

## DELIVERING NET ZERO

# A NEW GENERATION OF POWER GENERATION - UK GOVERNMENT LEGISLATES FOR RAB MODEL TO FUND NUCLEAR NEW BUILDS

On 26 October 2021, the UK Government [published](#) the anticipated Nuclear Energy (Financing) Bill, which will make the regulated asset base (RAB) funding model available for nuclear power projects.

This is a key step towards the UK Government honouring its commitment, set out in the [Energy White Paper](#) published in December 2020, to bring at least one large-scale nuclear project to the Final Investment Decision (FID) stage by the end of the current Parliament.

Nuclear energy will play a key role in the UK Government's agenda to achieve net-zero emissions by 2050. It is part of the green energy mix - alongside renewable energy sources such as solar, wind and hydro power - that the UK Government has pledged will generate 100% of Britain's electricity by 2035. An overview of the UK Net Zero Strategy announced on 19 October 2021 is available in [this client briefing](#).

The legislation announced last week is expected by the UK Government to attract a wide range of private investment into new nuclear projects, and to reduce the cost of financing them and the cost to consumers. It confirms the place for nuclear power in the next generation of power generation in the UK.

## 1. Changing nuclear landscape

Between 16-20% of the UK's current electricity supply comes from 13 civil nuclear reactors, situated across 8 nuclear power plants. All but one of these reactors (at Sizewell B) are due to go offline by 2030, and only one new nuclear new build

project is currently underway (Hinkley Point C, due to come online in 2026).

Attempts to build new nuclear power stations in recent years have failed due to a lack of clear funding support. In 2019, Hitachi suspended plans to develop a £20 billion nuclear power plant in Wales (Wylfa Newydd)<sup>1</sup> after failing to reach a financial agreement with the UK Government.<sup>2</sup> The year before, Toshiba also scrapped plans to build a new nuclear power plant in Cumbria, citing its inability to find a buyer and ongoing costs.<sup>3</sup> Progress on EDF's projects to build an identical power station to Hinkley Point C in East Suffolk (Sizewell C) and another new nuclear power plant in Essex (Bradwell B) has also stalled whilst the Government has considered (and formally consulted on)<sup>4</sup> the most appropriate funding model for large-scale nuclear projects.

The Department for Business, Energy and Industrial Strategy (BEIS) announced in June 2018 that the UK Government would review the viability of the RAB model for large-scale nuclear projects. Concerns had been raised by industry stakeholders that the contract for difference (CfD) model used for Hinkley Point C is no longer fit for purpose. In 2013, EDF struck a deal with the UK Government for a 35-year CfD that guaranteed a price of £92.50 per megawatt hour for electricity produced at Hinkley Point C.<sup>5</sup> Investors do not earn a return during the construction phase, and whilst the project might expect to earn more under the CfD than in the

<sup>1</sup> Statement on suspension of work on the=Wylfa Newydd=nuclear project - GOV.UK ([www.gov.uk](http://www.gov.uk))

<sup>2</sup> UK's ageing reactors bring nuclear question to a head | Financial Times ([ft.com](http://ft.com))

<sup>3</sup> UK nuclear power station plans scrapped as Toshiba pulls out | Energy industry | The Guardian

<sup>4</sup> Regulated Asset Base (RAB) model for nuclear - GOV.UK ([www.gov.uk](http://www.gov.uk))

<sup>5</sup> Initial agreement reached on new nuclear power station at Hinkley - GOV.UK ([www.gov.uk](http://www.gov.uk))

competitive electricity market once it begins generating electricity,<sup>6</sup> it has left EDF and investors on the hook for significant overrun costs (estimated to be at least £5 billion).<sup>7</sup>

## 2. Funding new nuclear with the RAB model

The RAB funding model is structured to incentivise private investment in public projects with significant upfront capital expenditure, a long construction period and a long asset life, by providing a secure return on investment for developers and other investors.

It has previously been used in the UK for the construction of large monopoly infrastructure assets, including the £4.13 billion construction of the Thames Tideway Tunnel<sup>8</sup> and the £4.3 billion construction of Heathrow Terminal 5.<sup>9</sup>

The key element elements of a basic RAB model include:

- A Government support package to protect investors and consumers against specific, potentially high value but low-probability events (essentially, where they are not commercially insurable).
- An economic regulatory regime (ERR) which will detail the sharing of costs and risks in an ex-ante manner between investors and consumers via an allowed revenue (set by the ERR).
- A regulator who operates the ERR.
- A revenue stream from suppliers to the project company to fund the project.

Under the draft legislation for the nuclear sector, the Secretary of State will be able to designate a nuclear company that holds an electricity generation licence where the nuclear project is sufficiently advanced and likely to result in value for money. As part of the designation, the Secretary of State can modify the terms and conditions of the nuclear company's electricity generation licence to facilitate investment in the design, construction,

commissioning and operation of the nuclear project. This includes provisions for an allowed revenue to be charged to energy suppliers, to balance the costs and risks between investors and end consumers. Such allowed revenue can be charged during the construction phase and before the nuclear power plant comes online.

The draft legislation also gives the Secretary of State the power to make provisions in the modified licence for how the allowed revenue is to be calculated by the regulator. It is envisaged that the Gas and Electricity Markets Authority (OFGEM) will take on the role of regulator. Under the terms of the licence, the nuclear company will be able to appeal a decision of the regulator relating to the allowed revenue to the Competition and Markets Authority (CMA).

## 3. A popular approach?

Leaving aside the debate about the merits of investment in nuclear energy over other forms of low-carbon energy generation and energy storage solutions, the proposed application of the RAB model to new nuclear projects has been met with a mixed response.

A major criticism is that, under the RAB model, risk is passed onto the end consumer during the construction phase and in a manner that may not best incentivise developers to minimise the risk of cost overruns. Costs will be passed through to end consumer bills long before the nuclear power plant begins generating electricity. The UK Government has responded to this concern, stating that the RAB model will add "at most a few pounds a year to typical household energy bills during the early stages of construction and on average less than £1 per month during the full construction phase of the project".<sup>10</sup> Over the life of a nuclear project, the UK Government estimate that the lower cost of financing is expected to save consumers between £30 billion and £80 billion, compared with existing funding mechanisms.

Ultimately, the publication of the Nuclear Energy (Financing) Bill last week signals a step-change in

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<sup>6</sup> PUB\_RAB\_Model\_New\_Nuclear\_Power\_Plants\_A4\_0320.pdf (nera.com)

<sup>7</sup> Momentum Builds for UK Government to Self-Fund New Nuclear Energy Plants | Greentech Media

<sup>8</sup> New Tideway delay and cost increase revealed | Construction News

<sup>9</sup> Cost and commercial viability: literature review update (publishing.service.gov.uk)

<sup>10</sup> New finance model to cut cost of new nuclear power stations - GOV.UK (www.gov.uk)

the UK Government's support for the nuclear industry and the role of nuclear energy in its wider energy and environment related commitments. The UK Government believes that a key benefit of the RAB model is that it will attract a wider pool of private investors which will include British pension funds, insurers and other institutional investors, thereby enabling the UK to reduce its reliance on overseas investors in nuclear new build projects. China's state-owned nuclear energy company, China General Nuclear Power Group (CGN), currently has a 33% shareholding in Hinkley Point C, a 20% shareholding in the proposed Sizewell C nuclear power plant and is identified as a partner to EDF in the proposed Bradwell B power plant.

The Nuclear Energy (Financing) Bill is due to have its second hearing in the House of Commons on 3 November 2021.

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