Regulating for a net zero future

REVIEW OF THE NATIONAL INFRASTRUCTURE COMMISSION'S RECOMMENDATIONS

In October the National Infrastructure Commission (NIC) published its recommendations for a "strengthened and updated" model of economic regulation for the energy, water and telecoms sectors. The proposals are designed to support significant increases in investment. On the whole, we assess many of the recommendations to be sensible. However, the recommendation to "aim off" when setting allowed returns would be counterproductive. Two further recommendations (on the role of NIC, and the use of competition) will require careful consideration before they are implemented.

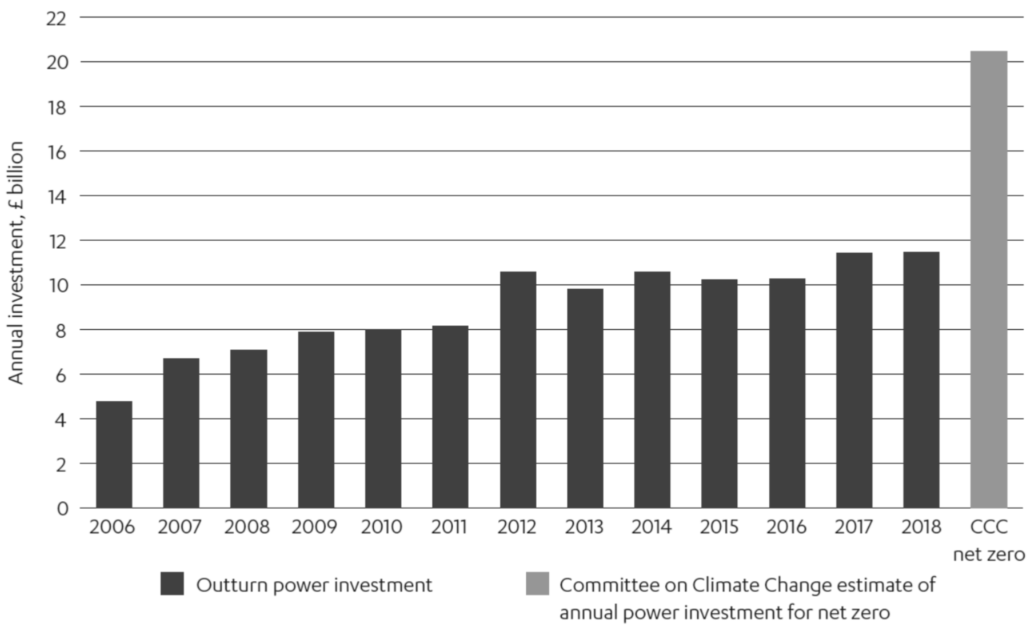
Billions more investment needed each year

The NIC's assessment of UK's investment needs over the next few decades are eye-watering.

- In the energy sector (electricity and gas) an additional £9bn of investment is required per year, almost double the current level of £11bn. This is needed to achieve the government's national carbon emissions target of net zero by 2050, through substantially increasing renewable electricity generation, electrifying transport, and decarbonising heating.
- In the water sector, £900m a year must be spent to counter more frequent floods and droughts.
- In telecoms, an extra £1.3bn a year is required to provide 5G coverage to most of the country by 2027; and a further £2.2bn a year will have to be found to install full fibre networks by 2033.

The scale of the step-change in the energy sector in particular is illustrated in the NIC's chart, reproduced below.

Figure 1: Recent and future power investment[14]



These investments are considered to be of strategic national importance. A failure to deliver them will undermine the UK's objectives of reversing stagnating productivity and demonstrating global climate leadership. The NIC is clear that regulators should not be unduly sceptical of allowing investment to go ahead.

A better regulatory framework can galvanise investment

The NIC has made a number of sensible recommendations as to how regulation in these sectors can be improved to hit the investment goals it outlines. For example:

- The need for the government to set out a long-term strategic vision (part of the NIC's recommendation 1) has long been recognised. The NIC's general view appears to be that more long-termism needs to be built into the regulatory approach. Similar reasoning lay behind Ofgem's 2010 decision to extend price controls in the energy sector from five to eight years, a decision which has now been reversed. It is clear that the long-term nature of the objectives of the required investments, coupled with the degree of uncertainty surrounding the path to net zero, poses a significant challenge to regulators. In this context, it is likely that regulators will need the legitimacy to sign off on large, transformational programmes without the old certainty that this investment is "right". A long-term strategy from government would contribute to providing this legitimacy. As the NIC notes, this will help address co-ordination challenges; set national standards; promote the interests of the general public; and overcome excessive caution.
- It is clearly right that the strategic priorities of devolved and local authorities are taken into account (recommendation 2). The quantity and quality of stakeholder engagement has significantly expanded in recent price reviews in energy and water, which should support this objective.
- Coherence across regulatory duties (recommendation 3) should also prove valuable. In large part the existing regulatory duties are likely to support the objectives identified by NIC – namely the need to promote resilience; to be consistent with achieving legislated emissions targets; and to collaborate with other regulators where relevant. But it is sensible to ensure a comprehensive and consistent approach, as the NIC suggests.

The NIC has also made some more novel proposals which we believe are worth investigating further.

- It has recommended that regulators should be able to request specific guidance from government where decisions on policies with distributional consequences are being taken (part of recommendation 7). This seems a sound way to get around the growing frequency with which regulators have been drawn into making decisions which affect different groups of customers differently. Such decisions would more naturally rely on guidance from democratically elected ministers. The NIC's recommendation could have broader relevance - not only for infrastructure decisions but also for regulation of retail markets or for network charging issues.[1]
- The proposal to strengthen the role of the UK Regulators Network (UKRN) - including installing an independent chair - is also potentially helpful, although the regulators themselves should explain and endorse the additional benefit this will be expected to bring before any costs are incurred. The UKRN is already active on issues that cut across sectors (such as setting the allowed rate of return) so enhanced powers would need to offer incremental benefits and, importantly, avoid creating any confusion around accountability.
- Ensuring executive remuneration is demonstrably linked to long-term performance for consumers and the public could also be sensible in principle (part of recommendation 5). However, if this idea is to be taken forward, its practical application will need to be considered carefully. There is an array of possibilities for measuring the performance of a firm, but it can be difficult to do so robustly - particularly if the performance being measured is long term. If the incentives embedded in the regulatory framework are well designed, then executive pay would naturally be linked to performance anyway since shareholders would have a keen interest in ensuring management incentives are aligned with the regulatory targets placed on the firm.

[1] The NIC's recommendation 6 – that regulators should be able to prevent companies from engaging in price discrimination that does not provide an overall benefit to consumers – is also linked to distributional issues. In our view, this recommendation is only tangentially relevant to the question of how to ensure the regulatory framework will deliver a significant increase in long-term infrastructure investment. There is substantial ongoing debate about how regulators should ensure fairness in retail pricing, not just in utility sectors but also in areas like retail banking. Frontier has published widely on this topic – see here.

"Aiming off" on allowed returns is counterproductive

In addition to its proposals on executive pay, the NIC's recommendation 5 puts forward a number of proposals in relation to the way regulators should set the baseline level of returns that infrastructure providers are allowed to earn. Regulators calculate an allowed return based on estimating the Weighted Average Cost of Capital (WACC) for the regulated activity, so that companies are able to finance their operations through a combination of debt and equity.

The NIC recommends that when setting allowed returns, regulators should take account of information asymmetries by 'aiming off'.[2] This idea has received growing attention among regulators in the UK since it was discussed in a 2018 report on how to set allowed returns, commissioned by UKRN.[3] In its May 2019 methodology decision for the next round of energy network price controls, Ofgem proposed to reduce the baseline allowed equity return on the basis of its expectation that companies will earn additional returns through outperforming their cost allowances and/or performance targets.

The NIC has cited information asymmetry as one of the reasons why regulators should seek to aim off. It says that companies may *"overestimate the costs they provide to regulators…leading to the weighted average cost of capital or allowed total expenditures being set at a higher level than appropriate".* While this is a commonly recognised problem in relation to expenditure forecasts, information asymmetry is not a satisfactory justification for aiming off on WACC. Actual debt costs (or commonly-used external benchmarks) can be observed by regulators, and the cost of equity is inherently unobservable. Companies therefore have little informational advantage over regulators in relation to the WACC.

The NIC appears to acknowledge this,[4] but points to two reasons for its view that the allowed return may have been too high in the past, namely:

- a comparison of past allowed returns for incumbent monopolies vs. required returns that have been bid by investors for infrastructure projects that were tendered competitively in an open market: and
- the fact that a number of transactions involving regulated utilities have implied a market valuation at a premium to the Regulated Asset Base (RAB).

The NIC has noted that *"none of this evidence is definitive"* and has caveated its discussion of these issues. In our view, neither observation justifies the recommendation for aiming off on WACC.

- The limited number of competitively tendered infrastructure projects each came with their own bespoke set of risks and, importantly, regulatory arrangements. Further, these greenfield projects have been financed by issuing entirely new debt at more recent historically low market rates, while incumbent utilities have a portfolio of existing long-lived debt, much of which will have been issued in the past when efficient market rates were significantly higher. Any comparison between these competitive bids and the allowed returns for incumbents operating under a standard regulatory price control must therefore be treated with caution.
- The market-to-RAB ratio, too, should not simply be taken at face value. There are a whole range of different drivers of market valuations for any given transaction, and inherent uncertainty around what the final valuation for many of these private transactions actually was. The observed premia are, at best, a weak and partial basis for policy recommendations for specific price control parameters (such as the allowed return).

Our view on these issues was been set out in more detail in the UKRN report[5] and in our report on behalf of the ENA in response to Ofgem's proposals.[6] These papers also explain that a number of

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2 The NIC makes the same recommendation in relation to expenditure allowances, but we focus on the rate of return here.

3 Phil Burns, a Director at Frontier, was one of the co-authors of this report, which identified a number of topic areas (including "aiming off") in which Frontier disagreed with the other co-authors. The other co-authors were Stephen Wright (Birkbeck, University of London); Robin Mason (University of Birmingham); and Derry Pickford (Aon Hewitt).

4 See Box 5 and page 46 – 48 of the NIC paper.

5 See, for example, Section 9 and Appendix F and J.

6 "Adjusting Baseline Returns for Anticipated Outperformance: An Assessment of Ofgem's Proposals", published in the responses to Ofgem's consultation.

critical consequences of the proposal to aim off appear not to have been considered. These include (among other things):

- aiming off is likely to erode investor confidence and increase regulatory risk, and hence to increase the cost of capital (ultimately at the expense of customers); and
- it will substantially undermine the incentive properties of the regulatory model, since any outperformance the companies achieve would be used to penalise the companies at future reviews when setting the allowed return.[7]

In other words, aiming off would prove detrimental to customer interests, and therefore would be counter-productive. In our view, it is an example of the sort of short-termism in regulatory policymaking which we understand the thrust of the NIC's recommendations is pushing against.

Of course, an important part of the context for the current round of regulatory reviews is that significant concern has been expressed about the returns companies have been able to earn (over and above the baseline level) during the current price control periods. The NIC is right to identify that customer acceptance is a necessary precondition for regulation to work well – the legitimacy of the regulatory model relies on customers observing that benefits are shared fairly and that returns are not earned unduly or excessively. Regulators are exploring a number of ways to improve public confidence – including stronger involvement of customers and stakeholders at the planning phase of a price control; tougher calibrations of cost allowances and service quality targets; requiring companies to decrease financial leverage and improve transparency in areas of executive pay, dividend, corporate tax and financing structures; and options for mechanistically limiting how much upside the companies can earn by outperforming costs.

These proposals should be evaluated on their merits – and there are pros and cons to all of them. But in our view, many of them strike more directly at the root causes of recent observed returns. In light of the detrimental effects outlined above, we consider that "aiming off" on the rate of return is likely to be a substantially worse policy than some of these other proposals. When combined with a dangerous perception that all outperformance amounts to "excess returns", this risks undermining the incentive regulation regime, which has enjoyed overwhelming success and delivered substantial investment and productivity gains in UK utility sectors since privatisation. In addressing the problems of the most recent price controls, regulators should take care not to throw the baby out with the bath water.

Distinguishing aiming off from aiming up

There is a related ongoing debate around the merits of "aiming up" when setting allowed returns. This debate arises because the cost of capital (i.e. the required rate of return) cannot be observed directly, only estimated. While there are some fairly well-established techniques to do this, uncertainty and choices exist, meaning regulators invariably estimate a WACC range.

The regulator must then choose a point estimate within the range – and in doing so faces a trade-off.

- Setting the allowed return too high means customers will be paying more than they should (and that too much investment will be incentivised).
- But setting it too low risks a failure to attract the financing that is needed to deliver investment. This would also be damaging to consumers both in the short term and, in particular, over time.

The regulator's assessment of this trade-off will, at least partly, depend on the context. If very little investment is needed, the damage caused by potential under-investment may not be significant, and a regulator might choose a point estimate that is lower within the WACC range. However, up to now, most regulators – including the CMA - have typically "aimed up" within the WACC range, acknowledging that the potential damage caused by setting allowed returns too low outweighs the potential benefits. Both the UKRN report and other academic research supports this historical practice of aiming up.

[7] In more technical terms, the proposal prioritises the pursuit of allocative efficiency – which is achieved when prices are set to match costs in the short term – at the expense of the achievement of productive and dynamic efficiency – i.e. the pursuit of the lowest long-run cost for consumers. Under Ofgem's proposed model for aiming off, one would have essentially created a regulatory regime that closely resembles cost plus regulation, a model that is known to lead to poor outcomes for consumers over time.

The NIC's recommendations have been drawn up in anticipation of the need for a very substantial increase in annual investment. In that context, the risks of setting an allowed return too low must be more significant than in the past. In our view, the NIC's recommendation to "aim off" only serves to exacerbate this risk.

The case for caution in some areas

In our view, two of the NIC's other recommendations need careful consideration before being implemented.

Ensuring clear accountability for regulatory decisions

Part of the NIC's first recommendation is that regulators should be required to have regard to the strategy contained in the NIC's National Infrastructure Assessment. The intention may be that this would form part of the proposed long-term strategic vision to be set out by the government. While the independence of the NIC is likely to be valuable, there is a risk of introducing too many cooks. In particular, should the NIC's recommendations diverge from the government's strategy (or that of the sector regulators or regulated companies) the solution is not obvious.

One of the key objectives for regulation should be to ensure that accountability, roles and responsibilities are clearly set out and delineated. This has been an important part of the success of the UK's model of infrastructure regulation to date. It may be possible to implement the NIC proposal in a way that ensures accountability is not blurred, but this will take some consideration.

As an illustration of this risk, the NIC has commented on the existing regulatory arrangements surrounding connection charges. The NIC argues that, in some circumstances, such charges can *"impose a significant cost to new developments and be very time consuming"*. The suggestion is that this could prove prohibitive. The NIC cites a number of specific development proposals (such as the Cambridge-Milton-Keynes-Oxford arc, Old Oak Common and Ebbsfleet Garden City) and argues that regulators should ensure the framework *"enables anticipatory investment where appropriate, to facilitate these new developments, where this can be shown to have an overall benefit to customers"*.

Connection charging arrangements in the UK have been debated at length and have been amended over time to reflect changing objectives and priorities. But it has always been clear that accountability for these arrangements lies with the sector regulators. There are sound arguments, drawing on economic principles, to support cost-reflective connection charging. Equally, there may be broader strategic objectives or benefits (such as housing development and environmental concerns) which could merit a departure from this approach. Given there are such trade-offs, it will be important to understand where the balance of responsibility and accountability lies for deciding on issues like charging methodology.

If the NIC aims to support certain specific new developments which may require modifications to charging arrangements, while a sector regulator judges the ones already in force are consistent with its statutory duties, who should prevail? And when the duties and objectives of other regulatory bodies are thrown into the mix – e.g. the Health and Safety Executive; the Environment Agency; the Drinking Water Inspectorate; Water Resource Management Plans (WRMP) signed off by the secretary of state; and others – the possibility for confusion and a lack of accountability is further exacerbated.

It is relevant also to consider the NIC's own governance structures. What are the NIC's incentives and responsibilities when setting out its NIA? What pressures does it face? If the NIC's priorities differ from those of the sector regulator, there is patently potential for conflict. But if the avoidance of conflict calls for duties to be aligned, there would seem to be little benefit in having separate regulatory bodies. And what happens if research into customers' willingness to pay does not support a project required under the NIA's strategic investment plan? Practical issues must also be taken into account. How frequently should the NIC re-issue its infrastructure assessment? Should this be synchronised with the timing of price reviews? If costs or technologies change rapidly, is the NIC able to shift strategic direction in a timely manner?

Balancing the benefits of competition vs. (good) regulation

Recommendation 4 states that *"the use of competition should be enhanced as the most reliable means of supporting innovation, particularly where there is rapid technological change"*. The NIC envisages that standard periodic price controls would focus on the maintenance of existing networks and marginal enhancements. Strategic improvements which meet an agreed set of criteria would be carved off, and delivered through competitive tendering processes with potentially bespoke regulatory arrangements (e.g. the length of time for which prices to remunerate the investment are agreed).

There is no doubt that well-designed competitive tenders can reveal innovative solutions and potential cost savings for the provision of infrastructure. Increasing the number of providers in the market would be welcome. Ofgem is already reasonably far down the route the NIC is proposing. Since 2009, offshore electricity transmission infrastructure, which connects offshore wind plants to the mainland, has been provided through competitive tenders. This regime is estimated to have saved consumers between £600m and £1.2bn.[8] Ofgem has also consulted extensively on whether similar arrangements could be used onshore, for example in the construction of transmission infrastructure to connect the new Hinkley Point C nuclear power plant. However, legislation changes will be required to allow for this Competitively Appointed Transmission Owner (CATO) model.

However, while the drive toward competition is understandable (particularly for large, separable projects), it will not unambiguously provide benefits for customers. Hiving off large investments for competition creates boundaries and possibly therefore scope for gaming the regulatory system (e.g. on issues around cost allocation, should an incumbent operator win a competition to provide a new project). The way competitions are run, and for which projects, is also likely to be inherently linked to the planning functions of the incumbent operator.

There may also be sectoral differences that affect the benefits case for competition. In the water industry, for example, it is not easy to see how competition can play a big role. The sector is not anticipating the sort of transformational change that is expected in energy, and it is therefore unlikely there will be many large, new, separable projects. Indeed, competition has already been employed to good effect where such conditions do exist, notably for the construction of the Thames Tideway Tunnel. But in other areas, competition is either not generating huge benefits – non-household retail stands out – or is difficult, as is the case with water resources. Direct procurement can potentially deliver some benefits, but the pros and cons need to be weighed up. Competition is not a panacea.

Another issue relates to timing. The NIC's suggestion seems to be that competitively tendered strategic investment projects will have their own bespoke price control arrangements, running along different timelines to standard controls. This looks like a recipe for increased complexity and a greater burden on regulators (e.g. to run competitions, set tariffs, monitor RAB/revenue/performance, update market codes). And what happens towards the end of the contract period? As the NIC notes, if a new infrastructure provider wins a 20-year contract, after which the asset is transferred to the incumbent, their incentives to ensure maintenance and reliability of the asset towards the end of the contract window will be diminished.

These and other detailed issues need to be considered and traded off against the potential benefits – and the value of potential benefits should also be tested carefully. Much of the win for customers would be expected to come in the form of cheaper financing. But the cost of capital allowances expected for incumbent operators in the next water and energy price control periods are lower than in the past. For the Hinkley-Seabank transmission line, Ofgem is now minded to reverse its previous proposals to use a competition 'proxy' model, because the expected cost of capital under that approach is no longer likely to deliver a benefit, compared to funding the project through the standard price control.

Conclusions

In short, the NIC is right to identify that achieving very ambitious increases in investment across multiple sectors means there is a need to assess whether regulation is fit for purpose. Long-term, strategic planning is required that is likely to force the government to make some difficult judgments. A number of the NIC's recommendations would support the delivery of efficient increases in investment, in the customer interest.

However, caution must also be exercised - changes to regulatory arrangements can often create distortions and unintended consequences. In our view, the proposal to aim off when setting allowed returns will prove counter-productive. And in developing these proposals, policymakers should ensure

[8] https://www.ofgem.gov.uk/publications-and-updates/evaluation-ofto-tender-round-2-and-3-benefits

that regulatory accountability is clear; and aim to make well-targeted use of more competition to deliver infrastructure, cognisant of its potential downsides while being realistic about its potential upsides.

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