consortia members and bank loans; and
- *completion*: on completion of the works, subject to meeting an acceptance test, the new assets would be acquired by the network operator for the pre-agreed price (adjusted for the pain/gain share) and then operated as part of the network. The sale proceeds would be used to repay the third party's capital.

These phases and key milestones are illustrated in the figure 3.1 below.

Figure 3.1: Illustrative phases for third party involvement



These phases have been illustrated on the basis of a Design Build Finance Transfer ('DBFT') model, in which the third party's involvement would cease at the point of transfer of the completed assets. A theoretical alternative would be a Design Build Finance Maintain ('DBFM') model in which the third party retained responsibilities for the ownership, financing and maintenance of the new assets in the operational phase. The possible advantages of such a variant would include:

- the allocation of operational risk to the party that is best able to manage it;
- internalising the incentives on the third party for optimising the project design to minimise whole life cost;
- introducing an additional source of new ongoing financing for the sector; and
- introducing a degree of comparability in long term maintenance and financing costs on the network.

Against this, however, such an approach would:

- stretch the scope – and potentially reduce the focus – of the third party which would now become an infrastructure company as well as a construction company, and probably a regulated one too;
- risk creating a 'patchwork' of different ownership across the network, with possible confusion about where overall responsibility for quality of service lies; and

- introduce ongoing complexities in operation at the points where new and existing parts of the network met.

Given the significant additional complexity introduced by the DBFM model, the rationale for pursuing such an approach is likely to be based on a strategic view of the benefits of introducing a new long-term infrastructure owner into a sector. These benefits might, for example, be derived from increasing the set of cost comparators available to the regulator, widening the pool of management expertise in the industry, reducing the reliance on a single infrastructure owner or even as a step to increasing the scope for future competition. This takes us into issues beyond the scope of this report; we therefore do not explore further this specific option in this note.

Instead we move on to exploring the potential benefits realisable from a DBFT structure (most of which are also relevant for the DBFM model), looking first at:

- implications for project costs; then at
- the direct consequences for financing; and finally at
- implications for risk transfer.

Benefits of third party involvement for project costs

Whilst our focus in this paper is on financing costs, we do need first briefly to recognise the impact third party involvement may have on the actual 'physical' cost of delivery, since this is likely to be one of the key merits, if not the key merit, of such a structure. A competitive procurement process – particularly one that could attract parties from a wide range of construction sectors – should be expected to generate significant downward pressure on the delivery cost of utility investments. Whilst, in the current structure, individual packages of work may be competitively procured, the tendering of the overall scheme from its design to its completion would increase the scope for overall innovation and efficiencies across the areas of work.

There may also be further knock-on benefits from bringing this competitive pressure to bear since innovations and efficiencies in major capital improvement programmes may also be applicable to smaller schemes and even capital maintenance. Further, where network operators have been found to be unresponsive or unwilling to invest in major schemes, seeing it as a risky non-core activity, the opportunity for third parties to take on this role – if instituted effectively – could go some way to bypassing this reluctance.

Exactly how large this benefit is for customers depends on how much one believes that existing licensed businesses use the asymmetry of information they enjoy vis-à-vis their regulators to obtain approval for capex at higher-than-necessary cost. Any quantification that could be made here would therefore be purely notional. However, commentators variously attribute to the privatisation of utilities reductions in operating costs of 30-50% over a ten year period. If only a portion of these savings could be made on capital expenditure as a result of introducing more competitive pressure, the benefit to customers would be very large. This can be illustrated by the observation that a 10% reduction in required capex has the same impact on the cost of a scheme to customers as a one percentage point reduction in the rate of return (that is, say, reducing the weighted average cost of capital (WACC) from 5% to 4%).

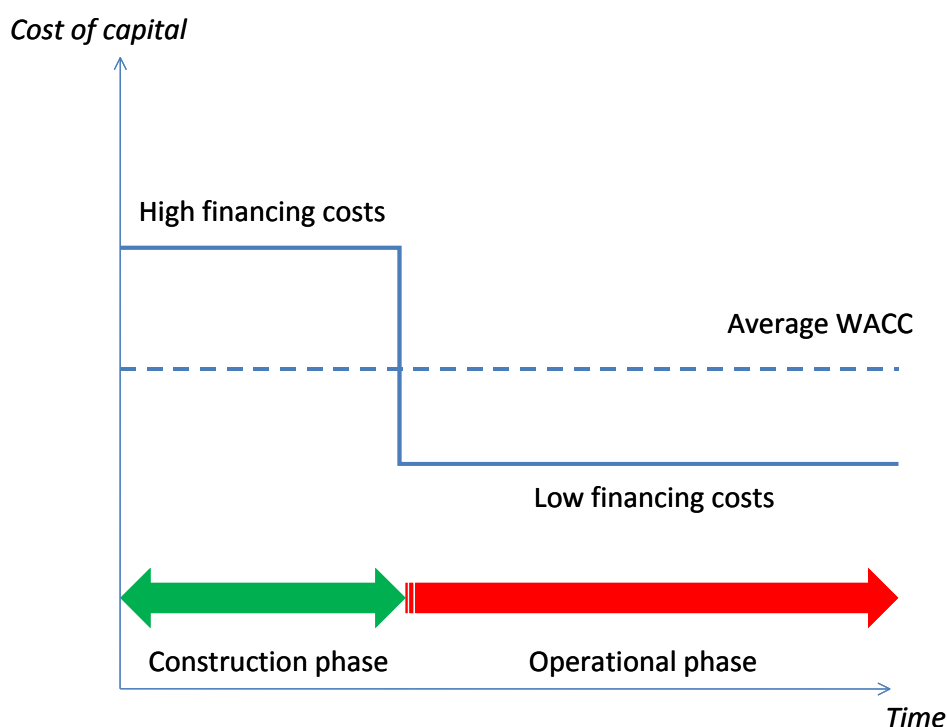
Benefits of third party involvement for financing

Our experience with stand-alone PFI/PPP projects suggests that the financing costs of the third party are likely to be greater than the headline WACC awarded by regulators to most, if not all, regulated companies. This is principally because the risks relating to the new assets in the construction phase of a project are likely to be higher than they are on average across the network's existing assets. At first impression, this might suggest that introducing third party finance will actually *increase* financing costs across the network.

However, the higher financing costs apparent in the construction phase may simply relate to an issue of timing, illustrated in figure 3.2 below. When assets are being constructed there may be significant risk associated with them, for example the risk that the assets cost more to build than allowed for, or that they do not deliver the required outputs. In this phase, the cost of capital may be relatively high. When the assets are completed, however, they entail lower risk since they will receive a return on a 'safe' RAB in the course of their life. Taking an average of the 'whole life' financing costs for the assets, including both construction and operational phases may give us a figure close to the WACC of the network.

(NB: This effect has been recognised in the UK's long-running Private Finance Initiative. Government observed that PFI companies were refinancing their businesses after the completion of the higher risk construction phase as they entered the lower risk operational phase and in doing so were managing to achieve much lower financing costs than initially faced.)

Figure 3.2: Illustrative financing costs over investment life



Therefore, the apparent higher financing costs, when compared to the WACC, may simply represent a distillation of the higher 'construction phase' financing costs from the 'whole life' financing costs of the assets. Whether this represents an overall higher cost of capital to be paid by customers over the asset life depends on whether there is a commensurate reduction in the

financing costs for the completed assets when they are in the operational phase. This will depend on whether the RAB itself can be optimally financed, with recognition of its true low risks – the subject of section 4 below.

(A further reason why an apparent increase in financing costs might actually be value for money would be if this resulted from a greater level of risk being taken by the third party than by the network operator. This is discussed below.)

The other direct consequence of a role for third parties in investment could be on the financeability of the regulated company. Major investments taken on by a regulated company tend to adversely affect their credit rating in two main ways:

- first, they are funded largely by borrowing and this increases both debt levels and interest payments, causing financial ratios such as gearing, interest cover and free cash flow to deteriorate;
- second, they increase the financial risk profile of the company which, in terms of the ratings agencies' quantitative assessment of credit worthiness, may make more onerous the threshold levels of financial ratios that they the company needs to achieve in order to maintain a given credit rating;
- third, the credit rating agencies are likely to perceive a company as qualitatively more risky, with management more widely stretched in its capacities and focus.

These combined effects can make it difficult for companies to maintain the financial profile they need to be able to raise adequate capital at an attractive price. And, since regulators' financeability duties make this a shared problem, addressing these financeability consequences of major investments in the current industry structure could lead to regulators setting higher prices for customers in order to improve companies' finances.

Passing the financing and delivery responsibilities for large projects to third parties would therefore appear to alleviate a significant strain on companies' finances and regulated sectors' financeability issues. Against this, however, are the observations that:

- the regulated company would still need to finance the acquisition of the completed assets at some stage – albeit at a point at which any associated risk should have dissipated; and
- the third party itself may have its own 'financeability constraint' that needs to be met, ultimately at customers' cost.

Taking all these things into account, it is not clear to us that we can say that the separation of large projects lowers overall financing costs and could lead to a reduction (over and above the reduction that comes from contestability) in the bills that customers pay. Whether the financeability of major investments is ameliorated by third party delivery – rather than is just passed along – seems to depend on whether such an arrangement genuinely passes risks to parties better able to manage them. We explore this next.

Benefits of third party involvement for risk transfer

We need to answer two questions in order to assess the potential benefits of third party involvement for the transfer of project risks:

- is the third party better placed than the network operator to manage the risks of investment projects; and
- can the third party take additional risks that would otherwise be passed to customers?

In answering the first question we assume here that the third party is a construction company, or consortium of such companies with expertise in delivering major investments. We would therefore expect that its experience, skills and focus placed it in a stronger position to deliver the 'non-sector-specific' aspects of a scheme (such as programme management and civil engineering, say) than a regulated company might be, whose primary focus is its ongoing operations and who might not undertake such major investments on a regular basis.

However, there may be significant linkages between the investment and the ongoing operation and capital maintenance of the existing network. Almost certainly, the network operator would be better placed to manage the risks around these interfaces. These risks should be left with the network operator, though doing so might limit the effective transfer of risk to the third party. How significant these 'residual' risks are would depend on how integrated the scheme was with the existing network. For example, the risks around the construction of a new electricity transmission interconnector might be more readily transferrable to a third party than those inherent in a programme of reducing sewer flooding in the water sector.

In terms of whether such a structure can reduce the risk borne by customers, the answer seems clearer. In many regulated sectors, the majority of capex risk is now borne by customers. For example, in the England and Wales water sector, most companies now take less than 30% of the financial loss from capex overspend, passing the rest to customers. Construction companies with experience of delivering and financing major schemes in the public and private sector are accustomed to taking much greater risk on behalf of their investors. So, to the extent that risks can be drawn away from the network operator and passed to a third party, it seems plausible that this will reduce the level of risk that is ultimately passed back to customers.

The question this leaves for the impact on both financing costs and financeability is the extent to which this redistribution of risk allocates risk better to parties that can manage it than does the current structure. If it simply gives risk to a third party that has more appetite for it – though no better ability to manage it – the financing costs and financeability may not be improved. Whether the benefits in risk transfer to third parties are real would seem therefore to be depend primarily on:

- the extent to which the risks of a major investment scheme are of a 'construction' nature and are distinct from the risks of operation and stewardship of the network; and
- where there are significant linkages between the investment project and the existing assets, how effectively these can be dealt with in the arrangements put in place between the network operator and third party.

Case Study: Evergreen 2

An illustration of the significance for third party involvement of being able to disentangle project from operational risks is given by the experience of the only case to date of a DBFT on Great Britain's regulated railway infrastructure.

In the late 1990s, there was significant interest in involving third parties in delivering major rail upgrades. For the most part, proposed structures for doing so on specific investments were rejected because of the complex interfaces that were found between such schemes and Railtrack's (Network Rail's predecessor) operation and stewardship of the existing network. The significant role that Railtrack needed to maintain in respect of the scheme generally precluded any benefits arising from real risk transfer to the third party.

However, one train operator, Chiltern Trains, was successful in agreeing with Railtrack to deliver and finance itself a major upgrade of part of the network it used. The scheme, referred to as Evergreen 2, a DBFT structure, successfully delivered its assets within budget and on time, transferring them to Railtrack on completion.

The differentiating features between this and other proposed schemes on the regulated GB railway appear to be:

- the third party was owned by a construction company, John Laing
- the investment scheme in question was relatively simple – entailing repositioning signal posts, straightening track and adding new platforms with relatively straightforward interaction with existing assets
- Chiltern Trains was the sole passenger train operator on that part of the railway network, significantly reducing operational complexities for Railtrack
- as train operator on that route, Chiltern Trains had deep knowledge of the existing assets and their condition

Why this model is not established in regulated sectors

Our analysis above suggests that there may be significant benefits from giving third parties a role in delivering and financing the largest schemes. We also highlighted the limitations, which seem particularly to arise from the difficulties in disentangling investment schemes from the operations and assets of the overall network.

These difficulties must play some large role in explaining why there is not a well developed regulatory model for introducing third parties in this way. However, it should be noted that in recent years various sector regulators have begun to lay some of the foundations for this model. These developments include:

- recent legislation² in the GB energy sector allowing the Secretary of State for Energy and Climate Change together with Ofgem to competitively tender offshore electricity transmission projects;
- recent legislation³ in the England & Wales water sector allowing the Secretary of State for the Environment and Rural Affairs together with Ofwat to require regulated companies to put large schemes out to tender; and
- an investment framework established by ORR that sets out how third parties can take on the delivery and financing of railway infrastructure investments

Progress on this issue to date may have been relatively slow for the simple reason that in most of these sectors, since privatisation, there has been the need for only a few large schemes and so the issue had not been prominent. Now, with very large capex programmes, including sizeable individual schemes, being envisaged in most infrastructure sectors there is much consideration being given to how this investment can be delivered as effectively as possible. Initiatives like the establishment of Infrastructure UK and the Green Investment Bank are underway as part of this process. Increasing the scope for third parties to play a role alongside regulated companies may well also become an important part of the solution.

4. The Creation of a RABco Separate from the Existing Licensed Business

Our second proposition extends the separation of business activities one stage further. Having questioned in section 2 whether it is optimal to bundle the return on historical investment with the ongoing operation, maintenance and renewal of networks, it is natural that we should explore whether it might be possible to split these two things up. In the remainder of this section we set out how this might be done.

History

The idea that one can separate ongoing opex and capex from the previously accrued RAB has been around for some time.

As long ago as the late 1990s, a number of regulated companies looked into the scope for splitting themselves into separate ‘opcos’ and ‘fincos’, in which one business – opco – would run the network and discharge the licensed business’s legal obligations and a separate company – finco – would raise finance for the RAB and take whatever proportion of customers’ bills is required to service, and ultimately repay, that capital. The idea was that a separation of payment streams and risk profiles would make finance cheaper, thereby allowing companies to out-perform their regulators’ cost of capital calculations.

More recently, Professor Dieter Helm has written extensively about a split cost of capital. His contention is that the return of and on the RAB has very low risk attached to it so long as a regulator commits to including the costs of historical investment in future price controls whereas ongoing opex and capex have much higher risk. In Professor Helm’s view, these different and distinct risk profiles should be reflected in a split cost of capital, in which the existing RAB is rewarded with a lower rate of return and the ongoing business activities with a higher rate of return than at present.

² Energy Act 2004 and Energy Act 2008.

³ Flood and Water Management Act 2010.

Neither of these ideas has actually been implemented – and for a very good reason. Whilst it may be conceptually interesting to think of a regulated company as combining two distinct activities, or of payments from customers as comprising two distinct streams of revenue, the reality is that the networks that we see today are constituted as one company and charge a bundled price to customers. This makes it impossible in practice to separate a company's ability to give investors a return of and on the RAB from its performance in operating, maintaining and renewing the network. In the event, for example, that a company under-performs against its regulator's expenditure allowances, income that theoretically is meant to support the return of and on the RAB will be diverted to fund the company's overspending. *In extremis* it is possible for the overspending to be so great that so much of the return of and on the RAB is diverted as to make the company insolvent, thereby exposing the contention that the RAB is 'safe' as entirely false.

Case Study: Financing Network Rail

A public example of the above came in 2002/03 when Network Rail took over Railtrack. A 2002 document by the Rail Regulator reports that Network Rail was proposing to put in place new financing arrangements in which a completely unregulated company – “finco” – would raise debt finance for the licensed business – “opco” – in exchange for a contractual entitlement to take the first slice of income from regulated track access charges before this income was made available to opco. The Regulator explained that the reordering of the payment waterfall to put the claims of lenders ahead of the needs of the operating/maintenance/renewal business was intended to bring about a significant reduction in financing costs and he indicated that he was minded to approve the proposed structure.

Despite this regulatory support, Network Rail never implemented its plans. The advice it was given by credit rating agencies, backed by Network Rail's own legal analysis, was that the contract between finco and opco would not survive in the event that opco became insolvent because the administrator of opco would not be required to honour the contract and there could be no guarantee that opco's obligations to finco would be transferred to a successor company. This meant that finco's first call over revenues was an illusion: the probability that lenders to finco would suffer a loss on their loans would still be inextricably linked to the licensed business's performance and cost control.

Network Rail decided there was little benefit in carrying on with its proposals if there was no reduction in financing costs compared to a conventional financing structure.

Based on our experiences over the last decade, we think the evidence is that a regulated company cannot currently break through to a significantly lower cost of capital by packaging and repackaging its cashflows into supposedly safe and risky components. So long as component parts are interlinked, this shuffling of the pieces does not seem radically to alter the inherent risks that the business faces and so does not deliver a step-change in the returns that investors collectively demand in exchange for bearing that risk.

Our proposition

This is not to say that the sorts of ideas that we have just outlined are completely without merit. One response to the conclusion we have just drawn is to ask what would have to be done to break the dependency that the return of and on the RAB has on the ongoing performance of the business and to assess whether the benefits of doing so outweigh the costs. This is something that First Economics has been looking at for some time and the results of our thinking are set out below.

The starting point in our deliberations has been our sense that the current cost of financing companies' post-privatisation RAB additions is very high. In section 2 we started to characterise today's regulated companies as looking like the utilities that were privatised in the 1980s and 1990s combined with a chunk of extra RAB worth hundreds of millions or perhaps even billions of pounds. Conceptually, the cost of financing the first of these components should be broadly constant over time while the incremental cost of financing this second, additional component should be very low, consistent with the 'promise' that regulator's make to factor the return of and on RAB additions into all future price control decisions. Insofar as this does not seem to be borne out by current evidence – i.e. a real cost of debt of ~3.5% or a premium over the risk-free rate of ~150 basis points for the second component seems high – we might conclude either that:

- investors are confused by or find sub-optimal the mixing up of the risks of the operations business and the capital recovery business; or
- investors genuinely see the return of and on post-privatisation investment as being exposed to greater risk than we or a regulator might expect.

In either case, there is an arguable case for splitting out post-privatisation RAB additions from today's regulated companies and financing and paying for them separately.

The model that we have in mind is illustrated graphically in figure 4.1. It envisages two classes of licensed company starting 2011:

- the network business (which we label "networkco" from this point onwards), with the portion of the existing RAB which is currently financed by equity, full ownership of the network and all legal and financial responsibilities for the ongoing operation, maintenance and renewal of the network; and
- a completely new licensed company (which we are going to call "RABco") which takes the portion of the existing RAB which is currently financed by debt and whose sole purpose is to manage, service and repay that debt through the collection of charges from customers.

Whereas networkco would be a conventional shareholder-owned company, we do not see the availability of equity capital as being a necessary feature of RABco. It could be, for example, that RABco is a company limited by guarantee or possibly a mutual trust.

Figure 4.1: Illustrative transfer of RAB from networkco to RABco



Before explaining how this structure might be used to reduce overall financing costs it is important to clarify three important points:

- first, RABco in no way owns any network assets nor does it have any say in the running of networkco's business. It is best thought of as a financial company with a very simple financial asset;
- second, we expect the transfer of a portion of the RAB from networkco to RABco to be effected through a voluntary commercial transaction in which the value of the RAB that passes between the companies is valued at 100 pence in the pound (i.e. without any premium). RABco would finance its acquisition by raising new debt and networkco could use the proceeds of the sale to reduce its borrowings, effectively bringing about a complete refinancing of the transferred RAB; and
- third, the transfer of a portion of the RAB would be accompanied by the transfer by the regulator of a portion of networkco's regulated revenues – specifically the depreciation and allowance for the cost of debt on the portion of the transferred RAB would be taken out of networkco's price control and given to RABco.

Importantly, there should not be anything in the transfer that we have just described that adversely affects the interests of existing shareholders – the intention is that the benefit to networkco from a transfer of its debts and the loss to networkco from a transfer of part of its RAB and associated revenue requirement will exactly offset each other. In particular, it can be observed that providers of equity had only a secondary claim behind lenders on the income and profits of the licensed company prior to the split and the split itself does nothing to disrupt this. The amount of equity in a company, the risk that shareholders bear, in terms of the potential for under- and out-performance to create variations in shareholder returns, and the reward for bearing that risk, in terms of the allowed cost of equity, should all therefore be thought of as remaining unchanged in this new world.

This means that shareholders and customers should – financially at least – be indifferent to the changes that we are applying to networkco. The challenge that we are setting ourselves is simply

to make the cost of financing RABco lower than would be the case if that portion of the RAB remained with networkco.

For this to be the case, we need to satisfy two tests as follows.

- Test 1: RABco must not be dependent on networkco for its income. Rather, RABco must have an entirely separate entitlement to receive revenue from customers. If this is not the case, we are back in a situation in which the risk profiles of the two businesses are neither transparent nor separable – i.e. where networkco's solvency affects RABco's solvency, which we know from the earlier discussion frustrates any attempt to lower overall financing costs.
- Test 2: RABco and its lenders must be given the maximum possible certainty that they will be able to recover from customers the return of and on the portion of the RAB that they inherit. The lower the risk around future income streams, the lower the premium over the risk-free rate they will demand in exchange for financing RABco during the period over which the RAB is to be repaid.

The first of these tests is not difficult to satisfy. In the case of, say, NIE, one can envisage an arrangement in which energy suppliers collect RABco's income on RABco's behalf. This might be backed by a commercial structure or a licence condition which obliges suppliers to pay RABco for the right to supply electricity. Set up in this way, RABco would not need to bill customers directly but could instead rely on the industry's existing billing arrangements, perhaps using arrangements such as trustee bank accounts to safeguard its receipts. Similar principles apply in other sectors.

The second test requires a great deal more thought. If the challenge is to make payment to RABco's lenders as near to risk free as possible, there needs to be a long-term commitment from the regulator, government or both to impose on customers the cost of paying the interest and principal on RABco's debt. There are various ways in which this commitment could be given.

- since RABco is to be a licensed company, a regulator can insert into its licence an entitlement to collect an annual income which exactly matches its annual interest bill plus the gradual payback of the principal. The risks that lenders bear in this scenario relate mainly to the possibility that the regulator, presumably backed by the Competition Commission on appeal, chooses at some point in the future to modify the licence and/or that government changes the law and in doing so changes the system of regulation that applies to the sector. This can be made very remote by clear statements of policy from the regulator stating how important it is that the licence condition remains intact until such time as RABco is fully repaid;
- the government could enter into a legally binding contract with RABco which requires it to underwrite the payment of both interest and principal in the event that income from customers is disrupted and RABco cannot otherwise meet its obligations. This would take away all regulatory risk and expose RABco and its lenders only to sovereign credit risk and political risk; and
- the government could write RABco's entitlement directly into primary legislation. If lenders see that they have a legal entitlement to collect a certain amount of income from electricity customers over a fixed period of time, the only risk that they need concern themselves with

is the risk that a future government will change the law without giving RABco appropriate compensation.

All three of these types of commitment have the potential to reduce financing costs, but our expectation is that the premium that lenders would demand in exchange for lending money to RABco would be successively lower under each of these three options. Based on experiences in other sectors, we think it is reasonable to expect the cost of debt to fall to no more than 50 basis points above the risk-free rate and possibly no more than 25 basis points. This offers the potential for very significant savings for customers against the starting point of a cost of debt which is 150 basis points or more above the risk-free rate and given that a reduction in the interest rate payable of 1% on £500m of debt that is invested in the RAB would give customers a saving of £5m per annum or £25m over a five-year control period (equivalent to £7 and £35 per customer respectively).

(Perhaps the best evidence for this potential saving is offered by Network Rail's financing. Network Rail enjoys a guarantee from the UK Government on all of its investors' capital (in its case this is entirely debt). This has a similar – though not identical – effect to Government guaranteeing the returns on the company's RAB. As a result of this arrangement, Network Rail's debt is scored as AAA/AA1 by the credit rating agencies and has generally paid out at an interest rate of between 20 and 50bps above the UK gilt rate for equivalent maturities.)

It is worth stressing that this is not a completely free lunch. Policymakers would be tying their hands and limiting as far as possible their ability to alter future payments from customers to RABco. Although some might instinctively balk at a loss of discretion, we do not think this can ever be regarded as a bad thing. If we were to ask today's regulators whether they expect their successors to reflect the value of RAB additions in future price control decisions, we would expect to get an unqualified 'yes' in response. All that we are proposing here is that good intentions and warm words are backed by greater legal force so that lenders can dismiss the notion that their investment might be deliberately stranded at some point in the future. Surrendering this discretion – which appears to be of little value to most regulators – would unlock very significant savings in the financing costs that need to be paid for by customers.

Having regard to these benefits and costs, our recommendation is that policymakers start to explore the third of the approaches that we have identified. This is because such an approach would be the strongest clarification of the low risk nature of RABco and therefore can be expected to be the most effective in bringing down its associated financing costs. There are a number of legal issues to work through – what precise form would customers' obligations take, how exactly would the amounts involved be written into legislation, how could the legislative changes be synchronised with the transaction between networkco and RABco, etc. – but none seem to us to be insurmountable. If there is a willingness among all parties to make RABco's income as secure and as safe as possible, we see no reason why it should not be possible to devise quite quickly a legislative scheme that enables the government to give near certainty of payment with relatively little disruption to the rest of the existing regulatory framework.

Possible extensions

The model that we have just outlined is best thought of as a starting point from which several possible extensions might flow.

The most obvious observation to make is that the transaction between networkco and RABco need not be restricted to the portion of networkco's RAB that is currently financed by debt. It is possible to conceive of situations in which a higher percentage of the RAB might move across so that networkco equity can be replaced by RABco debt. It is also possible to envisage situations in which the value of the RAB that is sold by networkco to RABco falls short of networkco's debts leaving networkco with some residual borrowing – notably in situations where the cost of refinancing particular tranches of networkco's debt before maturity is very high. In both cases, company, regulator and/or government might wish to take account of the optimality of networkco's capital structure and not leave customers in a position where networkco is either under-capitalised or over-capitalised unnecessarily. A key attribute of the transaction we are proposing is that it can easily be scaled down, and in certain cases scaled up, as needed if an individual company's circumstances demand it without adversely affecting the interests of any of the parties.

Another important extension comes from the possibility that networkco and RABco might enter into repeat transactions. Most of the UK's regulated companies are still undertaking historically high levels of investment, which implies that RABs will continue to grow for some time. Decisions about how to finance this capital expenditure prior to investment taking place should continue to be a matter for companies and the risks associated with this spending should continue to lie with investors. However, that does not preclude a refinancing of the accumulated RAB from taking place once profits and losses have crystallised within networkco. Amongst other things, this 'take-out' by RABco of completed investments would help risk capital in networkco to be recycled for the next wave of investment.

One possible model is that networkco sells to RABco any additional RAB that it has accrued at the end of each five-year regulatory period. The purpose of this sale would be identical to the original transaction that we described earlier – i.e. the objective would be to bring down the long-term cost of financing RAB additions once investment has been completed. For this to work, the regulator and/or government would need to adjust customers' obligations to RABco using the mechanism that it used to give RABco's lenders certainty at the time of the original networkco-RABco transaction. They would also need to make a back-to-back adjustment to networkco's new price control in recognition of the transfer that had taken place.

A final thought is that this transfer process could also be used by any separate 'projects business' in circumstances where a regulator was content that customers should be obliged to pay in full for investments carried out on their behalf. It is common practice anyway in the PFI/PPP market to see contractors refinance themselves once construction work is completed and the risk of over-spending against budget has passed. The refinancing by RABco of third-party investments in the utility sector could be characterised as an ultra-efficient version of this process, potentially pushing post-construction financing costs to much lower levels than would otherwise be achievable.

We put forward each of these ideas as options rather than a core part of our proposal. Even if the transaction between networkco and RABco was a genuine one-off, there should be more than enough benefit to customers to justify the effort and expense that all parties will have incurred when setting up the structure. Our further suggestions are not meant to detract from this benefit and we present them only as possible ideas to be used or discarded as policymakers consider useful.

5. Conclusion

This paper has tried to take forward the debate about the financing of regulated networks in three main respects.

First, we have tried to show that the day-to-day operation, maintenance and renewal of the network, investment in major expansion projects, and the recovery of capital for historical investment are three quite different activities. All three are currently bundled together inside one licensed business in a model which undoubtedly brings coordination benefits but which may also cause a certain amount of confusion in the minds of investors over risk. We would question, in particular, why today's regulated companies are holding proportionally more equity (when compared to expenditure levels) than their predecessors did at privatisation and why it is that lenders demand so much compensation for financing completed RAB additions until they are paid for in full by customers.

Second, we have explained how major projects could in future be undertaken by third parties. It is debatable whether this separation in itself will lower the costs of financing such investment, but it may alleviate the financeability issues faced by companies and may increase the level of risk that can be taken and managed by companies rather than passed to customers. Most importantly, we also think that separation would permit regulators to make major projects contestable and that competition has the potential to drive costs down considerably.

Third, we have put forward what we think is the first workable proposal for separating (part of) a company's RAB from the ongoing operation, maintenance and renewal of the network. We think that this develops long-standing ideas from the likes of Professor Helm into a more logical and ordered critique than has been seen to date. In particular, we would highlight the following insights as being genuinely new contributions to the debate:

- the need for a complete functional and legal separation between the return of an on historical investment and the ongoing activities of the licensed business;
- the concept that the 'tradeable RAB' should be only a portion of the existing RAB – i.e. the accumulated growth in the value of the RAB since privatisation; and
- the principle that a reduction in overall financing costs is dependent on there being a more explicit legal obligation on customers to repay the interest and principal on companies' borrowing than exists at the moment.

We recognise that many of the above ideas are not ones that regulators like NIAUR can implement on their own. We believe, in particular, that regulators and government have the ability to unlock considerable value for customers if they look together at the financing of networks and if government shows a willingness to change regulated industries' legislative frameworks where change would result in lower bills. We hope that this paper might assist this process and we would be pleased to offer further thoughts on the next steps in the analysis during the coming months.