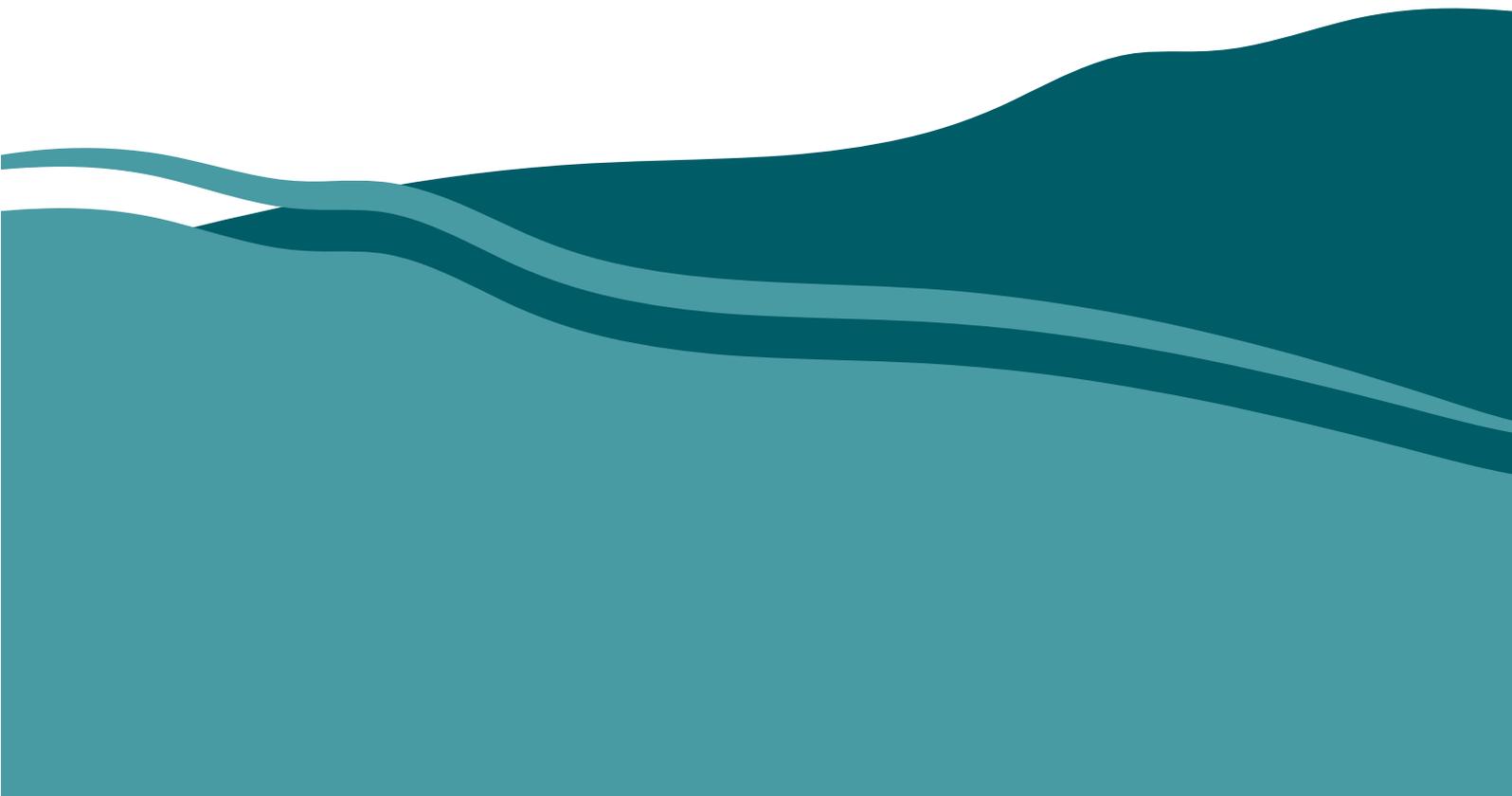




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Recent Developments in the UK's Nuclear Programme



Introduction

This article explores the current outlook for the UK's nuclear industry in the light of two recent and significant developments.

Firstly, we look at a recent Consultation launched by the UK Government which considers a new approach to financing nuclear new build.

Secondly, we discuss the potential ramifications of a recent announcement on funding for advanced nuclear technologies and its impact on the UK's fledgling Small Modular Reactor (SMR) programme.

Even though nuclear currently occupies first place in terms of sources of UK clean electricity generation,¹ significant questions remain about the future of the industry.² If the tendency is to look to a more secure and reliable energy baseload, but with increased capacity demands, will nuclear be able to respond to those demands?

Consultation on the Regulated Asset Base (RAB) Financing Model

The UK Government has recently launched its much-anticipated consultation on the Regulated Asset Base (RAB) financing model.³ This model, used previously in other infrastructure projects (see further below), has ambitious aims to make new nuclear projects affordable and attractive to private investors whilst limiting the exposure of taxpayers and consumers.

Although many energy experts feel that building new nuclear capacity is essential to achieving the UK's ambitious climate change targets⁴, it is worth a reminder that within the last 12 months two major UK nuclear projects have ground to a halt. Firstly, Toshiba's Moorside project was scrapped⁵ and this was followed by Hitachi's decision to suspend its Wylfa project.⁶ In both cases, the dominant issue was the enormous up-front funding requirements for nuclear new build projects. More specifically, nuclear project costs are dominated by the single issue of the cost of capital.

As a result, the only live nuclear new build project in the UK at present is EDF's Hinkley Point C. This project is running significantly over schedule despite having the added benefit of being developed by a state backed

¹ At 19.5% according to the Digest of UK Energy Statistics (DUKES) for 2018 published by BEIS in July 2019 at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819511/UK_Energy_in_Brief_2019.pdf

² See also in this respect a recent article from Andrew Renton, Castletown Law, at: <https://www.castletownlaw.com/wp-content/uploads/2019/09/001-19-A-New-Beginning-for-the-Nuclear-Industry-28-Aug-19.pdf>

³ See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819214/rab-model-for-nuclear-consultation.pdf

⁴ The United Kingdom recently became the first major economy to legislate for a target of net zero greenhouse gas emissions by 2050-see <https://www.gov.uk/government/news/pm-theresa-may-we-will-end-uk-contribution-to-climate-change-by-2050>

⁵ <http://www.world-nuclear-news.org/Articles/Toshiba-decides-to-scrap-NuGens-Moorside-project>

⁶ <https://www.horizonnuclearpower.com/news-and-events/news/news-details/568>

utility company. All this at a time when all except one of the UK's existing nuclear power stations are due to come offline by the mid-2030s.

On the basis that the UK government is supportive of further nuclear power station projects and given the government's stated intention to keep such projects off the government balance sheet and the perceived failures behind the Hinkley-style Contract for Difference (CfD) approach,⁷ the RAB model represents an alternative approach.

How Does the RAB Model Work in Practice?

In simple terms an RAB model is a type of economic regulation typically used in the UK for monopoly infrastructure assets (such as water and rail). The chosen company receives a licence from an economic regulator, which grants it the right to charge a regulated price to users in exchange for the provision of the relevant infrastructure. The charge is set by an independent regulator who holds the company to account to ensure that any expenditure is consistent with the interest of users. In the case of nuclear, suppliers would be charged as users of the electricity system and would be able to pass these costs through electricity bills onto their consumers, who also use the electricity system.

Energy Companies would manage the infrastructure project, taking ownership of the assets and operating costs. The theory is that this would drive efficiency when compared to the traditional procurement model approach. In return they would be able to raise revenue and also be offered government subsidies.⁸

The advantage for private investors is that it guarantees a longer rate of return to the current model (where returns only kick in once the power station starts generating electricity), as the RAB could be used to recover the costs of construction. This reduces the risk on investment for capital intensive projects and particularly the construction costs of power plants.

For customers, the UK Government view is that in principle they can expect a more reliable power supply and a better-quality service.

The Consultation identifies that an RAB model for new nuclear projects would need to have the following key features:

- a) a Government Support Package (GSP) for investors and consumers to provide protection against specific remote and low probability but high impact risk events (GSP);⁹
- b) a new Economic Regulatory Regime (ERR) to establish an equitable sharing of costs and risks between consumers and investors;
- c) an economic regulator (the 'Regulator') to operate the ERR; and
- d) a route for funds to be raised from energy suppliers, with the amount set through the ERR, during both construction and operational phases (known as the 'Revenue Stream').

⁷ See in this respect the NAO's criticism of the Hinkley C project at: <https://www.nao.org.uk/wp-content/uploads/2017/06/Hinkley-Point-C.pdf>

⁸ In a post Brexit world, it is no doubt envisaged that the UK is likely to have more flexibility in this respect, freed from the shackles of EU State aid rules although the CMA may well still be interested.

⁹ State aid clearance (whether from the European Commission or the CMA) is likely to be required for the GSP

How Does the RAB Model Work in Practice? Contd.

The Consultation provides more substance on each of these features.

In relation to the GSP, the Government recognises that there are certain risks in new build nuclear projects, including cost overrun as well as uninsurable and political risks. In relation to cost overrun a funding cap would be set, based on substantial project due diligence. It is proposed that if the funding cap were breached, the Government could step in to provide the finance itself or alternatively choose to discontinue the project.

Under the proposed ERR, a licence would be granted to a project company entitling it to charge nuclear RAB payments in exchange for performing its functions, which in essence would include the construction and operation of a nuclear plant. The amount of "Allowed Revenue" would be determined by the Regulator, and this would effectively govern the way in which risk would be shared between investors and users of the electricity system.

The Allowed Revenue would be expected to be based on a set of 'building blocks' which would enable the developer to recover its costs while constructing (the values would have to be approved by the Regulator). It would also generate in a shorter period of time a return on capital to finance further costs.

One such building block is the 'Funded Decommissioning Programme' (FDP), which would make provision for the decommissioning and waste management costs associated with a new nuclear project.

The regulated return to investors is based on the value of the "investment" together with the weighted average cost of capital (i.e. the combined rate of return on equity and debt), while the operating costs are recouped on a pay-as-you-go basis and therefore, and importantly for investors, on a regular basis, and during the construction phase. This would: a) enable the project to attract the capital needed and b) reduce the overall cost burden to suppliers and their consumers by reducing the total amount of finance required to be raised (by avoiding the compounding of interest and equity returns).

However, returns to shareholders would likely be capped during construction to incentivise project performance.

The Regulator would be responsible for economically regulating new nuclear projects. Several regulatory functions would interface in the operation of a nuclear RAB model, including environmental, safety and security regulation as well as the economic regulation.

The Regulator would work with the Environment Agency and the Office for Nuclear Regulation to ensure that safety and environmental protection were paramount in decision making. As no such entity currently exists, the proposal is to create a new body or alternatively give an existing entity these additional responsibilities. There is a question as to whether it makes sense to combine safety and economic regulation, as happened in the railways. On that basis OFGEM might be the more appropriate choice.

Whilst the regulatory regime would set the amount of Allowed Revenue that a new nuclear project could charge, a nuclear RAB model would need a route for funding to flow from suppliers to the project company. There are

How Does the RAB Model Work in Practice? Contd.

important differences between existing revenue streams and the characteristics of a nuclear RAB model that could support a bespoke revenue stream: a) under a nuclear RAB model, revenue would likely be channelled to the project company in both the construction and operational period; and b) a nuclear RAB model would entail a variable £/MWh price (calculated by reference to the Allowed Revenue from time to time) allowing for the revenue stream to be adjusted by the Regulator as circumstances change. This is markedly different to the current model of a CFD where the “strike price” is fixed.

Comment

The concepts proposed in the RAB Consultation at first sight seem relatively straightforward. However, the model is not without its risks and draw backs.

This model has never been applied to a project as expensive as a nuclear new build project.

Although the RAB model has been used for single asset construction projects before, including the Terminal 5 project at Heathrow (£4.3 billion in 2008) and the Thames Tideway Tunnel (TTT) sewerage project (£4.2 billion in 2016), neither of those projects were as complex as a new build nuclear project and neither involved the creation of new assets but rather the extension of existing assets.

Then there is the question, recognised in the Consultation itself, of cost overruns, in reality not uncommon in nuclear projects of this scale and complexity. Despite the application of robust due diligence measures, developers in practice would still have the freedom to spend what they like on construction, with consumers being locked into the costs regardless. The role of the Regulator is key here to ensure appropriate limits on what is allowed to be included within the RAB. Despite the concept of a funding cap there is still the risk of projects being half-finished/abandoned if a Government is not prepared to consider continuing with a project.

Where previously construction risks were all taken by developers, now effectively that risk would be all transferred to customers, with the promise of benefits to come in the future, by way of reasonable pricing and reliable electricity. A promise that was made to consumers in the water and rail industries but which has not been borne out in practice.

The role of the new Regulator, at present still to be fleshed out, is clearly key to ensuring that proper regulation exists. Indeed, what does the regulatory framework look like and what enforcement powers would the Regulator have?

An intermediary body would have to be established to manage revenue flows from electricity suppliers to project companies.

The terms of the GSP would need further development and state aid clearance is likely to be needed, either from the European Commission or the Competition and Markets Authority (CMA).

Comment contd.

There still remains the question as to whether investors are in practice likely to see such projects as being attractive when compared to the potential for better returns on projects of a “non-regulated” type.

Despite anticipated criticisms, this suggested approach is likely to be broadly welcomed by potential new build operators. It presents a new way of managing the enormous upfront costs that such operators face, protecting their investors from high impact costs and establishing a return for investors before generation. After the closure and suspension of two major nuclear projects in the UK, clearly there is a need to review and introduce a new model tackling the financial challenges of nuclear build. Critics will argue that a shift in risk does not necessarily equate to a sounder policy approach, but that in fact it places a huge financial burden more firmly on the shoulders of UK taxpayers in the long term.

A shot in the arm for the UK SMR Programme

Another recent development, and of no less significance, has been the announcement of an update regarding funding for advanced nuclear technologies.

The UK Government’s support for Nuclear New Build’s smaller cousin, the Small Modular Reactor (SMR) programme, recently appeared to have stalled to the extent that prospective developers have been looking increasingly frustrated at the prospects of getting their projects up and running.

So, the recent announcement of an update regarding funding for advanced nuclear technologies is likely to be welcomed.

The Rolls-Royce consortium SMR programme is to receive additional Government funding and the Consortium’s proposal has been accepted into Wave 3 of the Industrial Strategy Challenge Fund. The Government has said that they are looking to make an initial award of up to £18 million to the Rolls-Royce-led consortium in early Autumn 2019. This is subject to final decisions to invest, including business case and other approvals, and confirmation that this consortium represents the best option for pursuing this technology.

This money is in addition to the £45 million to be invested by the UK Government in the second phase of the Advanced Modular Reactor programme, with other project bids currently under consideration.

It is also worth noting that the Office for Nuclear Regulation (ONR) and the Environment Agency (EA) are shortly due to publish their updated guidance for developers of SMRs on their Generic Design Assessment (GDA), the process through which reactor designs are scrutinised by the regulators prior to further necessary regulatory steps, to enable subsequent deployment.

Comment

This is a very timely announcement and positive in many respects. Export potential is thought to be high, based partly on the concept that designs that successfully pass through the UK government's rigid regulatory process will then fare well in a competitive market. What remains to be seen is whether the ONR and EA will consider the extent to which a more stream-lined and tailored GDA Process can be applied to SMR's, bearing in mind that the current GDA process for nuclear new build is a 4-stage and typically a 4 year process. For some time, experts have been bemoaning the failure of UK government to home in on a fewer number of more credible designs and this announcement is again a step in the right direction.

In Conclusion

For both large-scale and small nuclear, these are potentially exciting times with a new approach mooted for large nuclear and an injection of much-needed funding for the UK's SMR programme. Despite anticipated criticism, the UK nuclear industry will regard both developments as providing much-needed lifelines.

Those with an interest in the RAB Consultation are invited to respond to the questions posed by the due deadline of 14 October 2019 and if assistance is required, please do not hesitate to contact our Simon Stuttaford or Andrew Renton.



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