

DELIVERING NET ZERO

RAB to the rescue:

The UK Government's proposal for a revenue support mechanism to fund new nuclear power plants

The UK Government recently announced three proposed policy options to establish a revenue support mechanism under the Nuclear Energy (Financing) Act 2022 (the “Act”). Following our previous briefing, which outlined the legal framework for the new regulated asset base (“RAB”) regime, we analyse the Government’s consultation on how the proposed funding models will work in practice. In particular, we consider how the Government’s preferred approach compares to its previous funding model: the renewables Contracts for Difference (“CfD”) regime.

Last week, the House of Lords’ Economic Affairs Committee findings stated that the UK’s energy security is “vulnerable”, with gaps between the Government’s plans for domestic energy production and its delivery. It is clear that developing additional nuclear power capacity is crucial to the Government’s energy security and net zero strategies. Indeed, the Climate Change Committee’s [projections](#) indicate that decarbonising the UK energy sector, and achieving the UK’s 2050 net zero target, will rely on the development of new nuclear power plants for electricity generation.

The UK generates around 16% of its electricity through nuclear power, but the Government intends to expand this to 25% of the UK’s projected demand (24GW) by 2050. However, with seven of the country’s eight existing plants scheduled for decommissioning by 2030, and only one plant (Hinkley Point C) currently under construction, it will not be easy for the Government to achieve this objective and its pledge to build eight more units in the next eight years currently seems ambitious.

Last week, though, the Government granted a nuclear site licence approval for Sizewell C to construct and operate its new £20 billion plant in Suffolk. It is expected that Sizewell C will benefit from the nuclear RAB model.

It is notable that the Act does not restrict the nuclear RAB model to large-scale nuclear construction projects, such as Sizewell C. If the model proves successful, it may be the case that construction of small modular reactors could also benefit from it.

A refresher on RAB

In our November 2021 briefing, we outlined the key challenges commonly faced by new nuclear projects: lengthy and uncertain construction periods (often culminating in delays and cost overruns) and high capital costs. These challenges contribute to difficulties in attracting private investment and they have influenced the recent cancellations of two projects: [Hitachi’s Wylfa Newydd power station](#) and [Toshiba’s Moorside power station](#). Private investors willing to accept such elevated risks are likely to demand higher returns to reflect their greater costs of capital. For this reason, a number of nuclear projects around the world are funded – at least in part – by sovereign investors, which are typically more able to take on elevated long-term risks at lower rates of return than most other private investors.

The nuclear RAB model is designed to address some of these issues. RAB models typically grant rights for specified companies to charge utility users regulated prices in exchange for constructing and operating certain infrastructure assets. Under the UK’s nuclear RAB model, developers and investors are given secure returns on investment during a nuclear project’s construction, commissioning and operation. Crucially, they can earn revenues during the project’s construction phase, to contribute towards building costs, before the plant even begins generating electricity.

As outlined in Figure 1, any shortfall between the nuclear companies’ forecast market revenue (“FMR”) and “allowed revenue” can be recovered through RAB payments, in order to secure revenues.

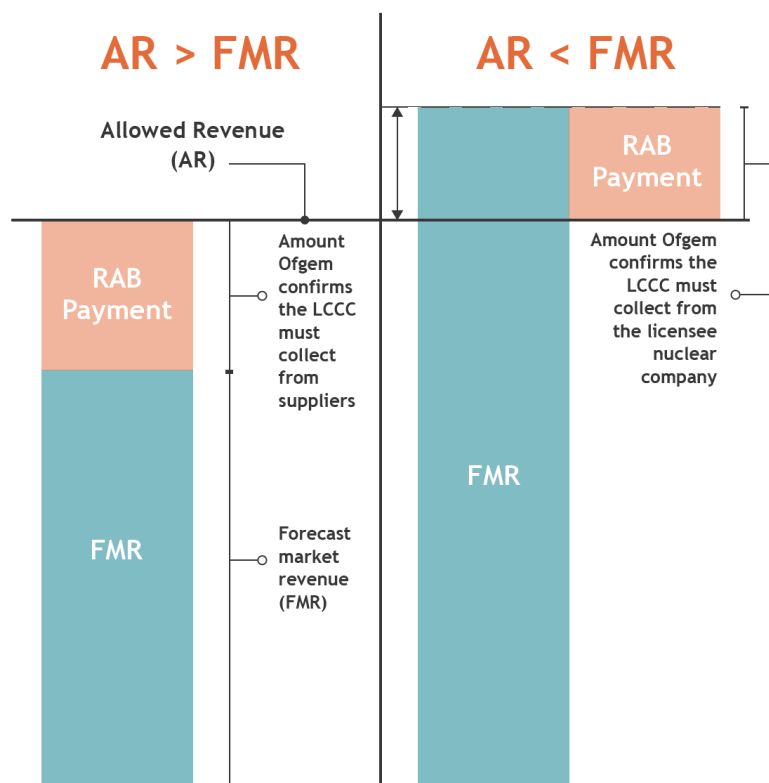


Figure 1: RAB payment mechanisms during the operations phase.

In theory, this offers greater investment certainty, which should attract investors and reduce the costs of private finance, thereby lowering overall consumer energy prices. According to the Government, the lower cost of financing a nuclear project is expected to result in savings for consumers of at least £30 billion on each project.

A key design objective of the Government’s proposed nuclear RAB revenue support mechanism is to transfer payments efficiently from suppliers and consumers to eligible nuclear companies.

Proposed nuclear RAB revenue regulation policies

The Government envisages that ensuring the new RAB revenue mechanism’s continuity with the existing renewables CfD regime will assist developers and investors that are familiar with the latter regime. As such, the three nuclear RAB revenue support options proposed by the Government seek to build on, and modify, the existing renewables CfD regime, rather than introducing a completely new model. The Government’s proposed options are summarised below.

Option 1: “Do minimum”

The first option proposed by the Government is to introduce a minimum set of obligations on electricity suppliers to make RAB payments to nuclear companies, through the Low Carbon Contracts Company (“LCCC”), beginning from a

nuclear project’s construction phase. This is a vital part of the nuclear RAB model.

Option 2: “Improved”

The second option is the Government’s preferred model. It is intended to improve some elements of the CfD model, which is adjusted to align with the specific context in which the nuclear sector operates. This includes, for example, shortening notice periods so that Ofgem can receive more timely information – such as projected revenues – to accurately calculate RAB payments.

The proposal is intended to provide legal certainty to nuclear companies and investors that the LCCC can meet its RAB payment obligations. For example, the LCCC may compel other suppliers to cover a defaulting supplier’s RAB payments to the LCCC. This option also gives the LCCC power to request that suppliers provide collateral on their payment obligations.

The proposal helps to ensure that revenue flows to licensed nuclear companies remain uninterrupted. To illustrate, the LCCC must notify the Secretary of State if it cannot carry out its duties, so that a replacement institution can be assigned with minimal disruption. In the section below, we offer a more detailed comparison of the central features of this option against the CfD model.

Option 3: “Going further”

The third option includes all measures proposed by the second option, but it also prescribes additional details about payment mechanisms and information-sharing between nuclear companies and regulators. This option

also confers on the LCCC powers to carry out payment model calculations, independent of Ofgem.

The Government does not see this as its preferred option. It envisages more bespoke information-sharing agreements, negotiated on a project-by-project basis, and is averse to a one-size-fits-all approach which could be inefficient. A second concern is that this option could create confusion. Under the proposals, both Ofgem and the LCCC would have the power to carry out payment model calculations: the Government is concerned that, if their sums diverge, this could create confusion and undermine the objective of providing more reliable revenue support.

Similarities with the existing renewables CfD regime

Currently, renewable energy projects in the UK are funded through a renewables CfD regime. Following a “sealed bid” auction process, held by the Government, eligible renewable energy generators are selected to enter into a contract with the LCCC, which is a Government-owned private company. Developers are then paid a flat rate for the electricity they produce over a 15-year period, which represents the difference between the project’s “strike price” (which reflects the cost of investing in the relevant renewable assets) and a floating “reference price” (which reflects the market price for electricity in the domestic electricity market at a given point in time).

Payment mechanisms

The Government’s preferred Option 2 proposal shares many similarities with the renewables CfD regime. As with the renewables CfD regime, under the nuclear RAB model, the LCCC has the power to enter into revenue collection contracts with licensed nuclear companies. Acting as an intermediary, the LCCC will receive payments from electricity suppliers and will, in turn, make RAB payments to licensed nuclear companies.

Option 2 allows nuclear companies to receive various levies and payments, which replicate those payable under the renewables CfD regime. Firstly, “interim levies” are paid by electricity suppliers, which the LCCC invoices daily, in proportion to their estimated share of the total daily UK electricity supply. Like the CfD regime, the LCCC can adjust for underpayment or overpayment, if required, using data from electricity suppliers. Secondly, “operational costs levies” are imposed on suppliers, in proportion to their market share, to fund the LCCC’s operational costs. Thirdly, electricity suppliers are required to make “reserve payments” on a quarterly basis. The LCCC calculates the amounts it needs to collect from suppliers to have a 95% chance of meeting its RAB payment obligations to licensed nuclear companies. The rationale is to minimise delays and

protect licensed nuclear companies from supplier payment shortfalls. Crucially, like the CfD model, electricity suppliers under the nuclear RAB model may pass on any such RAB payment-related costs to electricity consumers.

Both the renewables CfD regime and the Option 2 proposal also provide comparable top-up support and repayment mechanisms. Under the CfD regime, if the reference price falls below the strike price, the electricity generator receives a top-up payment (funded through a levy on electricity suppliers) to the level of the strike price, which is calculated and paid by the LCCC. Conversely, if the reference price is above the strike price, the electricity generator must pay back the difference.

Similarly, under the nuclear RAB model, once the nuclear power plant is generating electricity, the licensed nuclear company will be entitled to a top-up payment from the LCCC – funded by electricity suppliers – if the company’s FMR from energy sales is less than its allowed revenue, as shown in Figure 1. However, if the nuclear company’s actual market revenue exceeds its allowed revenue, the licensed nuclear company must pay the difference back to the LCCC.

Energy-intensive industry and renewable energy exemptions

A further point of overlap between the renewables CfD regime and the Option 2 proposal is the exemption of certain electricity generators and customers from payment obligations. More specifically, the Government intends to exempt renewable energy generators (though not necessarily carbon neutral generators) from making RAB payments. It also intends to exempt energy-intensive industry consumers in order to limit their “competitive disadvantage” in international markets, caused by higher electricity costs.

Nonetheless, the Government rejected proposals to exempt vulnerable household consumers – such as those receiving universal credit – from RAB payments. Its stated rationale was that this might provide disincentives for electricity suppliers from engaging in “commercially beneficial practices”, such as offering payment plans and loyalty benefits to consumers.

Differences from the CfD regime

The Government has recognised the need to tailor the funding support regime to meet the specific requirements of nuclear projects. Unlike the typical CfD regime, where the terms are generally standardised,¹ revenue collection contracts under the nuclear RAB model are bespoke agreements. The expectation is that each revenue collection contract will be individually negotiated between the licensed nuclear company and the Secretary of State.

¹ The only notable exception to this is the CfD for the development of two nuclear reactors at Hinkley Point C, which was a CfD negotiated on a bespoke basis.

This is designed to ensure consistency with the conditions of that company's licence.

Rather than prescribing the content of the contract, it is envisaged that the regulations applicable to the Option 2 proposal will provide a list of matters (such as the timing of payments, the assignment or transfer of obligations, as well as information sharing between the licenced nuclear company and the LCCC) that must be covered by the contract. Parties are given flexibility to negotiate the specific terms.

In relation to calculating payments, the strike price under the CfD regime is calculated by the LCCC. This is based on the amount of electricity generated daily, which will fluctuate. By contrast, under the proposed nuclear RAB model, Ofgem (rather than the LCCC) will regularly review and set the amount of the licensed nuclear company's allowed revenue. A nuclear company's allowed revenue may comprise a combination of **components**, and the exact composition of these components will depend on each nuclear project's stage of development:

- During the **construction phase**, Ofgem will decide the allowed revenue based on the conditions in the licensed nuclear company's licence, determined primarily by the nuclear project's financing costs.
- During the **operations phase**, Ofgem will decide the allowed revenue, based on the plant's operational costs.

Other uses of the RAB model

Optimising risk allocation and value

The nuclear RAB model is a first-of-a-kind measure to be employed for nuclear energy in the UK. Previous uses of the RAB model – in the UK and internationally – indicate that it should effectively optimise risk, remunerate investors for delivering long-life assets, and facilitate the raising of low-cost finance.

Governments have used variants of the RAB model to fund similarly complex infrastructure projects. For example, certain EU countries have used RAB models in the energy transmission and transport sectors. Australia, Brazil, China and New Zealand have also used RAB models to fund, or support, public infrastructure projects. Closer to home, the RAB model was used in the UK to fund certain infrastructure

projects, such as the construction of Heathrow's Terminal 5 and the Thames Tideway Tunnel (as described in more detail below).

However, in relation to the nuclear energy sector, it is interesting to note that the RAB model has not previously been deployed elsewhere. For example, the UK's proposed approach is markedly different to the current approach in France, where nuclear energy provides around 70% of its electricity. The French Government has recently announced the proposed full nationalisation of EDF Energy, adopting a more centralised model that favours state funding over private investment.

The Thames Tideway Tunnel

RAB models were initially deployed for vertically-integrated monopoly industries: specifically, in the water, sewerage, natural gas, and telecommunications sectors. For instance, the Thames Tideway Tunnel ("TTT") – a £4.2 billion project to construct a new sewer in London by 2025 – used a similar RAB-based funding model. For the TTT project, RAB offered guaranteed positive returns, even if construction costs were to exceed threshold levels.

These conditions were particularly attractive for institutional investors – such as pension funds, retail investors, and equity yield funds – seeking steady, long-term and low-risk returns. The TTT's investors provided £1.275 billion in equity, for a pre-agreed 2.5% real rate of return (which was below Ofwat's 3.3% estimate). This remains a record-low cost of capital for any UK-regulated infrastructure asset. Alternatively, investors would have demanded much higher returns in circumstances where no construction risk was allocated to consumers.

Conclusion

The Government's preferred Option 2 seeks to improve certain features of the CfD model and to tailor the funding support regime to the specifics of the nuclear industry. It will be interesting to see whether respondents to the consultation agree with the Government's proposal, given the importance of bringing forward investment in nuclear in the UK. The consultation closes on 9 August 2022 and we expect revenue support regulations by early 2023.

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