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Dear Hannah,

RIIO-T1 – Consultation on strategy

Thank you for the opportunity to respond to the RIIO-T1 consultation on strategy. My comments below are in response to the questions associated with Chapter 4 of the "Consultation on strategy for the next transmission price control – RIIO-T1 Overview paper", specifically:

- **Question 1:** Do you consider the proposed outputs and associated incentives, along with the other elements of the proposals, will ensure companies deliver value-for-money for consumers and play their role in delivering a sustainable energy sector?
- **Question 2:** Do you consider that the proposed outputs and incentive arrangements are proportionate?
- **Question 3:** Do you have any views on the proposed outputs or incentive mechanisms?

Context

Last year Ofgem completed its RPI-X@20 review of Great Britain's energy network regulation regime. One of the key outcomes of the review was the realisation that the existing regime of five year price controls (in conjunction with some other parts of the regime) did not encourage regulated network companies to adopt long-term thinking. In fact, the regime actively encouraged companies to focus on the quinquennial price review. As a result companies often adopted short-term solutions to ensure short-term regulatory performance was optimised (e.g. by keeping costs low) even though this solution was not optimal for the long-term e.g. additional expenditure may be needed to modify the short-term solution to achieve a long-term solution. This is not in customers's interests when the cost of a one-off long-term solution is less than the sum of the costs of multiple solutions implemented iteratively (in NPV terms).

Part of Ofgem's proposed solution is to extend price controls to eight years. But setting an eight year price control in and of itself won't fix the problem. Companies will still face outputs (or targets) that have to be delivered each price control. Penalties and rewards will still be imposed if outputs are not delivered. As a result companies will still be driven to take short-term decisions, particularly as the end of the period approaches. This is undesirable as the 'end game' is to achieve energy objectives in 2050 and beyond e.g. carbon emissions 80% lower than 1990 levels. These long-term objectives take precedence over short-term goals; indeed, the short term goals only exist as stepping stones on the path to the long term goals.

Could ex-post rewards be part of the solution?

The problem Ofgem has been wrestling with is how to determine, without the benefit of hindsight, whether a company's decisions today are the best long-term solution. And therein lays a hint at a solution: hindsight. There are good reasons why regulators don't apply hindsight when evaluating investment decisions: most particularly if a company's investment decision was judged ill-judged at some point after it was made, and returns to investors disqualified, then investors would be somewhat more reluctant to invest in the first place. The increase in the cost of capital as a result would have consequences for customers' bills. But this doesn't mean that regulators shouldn't use hindsight in some cases. Indeed, it is axiomatic that while it is impossible to judge whether decisions today are best long term decisions, in 10/20/50 years time regulators will be able to make this kind of an assessment with a higher degree of accuracy. As a result, powerful incentives could be provided to transmission companies to adopt 'best' solutions by offering rewards, judged with the benefit of hindsight, sometime into the future. For the avoidance of doubt, this should be a one-sided financial reward: penalties should not be imposed so long as companies' decisions are judged to have been reasonable at the time for precisely the reasons hindsight is not presently used.[1]

To illustrate this approach to incentivising companies consider the example below. Specifically, in 2018 a transmission operator (TO) faces a choice between:

(i) a £400m investment that will help it to meet its 2021 objectives (to be set as part of the upcoming price control RIIO-T1) that it expects will need to be supplemented with another £175m investment in 2030 to make the earlier £400m investment consistent with its 2050 objectives, and

(ii) a £500m investment that is already in line with the best estimate of what is needed to meet the 2050 goals (or is adaptable to them at minimal cost), but which will not enable the company to meet its 2021 objectives (say because the solution would only function optimally once more substantial climate change occurs).

Assuming that the projections of what was needed for 2050 turn out to be accurate, that the penalty for not meeting the 2021 objectives is £20m and the cost of capital is 4.0% (real, post-tax), then the reward for making the longer-term investment would need to be around £16.5m if paid in 2035.[2] Of course, the reward may need to be larger than the minimum amount suggested in order to compensate companies for the relative uncertainty surrounding the expected payoff to taking long-term decisions. But equally obviously, if the reward is not available, then the companies would benefit (in NPV terms) by making the short-sighted investment.

The example illustrates that ex-post rewards could incentivise companies to take longer-term decisions in some circumstances. However, it should be noted that ex-post rewards will only be effective in cases at the margin i.e. where the NPV of two alternative investment streams is similar. In cases where it is significantly cheaper to make a single more expensive investment companies are already likely to undertake those investments and the need for further ex-post rewards is unnecessary. Likewise, in cases where the costs of multiple smaller investments is lower than a single more expensive option, companies will choose the multiple smaller investments option as it is in their commercial interests. Reflecting these considerations it is key that any ex-post rewards are judged against a ‘reasonable expected behaviour’ criterion i.e. companies should not be rewarded for simply doing what’s expected.

While the analysis above indicates that ex-post rewards *could* incentivise far-sighted behaviour, the practical implementation of such a scheme requires consideration of several tricky issues, including the size of the rewards, the process of decision making and when to assess past decisions:

- rewards need to be calibrated to ensure companies have strong incentives, but also to ensure that customers are the ultimate beneficiaries of companies' innovative long-term solutions. Some sort of benefit sharing arrangement seems in order, whereby the company keeps some proportion of the benefit it has delivered. Fixed prizes could be an alternative, but this could lead to prizes that are too small to incentivise companies' decisions around the largest - and therefore most important - decisions. Whatever the approach it is clear the rewards would need to be sufficiently large to matter to companies.
- whether a solution should deserve a reward might be a function of whether it was 'better' than other (or the ‘best’ among) companies' solutions to similar problems, or simply whether the solution had

[1] We note that Ofgem's initial consultation document on the Transmission price control (RIIO-T1) published in mid-December includes a proposal from RenewableUK for a "one-sided financial reward in the form a 'good performance bonus'" (see Ofgem (2010) “Consultation on strategy for the next transmission and gas distribution price controls – RIIO-T1 Outputs and incentives: Supplementary annex of RIIO-T1 Overview paper”, p54) for transmission companies dependent on a high-level environmental target e.g. the carbon intensity of energy flowing on the network. While the final details of the proposal are yet to be published (an initial version has been published on RenewableUK’s website), there appear to be some similarities between RenewableUK's proposal and the concepts discussed above. On the other hand, the RenewableUK proposal appears to envisage rewards being awarded for progress towards a long-term, but static, target. As a result, as the target date comes ever closer the transmission companies' incentive to take longer-term decisions (beyond that date) is reduced. Further, RenewableUK’s proposal appears to be more specifically focused on renewables generation than this paper’s.

[2] For simplicity it is assumed that there is no outperformance of WACC, depreciation or opex such that all cash flows other than capex, penalties and rewards can be ignored.

proved to be superior to other possible solutions i.e. even with hindsight a better solution could not be found. The process should also attempt to ensure companies are not rewarded simply because they have been a beneficiary of ‘good luck’ (rather than ‘good management’), but equally companies should not be denied rewards due to ‘bad luck’.

- evaluating whether a solution is 'best' too soon after it was made would make it impossible to determine if the decision really had achieved the objective it was designed to. Similarly, offering rewards too far into the future would (in net present value terms) provide an insufficient incentive to companies to offset any additional short-term costs (or penalties). An alternative may be to grant rewards on a phased basis as the appropriateness of the solution becomes clearer over time.
- whether a particular solution was 'best' might be judged by a panel of consumers or stakeholders, or by Ofgem itself. Ensuring the process is not open to undue subjectivity would be critical to making sure companies regard the potential rewards as genuine; if companies never expect to be granted a reward then the benefits of long-term decision making will appear purely illusory and won't incentivise companies as intended. One approach to determining rewards may be to draw on the processes already in place for the Low Carbon Networks Fund or for the processes Ofgem intends to implement for the time limited innovation stimulus it proposes to introduce as part of RIIO-T1 and RIIO-GD1.

Conclusion

There are good reasons why regulators set price controls ex-ante rather than ex-post. However, in the context of incentivising regulated companies to take socially optimal long-term decisions, rather than short term decisions in the interest of company shareholders, a system of ex-post rewards with-the-benefit-of-hindsight may be a useful addition to regulator’s tool-kits. While the optimal design of an ex-post rewards scheme involves consideration of a number of tricky issues, none of these seems unresolvable. On the whole, further consideration of ex-post mechanisms may be appropriate within the context of incentivising socially optimal long-term decision making. Ofgem – in the course of RIIO-T1 – may wish to consider such mechanisms further.

Should you wish to discuss any of the issues raised in this consultation response further, please do not hesitate to contact me.

Yours sincerely,

Anthony Legg