TIF'S RAB WORKING GROUP
RESPONSE TO THE BEIS CONSULTATION:
RAB MODEL FOR NUCLEAR

OCTOBER 2019

INTRODUCTION

1. The Infrastructure Forum's (TIF) network brings together investors, operators, constructors, lenders and professional advisors involved in the development of Britain's critical national infrastructure.

2. Over the past year, TIF has been particularly active on the question of infrastructure finance in the UK, having identified the need for a clear framework for the deployment of private finance. Some investors have told us that they are in 'hold and retreat mode' with respect to the UK market as a result of this and political uncertainty combined with concern about regulatory approaches to reduce rates of return.

3. In particular, TIF has strongly supported further application of the Regulated Asset Base (RAB) model for financing greenfield assets, as pioneered by the Thames Tideway Tunnel (TTT) project.

4. TIF's RAB Working Group (the Working Group) is comprised of experts in infrastructure finance with particular knowledge of the RAB model, UK regulatory framework and delivery of greenfield projects.

5. The Working Group welcomes the BEIS consultation on the RAB Model for Nuclear, which provides clear and accessible coverage of the key issues.

6. The Contracts for Difference (CfD) model used to finance Hinkley Point C (HPC) provided a structure suitable for financing this first-of-a-kind project. In the case of follow-on investments, such as Sizewell C (SZC), the RAB model has been identified by BEIS as the most suitable delivery model – a conclusion supported by the Working Group.

7. The consultation document outlines how, now that HPC is underway and the same European Pressurised Reactor (EPR) technology is fully operational in China, it is appropriate to consider such alternative models.[1]

8. The RAB model provides a structure through which risk can be shared between the market (including investors, contractors and the developer), consumers and the taxpayer to incentivise efficient delivery of the project at the best overall value for money. The nature of the structure, where parties are genuinely 'in it together' necessitates the fostering of an enterprise based approach to the project as a whole (i.e. as

[1] Department for Business, Energy and Industrial Strategy, RAB Model for New Nuclear, July 2019, p.9.

recommended by one of the key principles of Project 13)[2] rather than relying heavily on contractual obligations, so promoting a transactional approach to delivery.

9. The RAB delivery model framework can provide incentives for risks to be efficiently managed, not least through alignment of consumer, investor and tax-payer interests. The essential point being that the benefits of this more efficient approach to risk management outweigh the ostensibly higher costs of private over public sector finance, as long as the private sector finance is itself efficiently deployed. The RAB model can offer this financial efficiency, if appropriately structured.

10. Given that the nature of the relationship between the parties within such a RAB model is necessarily very long term in the case of nuclear power generation, this model relies heavily on regulatory stability.

11. Moreover, if suitably implemented, the RAB model also has the ability to help address the issue of social legitimacy related to the private financing of infrastructure assets. If a cost of capital only marginally higher than Government's cost of finance can be achieved, the premium is more likely to be seen as acceptable and good value for money with respect to the risks managed, incentives applied and resources mobilised, that the RAB model allows.

12. The consultation document provides a comprehensive summary of current Government thinking on the application of the RAB model to new nuclear. The Working Group has no immediate significant concerns with the Government's approach.

13. Timely development of new nuclear projects is crucial for the UK meeting the Government's target of Net-Zero carbon emissions by 2050. The Committee on Climate Change robustly asserts that "power sector decarbonisation does not rely on variable renewables alone, but a portfolio of technologies including nuclear power, bioenergy with Carbon Capture and Storage (CCS) and decarbonised gas via CCS or hydrogen". [3]

14. In responding to this consultation, the Working Group has set out the Critical Success Factors for the RAB model as it relates to new nuclear and potential watch outs for its implementation on this basis (see below).

15. As the role of private finance in infrastructure has been challenged in the past, this consultation provides a valuable opportunity to reassert the benefits and necessity of private finance in the delivery of UK infrastructure, through a structure that offers best overall value for money (VfM) for consumers.

16. It is therefore important to consider that the factors set out here will have broader applicability than to new nuclear assets alone. To this end, the Working Group will examine potential opportunities and considerations for wider application of the RAB model later in the year.

[2] Institution of Civil Engineers, Project 13, 2018.
[3] Committee on Climate Change, Net Zero – Technical Annex, 2019, p.2.

17. This document is submitted in response to the BEIS consultation on the future new nuclear programme, albeit that at various points in the document reference is made to SZC given its relatively advanced stage of development maturity.

CRITICAL SUCCESS FACTORS

For the RAB model to deliver effectively, the Working Group considered a number of critical success factors that need to be applied:

INVESTABILITY OF THE RAB MODEL

- Pre-agreed framework for determining the RAB;
- Revenue stream throughout the project lifecycle, including decommissioning, that derives from a credit worthy counter-party and which is both predictable and stable;
- Understanding the scale (4-5x larger than TTT) and complexities of nuclear projects, such as the need to anticipate investor due diligence requirements;
- Government guarantee of large-scale remote risks that will not be VfM or feasible for the private sector to take-on (e.g. under-pinning a threshold outturn cost for the project);

BUILDING ON THE ECONOMIC REGULATORY REGIME

- Using a tried and trusted regulator to ensure credibility with clear duties to support a sustainable new nuclear build;
- Careful balance of consumer and investor interest by the regulator (for example, a duty to ensure the project is financeable as well as a duty to ensure that customer bill impacts are affordable);
- Maintaining an initial allowed return on capital (e.g. fixed Weighted Average Cost of Capital (WACC) or such other relevant cost of finance parameters) for a much longer period of time than the usual regulatory review intervals of the infrastructure sector (albeit that the WACC etc may be subject to pre-agreed adjustments);
- Regulatory determination of the allowed return on capital, post the initial fixed period, should be by reference to pre-agreed guidance which may also need to remain in place for longer periods than in other regulated industries;

INCENTIVISING EFFICIENCY AND DELIVERING VALUE FOR MONEY

- Clear, transparent and verifiable project cost and risk build up, to provide confidence;
- A clear regulatory link between expenditure and increase of the RAB;
- Aligning incentives throughout the supply chain for successful delivery;
- Balanced commercial relationships which support efficient expenditure and incentivise over-performance;
- Resolving any potential asymmetry of risk transfer due to difficulties in getting the baseline cost right;
- Treatment of non-WACC building blocks over the duration of the licence should be agreed *ex ante* to the extent possible (e.g. regulatory depreciation life, decommissioning, opex costs, tax etc) so that investors know what they are bidding against;

SUPPORTING A SUSTAINABLE SUPPLY CHAIN

- The procurement process (whether of goods, services or finance) needs to be efficient in terms of cost, time and appropriate transparency;
- The normal relationship applies between the incremental certainty gained through the due diligence process and the VfM offered by bids so informed although, in the case of nuclear, this implies an even higher bar in terms of the need for effective communication ahead of and during procurement;
- Contracts and their sub-contracts, should be balanced and resilient as regards risk transfer and incentives, especially within the context of building a supply chain capable of supporting a programme of investment;

SUPPORT FOR A UK NEW NUCLEAR PROGRAMME

- Political (and ideally public) support for use of the RAB structure and role of nuclear in decarbonising the UK electricity supply and providing a robust baseload for continuity of the national energy supply in the context of achieving Net-Zero carbon by 2050;
- Suitable consideration of the interests of increasingly Environmental, Social and Governance (ESG) focussed investors should be undertaken, especially given the size and political nature of the project, possible changes to generation technology, few suppliers, and the genuine risk of significant cost increases.

BACKGROUND

THE TTT MODEL

18. The defining characteristics of the TTT Model that are relevant to this consultation response are seen to be:

    a. The formation of an opportunity that is investable for third party debt and equity (i.e. unconnected to the projects sponsors) immediately prior to the start of main construction works;

    b. The investment opportunity presented to the market is as close as possible to that of a business-as-usual regulated utility, insofar as:

        i. consumers are funding asset formation prior to completion;

        ii. the debt issued by the project vehicle is capable of achieving an investment grade credit rating during construction;

        iii. equity capital is able to earn a running yield during construction;

        iv. there is no cliff-edge refinancing gain opportunity for investors at the conclusion of construction;

        v. there is confidence in a long-term regulatory regime that covers the entire project life (in the case of a nuclear plant also extending into the decommissioning period);

        vi. RAB and revenue estimation methodology are both captured in the project's licence;

    c. A Government Support Package (GSP) for investors and lenders that is capable of addressing low probability but high impact risks tailored to achieving the above.

VALUE FOR MONEY

19. There are various routes by which VfM can be achieved in the delivery of large and complex infrastructure projects, across diverse sectors. In the case of HPC, the levers chosen were principally those of:

    a. Output based contracting (e.g. the Government only paying for electrical power that is delivered); and

    b. Fixed price contracting (e.g. with the risks of overall cost control substantially sitting with a single party, supported by a strong balance sheet).

20. The scale of both HPC and SZC and the specialist nature of many of their inputs (e.g. having in some cases only single suppliers), means that competition – a common driver of VfM – may, in some instances, be limited.

21. Instead, for SZC, the achievement of VfM for consumers and taxpayers will rely mostly on the principles of:

    a. Incentivised risk management (as distinct from pre-priced risk transfer per se);

    b. Transparency (e.g. the separable procurements of goods, services and finance);

    c. Competition, where this is feasible – e.g. in relation to the mobilisation of private finance;

    d. Replication of the design successfully developed and delivered on HPC, such that learning-curve benefits, construction efficiencies and similar are accessible.

22. The RAB model is well suited for this approach to VfM delivery. In the case of TTT, for example, construction and finance were procured by separate and distinct (although linked) processes; and it proved possible to design effective pain/gain sharing mechanisms that aligned the interests of customers, contractors, investors and tax payers.

Q1: HAVE WE IDENTIFIED A MODEL WHICH COULD RAISE CAPITAL TO BUILD A NEW NUCLEAR POWER STATION AND DELIVER VALUE FOR MONEY FOR CONSUMERS AND TAXPAYERS?

INVESTABILITY OF THE RAB MODEL

23. Investability of the RAB model is well demonstrated by TTT. The Working Group considers that the key features of TTT can and should be replicated in the new nuclear context. Indeed, a nuclear RAB provides an opportunity to further improve on the model.

24. The particular investability challenges for nuclear will relate to the scale of investment required, confidence in technology (e.g. enhanced by the replication of HPC's designs in SZC), funding for decommissioning costs as well as protection against low probability, high impact costs and risks.

25. The scale of capital to be raised for construction of a new nuclear project is substantial in comparison to other infrastructure and, specifically, the TTT project – approximately £20bn for SZC compared to the most recent estimated cost for TTT of £3.8bn. The structure, as a result, will likely need to target higher investment grade ratings, reflecting a lower risk profile, in order to attract the necessary capital.

26. The most significant implication of this difference of scale will be the relative difficulty of mounting a TTT-style financing competition for SZC. Further consultation with providers of equity and debt capital is recommended before a preferred route is identified for the mobilisation of the requisite private finance.

27. Whereas a book-building approach may seem more deliverable than a fully underwritten financing competition, the VfM benefits that are potentially available from innovation in the capital structure should not be lightly discarded. In any event, it will remain essential that investors have clarity and long-term confidence in the chosen RAB model before financial close.

28. As was demonstrated by the proposed project at Wylfa, without certainty on the financing structure before financial close, investors will be unwilling to sign on to the project, making it unviable.

29. It is equally important that an allowed rate of return (e.g. fixed WACC subject to pre-agreed adjustments) is maintained for as long as possible on the project, as was the case on TTT, in order to deliver VfM. There will inevitably be uncertainty around the WACC once subjected to regulatory determination and the longer the fixed WACC is maintained, the less risk that will be priced in by investors.

30. Given the scale of capital and length of tenor required by new nuclear projects, it would be beneficial if investors could easily trade in and out of equity invested in the RAB to access the potentially lower equity financing costs that comes from greater liquidity.

31. There is evident investor appetite for stable long-term opportunities within the regulated infrastructure sectors, including for "big ticket" assets; however, the realisable capacity

of the market on any particular day is, of course, subject to many influences. Market capacity will be especially difficult to predict over the period of time expected for the development of SZC. Where the issue of financial market capacity arises, mechanisms such as Government co-investment (or co-lending) on terms determined by open market processes can provide an effective remedy.

32. Credit rating agencies are likely to require that all equity be raised up front for new nuclear projects; thus, the benefit of listing the project is not access to cheaper equity later on, but that the perception of greater liquidity for the equity means it is priced more cheaply from the start. Such an approach could facilitate greater access to pension fund money for the project and decrease reliance on sovereign wealth funds.

33. The only other contemporary example of a major infrastructure project being listed on the stock market during its construction period was Eurotunnel (now GetLink) in 1987; however, the benefits of listing will need to be weighed against the anticipated "fit and proper person" licence condition. Although these considerations are not necessarily mutually exclusive, this tension requires further analysis.

34. TTT does not have fit and proper licence conditions, instead the "fit and proper" test was built into the procurement process. Ofwat does, however, assess changes of control and, where necessary, introduces stronger regulatory ring fencing provisions in the licence.

35. Implementing a regulatory duty to maintain financeability is not the same as ensuring that existing project debt will maintain its investment grade rating throughout its tenor – e.g. where action by company management might lead to a loss of credit quality. In this sense, the issue of maintaining investability in the RAB is no different from that faced by regulators of other utilities.

36. One area deserving further analysis is that of including RAB re-openers to assist investability – i.e. adjustments to baseline expenditure when there is greater certainty on costs once construction is underway. Any re-opener model applied to a new nuclear project will need to be transparent as to the circumstances under which additional construction costs and the overall threshold outturn will be taken back to the end user.

37. The discussion is on-going about whether nuclear technology should be classified as a sustainable form of generation and how it fits within an ESG framework. Greater clarity on this and strong Government support for the ESG credentials of SZC will be needed to help create sufficiently deep pools of potential investors and lenders, such that a VfM outcome is likely from the mobilisation of private finance.

38. The UK Government should be clear on the significance of the role of nuclear power in delivering Net-Zero Carbon by 2050 in order to unlock the scale of capital required by projects.

INCENTIVISING EFFICIENCY AND DELIVERING VALUE FOR MONEY

39. The RAB model can be used to incentivise efficiency and to deliver VfM. One such approach is that the entire project cost and risk contingency is essentially 'held' by the licensed utility company established as a result of the appointment process. 'Held' in this context means that the company will have access to funding (i.e. customer revenues up to the limit of the project cost and risk contingency – known as the threshold outturn).

40. The agreed threshold outturn cost determines the extent of the risk borne by investors and consumers, beyond which the GSP responds. A robust incentives regime is then put in place to ensure that expenditure incurred is economic and efficient. Stakeholders will be incentivised to work together towards the successful delivery of the project for mutual benefit with financial rewards for bringing the project in below the threshold outturn cost and, likewise, having to take a proportion of accountability for any overspend on the project.

41. The threshold outturn project cost must therefore be established through the fullest possible project costings and risk analysis; and, having established the appropriate threshold outturn, the incentives regime needs to be suitably calibrated to deliver cost and time efficient performance against the base line.

42. This approach does mean there will be a degree of price uncertainty to consumers; however, this uncertainty is justified by the significant reduction in cost of capital that a RAB approach can then deliver.

43. Incentives should be aligned up and down the supply chain in order to ensure that if consumers are negatively impacted by delays and cost overruns on the project, investors are also underachieving financially as against their base case expectation.

44. There are two important foundation stones to the achievement of VfM through incentivised risk management: first, that confidence in the expenditure baseline is such that investors' base case is not simply set at the threshold outturn; and second, that there is no regulatory retrospection and disallowance of expenditure that has been properly incurred under the agreed procurement and contracting strategies and their associated incentive regimes.

45. The regulator and RAB company should agree a clear strategy for evaluation of additional costs above this baseline at the outset, giving confidence that expenditure will not be disallowed if that strategy is closely followed. Other regulated industries have followed this approach to give strong regulatory certainty, whilst still having provisions for disallowing expenditure in instances of clear, inefficient expenditure.

46. Provided that there is appropriate sharing of elements of overspend (e.g. as between contractors and investors, and between investors and customers) above pre-agreed fulcrums (e.g. P50 or P80), this approach allows for a valuable degree of flexibility in managing project risk whereby, in the event of cost overrun or delay, shareholder

returns could be reduced or, in the extreme case, suspended and/or additional finance could be raised by the project in order to mitigate problems with delivery.

47. On TTT, the operator receives 30% of out-performance savings relative to an agreed base case estimated cost level, with the remaining savings then adjusted into the RAB to benefit customers. Conversely, the operator is accountable for 40% of any overspend on the project relative to this trigger level, up to the threshold outturn. These figures are illustrative of the kinds of bespoke incentive regimes that can be designed within a RAB model according to the needs of an individual project.

48. SZC will be a second-of-a-kind project for which comparisons can be drawn against HPC and other international cases, to help inform where the trigger levels for pain/gain sharing should be set, for example, including the achievability of efficiency savings accessible to SZC.

49. Without doubt, it will be harder to set the trigger levels for pain/gain sharing and the associated %s for SZC than for TTT, due to the overall technological risk profile of a nuclear power station, its scale and the specialist nature of much of its supply chain. Nonetheless, SZC is a stand-alone greenfield asset with a single interface to its surrounding electrical grid infrastructure which, at least in this respect, is straightforward. It may therefore be advisable that the threshold outturn at which Government steps in is set lower to reassure investors.

50. Furthermore, for investors to have certainty on the risk profile of the project in advance of financial close, the threshold outturn cost of the project should be agreed *ex-ante*.

51. A potential issue with the threshold outturn on a nuclear project will be whether it has a much greater range than applied on TTT. The range will be determined in due course by detailed cost and risk modelling. There is a clear tension between this range and the accessibility of contingent finance during the course of construction (or indeed, as mentioned above, whether lenders and Government will require all equity to be pre-funded, or at least secured).

SUPPORTING A SUSTAINABLE SUPPLY CHAIN

52. The starting point for any discussion of the supply chain for the infrastructure sector within the UK currently is its relatively mixed state of health. This subject has been covered in a series of papers by The Infrastructure Forum[4] and provides important context and constraint within which the delivery plans for any major infrastructure investment (whether private or public sector) must be developed. The sheer scale of SZC and the specific technological risks involved only serve to emphasise the importance of this issue.

[4] See: The Infrastructure Forum's Procurement Working Group, Sustainable Procurement: A vision for UK Infrastructure, February 2019.

53. The construction supply chain for nuclear power generation in the UK is restarting; but it is at a fragile stage with no direct line of sight (yet) to a pipeline that would incentivise supply-side investment in capacity; although clearly the adoption of a repeat design for SZC provides a good foundation. Nuclear is a safety first industry with extensive and lengthy qualification required for both the supply chain and equipment. Consumers will not benefit from suppliers that are unable to sustain their activities; this fact must be reflected in the incentive mechanisms which equitably reward performance, whilst ensuring the 'race for the bottom' is not promulgated in tender processes.

54. The provision for risk within the base case will inevitably include allowances for supply chain risks. This will require careful consideration when it comes to the design of suitable trigger levels for pain/gain sharing as described above.

55. Additionally, the capital requirements of asset holders will change over time – from construction into operation and then decommissioning – which the supply chain and regulatory regime should take into account in developing the appropriate "control period" regime.

COMPETING THE WACC

56. Another component of the RAB model, as implemented on TTT, was competing the WACC for the project which resulted in a considerably lower cost of capital than might otherwise have been achieved. The bid WACC for the TTT concluded at 2.497% which was less than the indicative point estimate of 3.29%. This resulted in a significant saving on the total project cost for consumers.

57. The fact that the cost of capital for SZC will, on some estimates, amount to more than half of the total costs borne by customers, serves to highlight the crucial role of this input cost in determining overall affordability of the scheme for consumers.

58. The quantum of private finance which needs to be mobilised for SZC does, however, place an important constraint on how the WACC may be determined. If working assumptions are used for the SZC capital cost of £16bn and for gearing of, say, 70:30 to 60:40, debt to equity, then the implied quantum of equity finance to be raised is in the range £5-6.5bn. A relatively low gearing is indicated due to the need to achieve a strong credit rating and to secure financing up to the threshold outturn. This should be compared with the circa £1.3bn of equity capital raised for TTT.

59. Moreover, it should be borne in mind that despite extensive market soundings and market preparation exercises, the competition for finance on TTT only yielded two fully underwritten equity offers.

60. In these circumstances, it is recommended that further consultation be undertaken with investors and lenders to help inform the choice of a preferred route for the mobilisation of the necessary private finance. The twin objectives of VfM and deliverability require careful trade-offs to be made. The processes of market sounding and market preparation, as were deployed on TTT, not only maximise the degree of investor interest

and so potential competition, but also help optimise the mobilisation process itself. The possibility of a fully underwritten competition is not ruled out, but rather sits as a book-end to a range of options.

61. If competition between several underwritten equity offers was to be the preferred approach, it might be necessary to consider reducing the size of the overall equity cheque in order to reduce the cost of capital. A smaller equity cheque would also be likely to encourage more consortiums to form and compete in the market as this approach would effectively require the necessary equity capital to be found in the market multiple times over.

62. It may be necessary to think imaginatively in this area, for example it has been suggested to us that the project could be open to retail investors, perhaps through index-linked debt for which there is considerable retail demand. Government could also consider co-investing alongside the winning consortium on full commercial terms, as it already does in the National Digital Infrastructure Fund.

63. Two of the most crucial foundation stones for the achievement of a VfM WACC for SZC will be the extent of investor confidence in the regulatory framework and in the regulator itself. The importance of this cannot be overstated.

64. A secondary, although also necessary, condition for the achievement of a VfM WACC will be the interest rate movement and debt market disruption protection provisions made available to investors – e.g. through the licence and GSP respectively.

SUPPORTING A UK NEW NUCLEAR PROGRAMME

65. Where the project has multiple construction sites, such as TTT, or other special circumstances the figure for project development costs can be higher than average. In this context, “development costs” refer to activities such as planning, design and procurement etc necessarily undertaken prior to financial close and exclude hard costs such as the acquisition of land and the early diversion of utilities.

66. Where the sponsoring body for the project is itself a regulated entity, these development costs are typically recognised within the RAB during the regulated period in which the costs were incurred. This was the case for Thames Water in sponsoring TTT and is broadly the case for Heathrow Airport sponsoring its third runway.

67. Specific and bespoke regulatory processes are typically agreed between the project sponsor and regulator to ensure and evidence that the costs incurred are VfM for consumers. It is clear that in promoting a whole programme of new nuclear power station investments, there will be an additional class of developments costs which go beyond those of general project sponsorship and which will need their own bespoke regulatory treatment. There should be careful consideration of how these costs should be accounted for as part of supporting a new nuclear programme in the UK.

68. At the other end of the spectrum lies the question of nuclear decommissioning costs. Inclusion of costs for a 'Funded Decommissioning Programme' (FDP) and waste storage in the RAB is also worthy of consideration in delivering the best VfM for consumers and setting the best conditions to support a programme of new nuclear assets in the UK.

69. It is estimated that decommissioning costs will be approximately 15% of the capital value of SZC. This could be allocated through a dedicated fund setup from the start of operation of the asset.

70. Options to finance this fund through the RAB or otherwise could be explored but the Working Group believes that this should not come at the expense of financing the SZC project itself. This will largely depend on investor appetite to put up the capital to finance the FDP.

71. The overall health of a nuclear programme depends on early progress in setting up a clear and credible decommissioning strategy (its inclusion up-front in the licence), and removing any risk to investors that they will be affected by unexpected changes to policy in this regard.

72. Such a scheme would be easier to employ if the new nuclear RAB was related to a new nuclear *programme* rather than on a single asset basis. In any event, investors should be shielded from the risk of increasing FDP costs as it is not a risk which they are able to manage or even assess.

Q2: DO YOU HAVE ANY COMMENTS ON THE COMPONENTS OF THE ECONOMIC REGULATORY REGIME AS DESCRIBED?

73. The quality of the regulatory regime is integral to the success of the RAB model, particularly for a greenfield asset not embedded in an existing regulated company with which investors are well acquainted.

74. Criteria and process for the award of an Economic Regulatory Regime (ERR) licence should balance operator, consumer and investor interests through a pragmatic approach to risk sharing to deliver the project at the best possible VfM for consumers.

75. As set out previously, TTT achieved this by securing a support package from Government (GSP) and pairing this with an agreed project cost projection and a strong incentives framework for efficient delivery.

THE REGULATOR?

76. No existing regulator has a remit to issue an ERR licence for a new nuclear project financed through the RAB model at present.

77. The consultation document sets out that a *new* regulator could be set up to regulate the RAB for new nuclear, interacting with the intermediary body, operator, the Grid and suppliers. A new regulator could have the potential benefits of providing a single focus for the regulation of nuclear investments and for embracing a specifically long-term framework for these investments. It might also have the benefit of being perceived as more isolated from political influence and, in this way, prove more credible to investors.

78. Alternatively, Ofgem – already well-established as regulator of the energy sector and thus possessing knowledge on the overall operation of the system and integration of new assets into the Grid – could regulate the RAB for new nuclear; and, in this case, offer investors the prospect of a familiar organisation with a trusted track record.

79. Ofgem's statutory duties include: to protect the interests of existing and future consumers of electricity and gas by promoting decarbonisation, security of supply, European harmonisation; and to promote effective competition where possible. Arguably these duties would need to be amended to take into account the specific needs of fostering sustainable new nuclear build. This may be particularly important in the context of recent relatively adversarial relations between some regulators and investors versus the need to raise significant, long-term capital.

80. Moreover, there are considerable time constraints that should be taken into account in consideration of the most appropriate body to regulate a new nuclear RAB. Current live proposals for new nuclear assets, namely SZC, are time limited with respect to the design of the reactor adhering to regulatory standards. Some believe that choosing Ofgem as regulator of the new nuclear RAB would mean that the process could proceed more quickly and in line with these limitations, but this would not be the case necessarily if

there were the requirement for statutory changes to Ofgem's powers or a new regulator needed to be formed.

REGULATORY CERTAINTY AND STABILITY

81. The RAB model has become an important feature of the UK regulatory framework without explicit legislative backing; the success of the model has arguably relied on the impartiality and strength of the regulators in implementing both the letter and the intended spirit of the model.

82. As a consequence, the UK model may have greater flexibility in this regard than other similar structures operating internationally, such as the US 'Rate Base Model'. This flexibility, on the one hand, could pose a risk to investors if the regulator does not honour the spirit of the RAB when determining the WACC. By way of comparison, however, the US model – legally embedded in the regulatory framework – has encountered some difficulties caused by legal challenges to decisions on the WACC undermining its integrity. This disrupts and delays the delivery of projects and ongoing investment.

83. For deploying the RAB for new nuclear projects, the risks associated with the flexibility of the UK RAB model could emerge in the operational phase of the asset when responsibility for setting of the WACC will default to the regulator. This will be particularly acute if regulatory independence is tested by increased political intervention in regulated markets and regulators are subject to pressure to lower the WACC.

84. In order to reduce this risk, TTT put in place specific parameters for consideration by the regulator (Ofwat) for setting the WACC in the operational phase to ensure that consumer and investor interests were well-balanced and the integrity of the RAB was not undermined. These factors make it possible for the RAB to both increase or decrease on assessment by the regulator.

85. Inherent features of new nuclear projects as previously described mean that parameters for setting the WACC need to provide even greater certainty about the post-construction regulatory regime, particularly if Government choses to set up a new regulator.

86. The flexibility of the UK model and the trust in the regulatory framework that has been established is of benefit to the UK as a whole. Translating the RAB to stand-alone greenfield assets will, however, require greater care that this regulatory environment is upheld and protected by all stakeholders.

87. The fact that the UK regulatory model is well-established and understood provides the ability to share economic and other data, such as costs of capital, across different RABs, facilitated by the UK Regulators' Network. It will be important to explain the methodology of any regulatory comparison in setting opex costs, but improved access to information and greater transparency should overall have a positive impact on regulatory determination of the WACC post-construction.

THE IMPORTANCE OF LONG-TERMISM

88. Long-termism in the regulatory regime, particularly in the context of a major infrastructure projects such as new nuclear assets will be essential to the success of the RAB in financing future UK infrastructure.

89. TIF's submission to the National Infrastructure Commission's *Study of the Future of Regulation*[5] emphasised the importance of both independence and a longer-term view in the UK regulatory framework. The current political environment means that there is some uncertainty as to what the enduring regulatory regime will look like and how the RAB will be administered going forward.

90. Clear unequivocal political support is required for new nuclear and the RAB model, likely to be achieved by a high degree of cross-party political consensus to ensure the project's success. TTT found success in a similar approach to ensure certainty in the project and financing model to dispel concern that Government and the regulator would later renege on their decision to go ahead.

91. Importantly for the UK's future energy supply mix, there is an opportunity for the RAB model to be applied in the context of a multi-asset programme, beyond that of SZC alone. This would reinforce that the model is based upon the stock of financial capital through which to provide an outcome as managed by the regulator rather than the asset itself being financed.

92. Clarifying this would also enable the RAB to continue beyond the life of an asset itself; however, it relies upon the market believing sufficiently in the credibility of the regulator for the assets under management to be notional rather than real. In cases where the market does not trust the regulator sufficiently, the RAB reverts to being tied to the asset itself, as perceived by investors, which limits opportunities for a programmatic approach. Political risk is a significant determinate in this perception.

[5] The Infrastructure Forum, The Infrastructure Forum's Response to the NIC's Future of Regulation Study, 2019.

Q3: DO YOU HAVE VIEWS ON HOW CONSUMER INTERESTS ARE PROTECTED UNDER THE PROPOSED APPROACH? WHAT ELSE SHOULD BE CONSIDERED TO PROTECT CONSUMER INTERESTS?

THE GOVERNMENT SUPPORT PACKAGE

93. A GSP – as used for TTT – addresses low probability high impact risks. Its purpose is to create a project delivery environment in which the private sector can focus on what it is good at without bearing the consequences of events that it can neither manage nor price.

94. The TTT GSP comprised five distinct limbs each designed to address a specific risk. The transparency and specificity of this approach itself meant that its role could be demonstrated in protecting customers and in enabling a VfM solution to be delivered by the private sector. Furthermore, the essential design principles and inherent flexibility of a GSP solution supports its suitability for fulfilling a similar role on SZC.

95. The creation of a project delivery environment in which the private sector can focus on what it is good at protects consumer interests.

96. The GSP, as structured for TTT, only operated in remote circumstances. It is right, therefore, that the project overall was not classified by the Office for National Statistics as being on-balance sheet as a result of the GSP constituting risk to the taxpayer.

97. On major infrastructure projects, it is vital that Government recognises it is not feasible nor best VfM for the private sector and consumers to bear high impact, yet highly improbable risks. Without such support from Government, it is unrealistic and unsustainable for the private sector to take on such risk.

98. At present, provision under the GSP for payments in the event of discontinuation of a new nuclear project is unclear in the consultation document and the tail risk relating to a potential mismatch between the asset life and duration of the GSP should be clarified before proceeding.

99. It has been suggested to us that the risk of the project being abandoned will be perceived by investors to be greater on a new nuclear project than it was for TTT. This is because of the size of the project, its political nature, the possible changes to generation technology, few suppliers, and the genuine risk that costs could increase very significantly. As a result, investors can be expected to need more protection than they did on TTT, e.g. on hedging contracts which may have break costs that are hard to forecast and basic (gilt based) levels of return.

100. In setting the GSP, Government should remain cognisant of the incremental certainty gained through the due diligence process and as the maturity of the project develops. The needs of investors in setting the scope and scale of the GSP should be paramount and the fee payable to Government should itself pass a VfM test. For that reason, we would encourage flexibility in the evolution of the GSP (through market engagement and

the procurement process) until financial close, allowing investors to accurately reflect and price their risk, not at the outset, but during the process.

PROTECTING PRESENT AND FUTURE CONSUMERS

101. New nuclear projects, like most infrastructure projects, will provide significant benefits for future generations, most notably in responding to the need to decarbonise the UK's energy supply mix and providing greater resilience and flexibility to meet increasing demand for energy. In some cases, present generations may not even experience the full benefits of a project.

102. In structuring the approach to licensing and calculating allowed revenue, it is possible to fix the return to investors based on the actual life of the asset, or it may prove beneficial when considering VfM and higher level questions on who should pay for infrastructure for the period of depreciation to be set for a period shorter or longer than the actual life of the asset. This provides a mechanism through which to allocate the costs of new nuclear in a way that is perceived to reflect intergenerational fairness.

103. If the economic benefits to society extend beyond the operational life of the specific asset, then a social welfare (i.e. economic efficiency) case can be made for RAB recovery beyond the operational asset life (subject to the same level of transparency). For example, if the project has positive spill-over benefits for a wider programme of zero/low-carbon generation which continues past the operational life of the specific asset.

104. It is generally the case that programmes of similar investments can achieve greater VfM than one-offs, due to factors such as economies of scale, learning curve effects and the tooling-up of the supply chain. The extent to which such VfM benefits are realisable in practice depends crucially on the way the investment pipeline is managed. Within this context, one idea discussed by the Working Group was the concept of a programme licence.

105. It should though be recognised that in shifting the cost burden of new nuclear assets to future generations it may prove more difficult to demonstrate full transparency on unique cost allocation which has been a growing trend in the regulated sectors. Transparency as to what takes its place and when (and therefore predicates investor exit) will be necessary.

106. The tenor of investment may have implications for the types of investors in and risk exposure of the project, depending on the liquidity of the investment. It is important to protect consumer interests throughout the lifecycle of the project. Contributions to the FDP should therefore align with the above considerations. It will be important to shield investors from on-going liabilities relating to the actual costs of the FDP as they are subject to influences beyond investors' ability to manage or price.

107. It should not therefore be assumed that the RAB model will necessarily provide best VfM for consumers if aligned with the life of the asset. Other factors should be taken

into consideration when determining the length of the RAB model, including who should pay and the cost of capital, in order to ensure that the RAB model is investable, as well as fair in the allocation of the costs of new nuclear to consumers.

108. Another factor that should be considered in the debate is that, for the RAB model to work, the project company would need to recover an allowed revenue during construction, and would also need to be able to recover an allowed revenue in operations. This allowed revenue may be higher than what it is possible to recover through the normal market mechanisms. It is assumed that energy suppliers could not opt out of paying the surcharge for SZC during construction; however, during the operational phase, suppliers may have the scope to buy electricity from renewable sources only.

109. Customers may be able to rely fully on off-site energy and disconnect from the electricity transmission system which, if it becomes a growing trend, would diminish the customer base against which the charge for SZC could be spread, pushing up the remaining connected customers' bills. This is arguably though a remote situation as most customers would remain connected to the electricity system for back-up supply and would therefore receive a bill.

110. Participants in the Working Group with intimate knowledge of the RAB model also have noted that the depreciation profile of SZC would have to change from that used on TTT. It was suggested that depreciation could be used as a tool to determine the distribution of costs between present and future consumers.

111. One of the key things about consumer interests being protected is that there is a mechanism to deliver new capacity in an environmentally sustainable way. It is possible to use the design parameters of a RAB model (including trigger levels for pain/gain sharing and related %s) together with a suitably designed GSP, to protect consumers in developing a new nuclear project.

QUESTION 4: DO YOU AGREE THAT CONSUMER RISK SHARING COULD BE VALUE FOR MONEY FOR CONSUMERS IF IT ACHIEVES A LOWER EXPECTED OVERALL COST FOR CONSUMERS COMPARED TO A CONTRACT FOR DIFFERENCE MODEL?

112. The prospectively lower cost to consumers available from adoption of the RAB delivery model derives primarily from its ability to create an investable proposition much like a business-as-usual utility, including the funding of assets in formation, for which there is a potentially deep pool of equity and debt investors.

113. Risk sharing with consumers *per se* is not a defining feature of the RAB model. It is possible to have price adjustment mechanisms under a CfD, or any other kind of output-based contract, that flow a defined share of cost risk through to end-consumers (although this was not implemented as part of the HPC CfD which had only limited price re-openers). A risk sharing arrangement used within a RAB framework, however, enables proven and familiar mechanisms to become available for balancing the interests of consumers and investors.

114. Moreover, the transparency of procurement, cost, risk and performance measures inherent in a RAB-based model bring their own VfM benefits. Such a model is well suited to a follow-on investment, such as SZC, which carries a much reduced technological risk profile compared with HPC, for which a CfD is a better match.

115. A second driver of VfM within a RAB-based model, compared with a fixed-price CfD model, is that it avoids high contingencies being built into the *ex ante* delivery price. Within a fixed-price CfD model, these contingencies effectively commit the purchaser to buy at the (equivalent of a), say, P95 (or higher) price, despite it having a relatively low probability of being exceeded. It is not hard to show the VfM advantages for consumers sharing in the benefits of the delivered price coming in below a P95 figure, if they are protected by a GSP from the price exceeding an even lower probability threshold outturn price.

116. Modelling of the proposed RAB-based mechanisms for the incentivised management of risk, and its sharing across investors, consumers and contactors will demonstrate the wide range of scenarios under which a lower overall cost for consumer can be expected from a RAB-based model compared with a fixed-price CfD (depending upon where the threshold outturn is set).

QUESTION 5: DO YOU HAVE VIEWS ON THE POTENTIAL WAY TO DESIGN THE REVENUE STREAM FOR A NUCLEAR RAB MODEL THAT WE DESCRIBE, AND ARE THERE ALTERNATIVE MODELS WE SHOULD CONSIDER?

117. Design of the revenue stream is fundamental to investor certainty and to that end a long-term, strongly credit-worthy revenue counter-party will be absolutely critical.

118. The Working Group agrees with the proposal by BEIS in the consultation document that revenues should be collected by an Intermediary Body which should replicate the Low Carbon Contracts Company (LCCC), subject to the above point which may require contingent credit support under the GSP to achieve.

119. A new intermediary body will be fundamental to making revenue collection from energy suppliers and customers work within the current market mechanisms. In construction, the expectation is that a surcharge will be levied on electricity suppliers, based on their market share; this way suppliers would not be adversely affected by customers switching.

120. For operations, it is more difficult as the power station has the opportunity to recover its allowed revenue through the usual market mechanics, therefore a surcharge on suppliers should be variable and would have to be based on what the project company was under/over recovered from suppliers in the previous period.

121. The consultation document highlights there is a decision to be made as to whether the deduction from the licensee's allowed revenue entitlement to reflect the revenue which it would expect to receive if its output was sold in the wholesale electricity market at a specified reference price (presumably derived from a basket of indices) should be based on generation (MWh) output or on availability or some other measure. Ultimately, the lower the deduction, the higher the burden which will be borne by electricity consumers or taxpayers.

122. This raises an important question as to the appropriate level of risk sharing between the consumer and taxpayer. For instance, if it is assumed that the deduction is based on output and a law is passed which results in a reduction in output (e.g. a mandatory requirement to shut nuclear power stations for x days per year to undergo safety inspections), should the taxpayer or the consumer fund the loss of generation revenue?

123. Another significant point of debate that must be resolved in applying the RAB model is uncertainty of the future nature of the energy supply mix and impact on nuclear revenues. If a large scale solar or off-shore wind asset proved to be successful and was cheaper than nuclear, then more of the allowed revenue would need to be recovered as a surcharge on suppliers for new nuclear than through market mechanisms. This could result in an issue in terms of the public legitimacy of nuclear and the affordability of customer energy bills.

QUESTION 6: DO YOU HAVE VIEWS ON OUR PROPOSED APPROACH TO ASSESSING A NEW NUCLEAR PROJECT UNDER A NUCLEAR RAB MODEL AND DETERMINING WHETHER IT IS VALUE FOR MONEY FOR CONSUMERS AND TAXPAYERS?

124. When evaluating the costs of a new nuclear project it is essential that the Social Value created by the project is considered with equal importance to commercial factors. The NIC has been looking into this area.[6]

125. Nuclear projects should not be procured solely on a lowest cost basis; trying to do so could lead to greater cost overruns putting investors and consumers at risk. Longer term, this approach could undermine the potential to use a RAB model more widely on future infrastructure projects. A lowest cost solution might miss important benefits that a higher cost solution would deliver, resulting in societal net benefits, and the opportunity for cost optimisation across the system or solutions which may not be achieved if only the costs of a single project are examined.

126. The need for bid evaluation frameworks to include non-financial criteria is, of course, far from being new to the nuclear sector where safety is the overriding consideration. Major infrastructure projects in the UK (e.g. the London 2012 Olympics, Crossrail and TTT) have developed a good track record of awarding contracts based on a combination of financial and non-financial criteria. Best practice, in this respect, is to award no more than 30-40% of the evaluation points for price. This is a good starting point for developing a suitable VfM framework for new nuclear investments, which would include matters such ESG.

127. The RAB model should be set up for success from the outset by adopting a suitable baseline, and balancing risks and rewards fairly between stakeholders in the project.

128. Major infrastructure projects have a unique opportunity to start afresh with respect to setting social objectives of the delivery body and the role that the RAB could play in meeting these objectives.

129. The governance of the RAB company should reflect the Social Value that could be unlocked by the project, as well as the underlying support from Government and consumers that makes the project investable. Other reports from The Infrastructure Forum describe the need for future infrastructure companies to update their governance to reflect their custody of what others consider 'public assets'.[7]

130. TIF's Procurement Working Group has made a series of recommendations to support the sustainable procurement of UK infrastructure which will require a clearer

[6] See: National Infrastructure Commission, Evaluating the Performance of Private Financing and Traditional Procurement, July 2019.
[7] See: Paul A. T. Davies, Alternative Models for Funding and Financing Infrastructure, November 2017; Paul A. T. Davies, Private Finance: Press Reset, 2018.

framework for measuring Social Value, as well as a broader cultural shift away from procuring at lowest cost. These recommendations include:[8]

a. Introduction of a **Pledged Projects List** to provide greater certainty for investors and contractors on those infrastructure projects that are ready to be procured;

b. Developing a **'Contract Footprint' framework** to monitor all Government infrastructure projects to manage supply chain exposure, as well as cost overruns and delays;

c. Use an **economically and socially sustainable definition of VfM**;

d. Develop a **Cabinet Office Procurement Team** to support project procurement across Government and provide continuity in the delivery process.

131. These recommendations will be particularly valuable in the successful development and delivery of a new nuclear programme in the UK, ensuring that the assets are procured sustainably and that mechanisms are in place to make pragmatic trade-offs in the event of cost overrun or delay to the project.

132. Competition is not the only driver of VfM. Competing the WACC – both in respect of debt and equity – achieves VfM in financing the project which, when deployed in conjunction with a robust incentives framework (including through the supply chain) to ensure efficient delivery, should deliver overall VfM on the project. It is the combination of both that is key to securing VfM.

133. The literature on VfM is extensive and beyond summary here. Nonetheless, it is worth highlighting one aspect of the TTT model which appears relevant to a new nuclear build, and this concerns the procurement and contracting strategies for the main works contracts and the related incentivised risk management regime within TTT's licence. These were collectively designed in such a way as to satisfy the key stakeholders (Thames Water, Ofwat, DEFRA and HMT) that costs incurred under this framework were *de facto* value for money which, crucially, avoided the need for (and risk of) retrospection.

134. Incentivised risk management is also more likely to deliver VfM than pre-priced risk transfer *per se*, not least because fixed prices are only as valuable as the balance sheets that underpin them.

135. Still, infrastructure procurement is an area where new models and approaches may create even more effective supply chains, albeit at the price of the asset developer flowing down risk to contractors using traditional risk allocation.

[8] The Infrastructure Forum's Procurement Working Group, Sustainable Procurement: A vision for UK infrastructure, 2019, pp.2-3.

136. Consumer interests should continue to be at the heart of regulation and the purpose of delivering infrastructure. Promoting competition in the right areas and balancing all stakeholder interests could offer a more sustainable and efficient approach to realising best value for money.

137. Where competition is a relevant and available driver of VfM, care needs to be taken with bid evaluation criteria to ensure that the right combination is being procured of: cost, quality, approach to safety, risk management, commitment to ESG best practice and partnership behaviours.