



Department for  
Business, Energy  
& Industrial Strategy

# Nuclear RAB model

Statement on procedure and criteria for  
designation

April 2022



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## Ministerial Foreword



Nuclear power continues to be an important source of reliable low-carbon electricity, currently supplying around 16 per cent of our needs<sup>[1]</sup>. It is an energy-dense technology which provides large volumes of power from relatively little land area and can reduce system costs by providing stable and reliable power generation.

As set out in the British Energy Security Strategy, we are pursuing a significant acceleration in new nuclear capacity, with a long-term ambition to increase our deployment of civil nuclear power up to 24GW by 2050, around 25% of our projected 2050 electricity demand. Our immediate steps to realising this goal are to take one project to Final Investment Decision (FID) this Parliament, and two projects to FID in the next Parliament, including Small Modular Reactors. As with any Government decision, this will be subject to value for money, relevant approvals and technology readiness/maturity.

As noted in the Prime Minister's Ten Point Plan for a Green Industrial Revolution <sup>[2]</sup>, a large-scale nuclear power plant could support a peak of around 10,000 jobs during construction. We will remain open to further projects provided they can demonstrate clear value for money, especially if the nuclear industry demonstrates that it is able to reduce costs and deliver to time and budget.

To deliver on our ambition for the nuclear sector, it is essential that there is a sustainable funding model that can attract private finance at a cost that represents value for money to consumers and taxpayers.

The Government's Nuclear Energy (Financing) Act (NE(F)A) implements the Regulated Asset Base (RAB) model to encourage and facilitate investment in new nuclear projects.

This Statement sets out the procedure that the Secretary of State expects to follow in determining whether to exercise the power to designate a nuclear company under the legislation and the factors that he expects to take into account when assessing whether the designation criteria have been met, including whether designating that company for the purposes of the RAB model is likely to result in value for money (which will be assessed from a consumer and taxpayer point of view).

The UK has a proud nuclear heritage, as the home of the world's first commercial nuclear power station, which opened at Calder Hall in 1956. Since then, the UK's nuclear fleet has provided a firm baseload of power upon which we have built our resilient, clean energy system. Enabling use of the RAB model for nuclear, and the multiple other measures the Government

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<sup>[1]</sup> BEIS (2020), Energy Trends, table 5.1 <https://www.gov.uk/government/statistics/electricity-section-5-energy-trends> (viewed on April 2022)

<sup>[2]</sup> <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution> (viewed on April 2022)

is implementing to support new nuclear projects and advanced nuclear technologies, builds on this legacy to ensure we have a bright nuclear future, harnessing atomic energy alongside renewables to ensure a secure and stable, low-cost and low-carbon electricity system for generations to come.

**The Rt Hon Greg Hands MP**

Minister of State for Energy, Clean Growth and Climate Change

# 1: Introduction

## 1.1 Policy Context

In 2019, the UK became the first major economy in the world to pass laws to end its contribution to global warming by 2050. As stated in the Net Zero Strategy<sup>1</sup>, to achieve this, all our electricity will need to come from low-carbon sources by 2035, subject to security of supply.

Nuclear power provides a reliable source of low-carbon electricity. We are pursuing large-scale nuclear, whilst also looking to the future of nuclear power in the UK through further investment in Small Modular Reactors and Advanced Modular Reactors, with a view to deploying these technologies in the early 2030s.

The premise of the NE(F)A is to; facilitate investment in the design, construction, commissioning, and operation of new nuclear energy generation projects; support the delivery of Government commitments made in the 2020 Energy White Paper<sup>2</sup>, the Prime Minister's Ten Point Plan for a Green Industrial Revolution<sup>3</sup>; and contribute to the Government meeting its legally binding obligations to achieve net zero carbon emissions by 2050, as outlined in the 2021 Net Zero Strategy<sup>4</sup>.

## 1.2 Background

The Government consulted on a RAB funding model for new nuclear in July 2019 and published its response in December 2020, which confirmed its assessment that the model is a credible basis for financing large-scale nuclear projects. The NE(F)A implements the RAB model as an essential part of the actions being taken to encourage investment in new nuclear projects. This could apply to large-scale nuclear projects as well as small and advanced modular reactor projects, and in the future, fusion energy facilities. However, consideration would be given to how advanced technologies could be deployed.

RAB models have been applied to a wide range of network infrastructure assets, such as water, electricity transmission, telecommunication, rail, and gas. In 2015, a RAB model was successfully deployed to attract private investment into a single asset greenfield project: the Thames Tideway Tunnel (TTT). It was judged that Thames Water would be unable to raise the required finance using its own balance sheet without undermining its business and financial

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<sup>1</sup> <https://www.gov.uk/government/publications/net-zero-strategy> (viewed on April 2022)

<sup>2</sup> <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future> (viewed on April 2022)

<sup>3</sup> <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution> (viewed on April 2022)

<sup>4</sup> <https://www.gov.uk/government/publications/net-zero-strategy> (viewed on April 2022)

position. As such, to fund TTT, DEFRA, Ofwat, Infrastructure UK and Thames Water developed a RAB model that was modified for single asset construction projects.

New nuclear projects are expected to demonstrate similar characteristics to the TTT project. Therefore, in developing a potential nuclear RAB model, the Government has taken the model used for TTT, as a starting point, whilst recognising that new nuclear projects are significantly greater in scale and cost, and face unique challenges, which are different from, and would not have been relevant to TTT.

It should be noted that the key definitions used throughout this Statement, derived from the NE(F)A, Part 1, are:

- “Nuclear company” means a company that holds an electricity generation licence in respect of a nuclear energy generation project.
- References to a “designated” nuclear company are to a nuclear company in relation to which a designation under section 2(1) of the NE(F)A has effect.
- A nuclear company is a “relevant licensee nuclear company” if—
  - the company’s electricity generation licence contains modifications made under section 6(1) of the NE(F)A, and
  - the company is a party to a revenue collection contract.<sup>5</sup>
- “Electricity generation licence” means a licence under section 6(1)(a) of the Electricity Act 1989.

The NE(F)A enables the Secretary of State to designate a nuclear company to potentially benefit from a RAB model with respect to its proposed nuclear project, provided that certain criteria are satisfied. The Secretary of State is then empowered to modify the designated nuclear company’s electricity generation licence to amend and insert new conditions (and make modifications to the licence terms). These conditions, among other things, would permit the nuclear company to receive a regulated revenue in respect of its activities relating to the design, construction, commissioning, and operation of the nuclear project (including its activities in complying with any obligations under an approved funded decommissioning programme under the Energy Act 2008). The NE(F)A supports this by ensuring that the Gas and Electricity Markets Authority (GEMA - the Authority<sup>6</sup> (as the economic regulator)), has the information and powers that it needs to regulate a nuclear company benefitting from the RAB model.

The process whereby the Secretary of State designates a nuclear company is the first step for a nuclear company seeking to benefit from the RAB model, after which the company, where applicable (depending on the project), is expected to satisfy a number of additional stages. These stages could include procuring investment approvals, completion, acquisition of regulatory authorisations, adhering to government due diligence assessments before reaching

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<sup>5</sup> Revenue Collection Contract is defined in section 15 of the NE(F)A <https://bills.parliament.uk/bills/3057> (viewed on April 2022)

<sup>6</sup> Gas and Electricity Markets Authority <https://www.ofgem.gov.uk/> (viewed on April 2022)

the final investment decision (FID), and entering into a revenue collection contract, at which point the modifications to the company's licence would come into effect, thereby allowing the company to receive payments funded by consumers.

Under a nuclear RAB model, consumers would begin making payments (via their electricity suppliers) during the construction period of the relevant nuclear energy generation project. This means that the RAB model is expected to attract a wider range of investors who would usually only invest once a project becomes operational.

Structuring payments in this way could lower the cost of financing in two ways. Firstly, by eliminating significant compounding interest on capital invested to support construction costs over a considerable period and, secondly, by de-risking investment thereby making the project more appealing to a wider pool of capital market for both the equity and debt providers, giving rise to an overall lower cost of capital – the most significant cost driver for new nuclear projects.

It is expected that the RAB conditions would set the risk sharing framework for the project in question along the following lines:

- The licence would include a “base case forecast”, representing a robust estimate of the total expenditure required for completion of the project, including early years in the operational phase.
- Apart from a list of limited excluded project spend items, all capital expenditure incurred up to the base case forecast would be logged onto the RAB in accordance with the modified electricity generation licence, and investors would earn a return on such capital expenditure.
- The licence would also include a “financing cap” which would include a further contingency above the base case forecast for potential (but remote) cost overruns.
- A degree of potential construction overrun risk, beyond the base case forecast, would be shared with consumers and, in remote circumstances, taxpayers under the government support package, with a portion of cost overruns logged onto the RAB and funded by consumers and those that could not be logged onto the RAB would not receive a return.
- Investors would be required to finance the construction of the project up to the financing cap as set out in the nuclear company's modified licence. If the Secretary of State considered that the capital expenditure was likely to exceed the financing cap, the licensee could apply to the Secretary of State for an adjustment to the calculation of its allowed revenue.

A nuclear company's allowed revenue during the operational phase of a project would be subject to periodic reviews by the Authority (to occur every five years, for example) where the Authority would determine the allowed revenue according to defined building blocks including operational expenditure and return on capital.



The RAB model has the potential to reduce the financing cost for new nuclear projects, thereby reducing consumer bills, while still preserving incentives for the private sector to complete nuclear projects to time and budget.

It is important for the Secretary of State to assess a project thoroughly prior to designating a nuclear company for the purposes of the nuclear RAB model, given the central role that consumers play in funding the project. The RAB model would give a nuclear company access to a predictable revenue stream throughout the life of the modified licence. A nuclear company can therefore only be designated if the Secretary of State is of the opinion that the development of the relevant project is sufficiently advanced to justify designation and that designation is likely to result in value for money. This is a statutory requirement under section 2(3) of the NE(F)A.

### 1.3 Purpose of the Designation Statement

Under section 3(1) of the NE(F)A the Secretary of State must publish a statement setting out:

- (a) the procedure that the Secretary of State expects to follow in determining whether to exercise the designation power under section 2(1), and
- (b) how the Secretary of State expects to determine whether the designation criteria mentioned in section 2(3) are met.

This Statement fulfils this requirement of the NE(F)A, including by providing guidance to applicants on the factors that the Secretary of State is likely to consider when deciding whether the designation criteria have been satisfied and therefore whether to designate a nuclear company in respect of its proposed nuclear project under the NE(F)A.

It is important to note that the Secretary of State's power to designate a nuclear company under section 2(1) of the NE(F)A is discretionary. Even where the designation criteria may have been satisfied, the Secretary of State is under no obligation to designate a nuclear company for the purposes of section 2(1).

It should also be noted that, under section 5(1) of the NE(F)A, the Secretary of State has the power to revoke the designation of a nuclear company if the company loses its electricity generation licence in respect of the relevant project or either of the designation criteria ceases to be met. Under section 3(5)(c) of the NE(F)A, the Secretary of State can also attach conditions to the designation, which can result in the designation lapsing if these conditions are not met, by virtue of section 5(3) of the NE(F)A.

### 1.4 Nuclear Energy (Financing) Act

The text box below sets out a detailed summary of the NE(F)A.

The NE(F)A enables the Secretary of State to designate a nuclear company in respect of its proposed nuclear energy generation project, provided that the criteria
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set out in section 2(3) of the NE(F)A are met, as further explained in Section 3 of this Statement. Should those criteria no longer be satisfied, the Secretary of State has the power to revoke the designation. Designation of a nuclear company enables the Secretary of State to modify the conditions and terms of the nuclear company's electricity generation licence, pursuant to section 6 of the NE(F)A, while the designation notice has effect.

Under section 6(5) of the NE(F)A, modifications made under section 6(1)(a) of the NE(F)A may, for example, include provision about the nuclear company receiving an allowed revenue in respect of its activities in relation to the design, construction, commissioning, and operation of the nuclear project (including its activities in complying with any obligations under an approved funded decommissioning programme under the Energy Act 2008). The NE(F)A supports this by ensuring that the Authority, as the economic regulator, has the information and powers that it needs to regulate a nuclear project benefitting from the RAB model.

Under section 2 of NE(F)A:

The Secretary of State may designate a nuclear company in relation to a nuclear energy generation project in respect of which it holds an electricity generation licence only if:

- the Secretary of State is of the opinion that the development of the relevant nuclear project is sufficiently advanced to justify the designation of the nuclear company in relation to the project, and
- The Secretary of State is of the opinion that designating the nuclear company in relation to the project is likely to result in value for money.

Section 4 of the NE(F)A sets out the events and circumstances under which a nuclear company's designation for the purposes of the nuclear RAB model would expire. Section 4(2) of the NE(F)A defines the expiry date in relation to the designation of a particular nuclear company as being the end of the period of five years from the date of the designation notice, or, if the expiry date has been extended under section 4(3) of the NE(F)A, the end of the day specified in the most recent extension notice. Section 5 of the NE(F)A sets out the circumstances in which a designation may be revoked or may lapse in accordance with conditions attached to it. Assuming the designation of a nuclear company has not previously expired, lapsed or been revoked, where the nuclear company's licence has been modified pursuant to section 6(1) of the NE(F)A and it has entered into a revenue collection contract with a revenue collection counterparty, the nuclear company becomes a relevant licensee nuclear company under the NE(F)A.

## 1.5 Relevant Consultees

Before designating a nuclear company under section 2(1) of the NE(F)A, the Secretary of State is required to prepare draft reasons for the designation of the nuclear company and consult with listed consultees (including on the draft reasons) in accordance with section 3(2) of the NE(F)A.

Although not required to do so by the legislation, in the event that the Secretary of State determines not to designate a nuclear company, we would usually expect reasons for that decision to be given to the applicable nuclear company.

Where the Secretary of State does consider that it may be appropriate to designate a nuclear company, they will provide a draft of their reasons to the relevant consultees prior to any designation taking place. This provides an opportunity for those who have expertise relevant to the designation or have a particular interest in the decision, to provide their views and expertise on the matter of designation. The consultees include:

- the nuclear company that the Secretary of State proposes to designate;
- the Authority (GEMA, the governing body of Ofgem);
- the Office for Nuclear Regulation (ONR);
- where any part of the site for the nuclear project is in England, the Environment Agency (EA);
- where any part of the site for the nuclear project is in Wales, the Welsh Ministers and Natural Resources Wales (NRW);
- where any part of the site for the nuclear project is in Scotland, the Scottish Ministers, and the Scottish Environment Protection Agency (SEPA); and
- such other persons as the Secretary of State considers appropriate. This may, for example, include, additional advisory consultees such as the Marine Management Organisation, Natural England, and National Grid ESO. This list is only provided for illustrative purposes; the Secretary of State will consider who it is appropriate to consult at the relevant time.

### 1.5(a) Role of the Authority – Gas and Electricity Markets Authority

As mentioned above, the Authority will be consulted on the draft reasons for a proposed designation of a nuclear company by the Secretary of State. Once the Secretary of State has issued a notice to designate a nuclear company in accordance with the NE(F)A, they will have the power to amend the company's existing electricity generation licence in accordance with section 6 of the NE(F)A as long as the designation continues to have effect. Among other things, this will allow for the insertion of the special conditions pertaining to economic regulation that set out how the licensee will be regulated, and how its allowed revenue will be calculated.

Prior to a company becoming a relevant licensee nuclear company as per the NE(F)A, the Authority will advise the Secretary of State on the economic conditions proposed to be included in the relevant nuclear company's electricity generation licence; for example, project costs, risk sharing mechanisms and investor returns. This corresponds with the Authority's duty to advise and assist the Secretary of State under section 47 of the Electricity Act 1989 (the EA1989). The Authority's principal objective under section 3A of the EA1989 is to protect the interests of existing and future consumers. Under section 8(1) of the NE(F)A, the Secretary of State must also consult the Authority before making any modifications using the power in section 6 of the NE(F)A.

Once the generation licence of a nuclear company has been modified by the Secretary of State and the company has entered into a revenue collection contract with the revenue collection counterparty, the Authority will be the economic regulator – overseeing returns, behaviours and functionality of the relevant licensee nuclear company under the terms and conditions of its amended generation licence. In order for the Authority to perform its role as the economic regulator for nuclear RAB projects effectively, under section 12 of the NE(F)A, it will be able to exchange information and advice with other regulators, other bodies and/or third parties such as the ONR, National Grid ESO, and the EA.

### 1.5(b) Role of the Office for Nuclear Regulation (ONR)

The ONR is the UK's regulator for nuclear safety, security and safeguard regimes and regulates the safety and security of nuclear installations (including conventional health and safety) and the transport of radioactive materials in the UK. The ONR will provide ongoing technical and regulatory policy advice ensuring that safety and security remain paramount.

As a consultee, the ONR will engage in an advisory capacity to inform decision-making in relation to the designation process and will advise and work closely with the other relevant regulatory bodies such as the Authority and the environmental regulators.

### 1.5(c) Role of Environmental Regulators

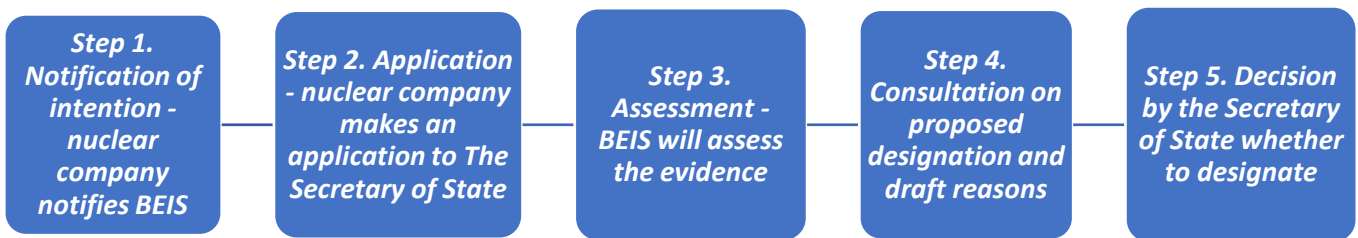
Environmental regulation is a devolved matter in the UK. This means that there are different environmental regulators in England (the EA), Scotland (SEPA), Wales (NRW) and Northern Ireland, and they each have different regulations.

For the purposes of this Statement, the EA, SEPA and NRW are collectively referred to as the 'environmental regulators'. These different regulators all have the same general purpose: to protect people and the environment from the harmful effects of human activity, including those involving radioactive substances.

As consultees the environmental regulators will engage in an advisory capacity to inform decision making in relation to the designation process and will advise and work closely with the other relevant regulatory bodies such as the Authority and the ONR.

## 2: Procedure to determine Designation

This section sets out the procedure that the Secretary of State expects to follow in determining whether to exercise the designation power under section 2(1) of the NE(F)A:



### **Step 1. Notification of intention**

A nuclear company should first notify government (BEIS) of its intention to apply in advance of submitting a designation application to the Secretary of State. This will allow BEIS and the relevant statutory consultees to prepare and plan for appropriate resources to execute the designation procedure.

### **Step 2. Application**

A company which wants to be designated for the purposes of the nuclear RAB model should make an application to the Secretary of State detailing its proposals for a nuclear project. The Secretary of State is then expected to decide whether the designation criteria in section 2(3) of the NE(F)A are met in relation to the company.

An application by the nuclear company should include all necessary evidence in relation to each of the designation criteria, as further explained in Section 3 of this Statement, and any additional information which may be pertinent to the application and supports the Secretary of State's decision-making.

BEIS may, at its discretion, contact applicants in order to clarify any applications (or parts thereof) which are unclear or, contain genuine mistakes or omissions. However, BEIS is not under any obligation to do this.

### **Step 3. Assessment**

Once an application is made, BEIS will undertake an assessment of the application (including all accompanying documentation). During the assessment stage, the Secretary of State may request further details in relation to such applications and it is essential that these requests are responded to within the time specified in the request.

As part of the assessment, BEIS may, at its discretion, request access for additional evidence to substantiate any claims, arguments or assumptions made by the nuclear company in its

proposal. The assessment phase may involve direct engagement between BEIS and the nuclear company on any aspect of the proposal to help inform the Secretary of State's consideration and decision making.

BEIS will expect open access to any information required to support its assessment.

The detailed assessment will then be carried out, following which, draft reasons for designation will be prepared if the designation criteria have been satisfied and the Secretary of State considers that designation is appropriate. BEIS will draw on expert advice to carry out this work as and when needed.

#### **Step 4. Consultation on proposed designation and draft reasons**

Before designating a nuclear company, under section 3(2) of the NE(F)A, the Secretary of State must:

- prepare draft reasons for the designation, and
- consult the persons listed in section 3(3) of the NE(F)A (including on the draft reasons).

As outlined in Section 1.5 above, if the Secretary of State considers, in light of the above assessment, that it may be appropriate to designate a nuclear company, they will provide a draft of their reasons to the relevant statutory consultees prior to any designation taking place. The Secretary of State will consider and take account the views of the consultees before reaching a decision on whether to designate a nuclear company.

#### **Step 5. Decision**

The decision whether to designate a nuclear company for the purposes of the RAB model will then be taken by the Secretary of State, informed by the outcome of the detailed assessment and the consultation process set out above.

Applicants are not entitled to claim from BEIS any costs or expenses that they may incur in preparing their application irrespective of application outcome.

If the Secretary of State is satisfied that the designation criteria are met in relation to the nuclear company which has submitted the application and decides to designate such nuclear company, then the Secretary of State must give a designation notice to the nuclear company, which must include:

- a description of the nuclear project,
- the Secretary of State's reasons for the designation (amended as appropriate in light of consultation under section 3(2)(b) of the NE(F)A),
- details of any conditions imposed by the Secretary of State in relation to the designation and of the consequences of a failure to comply with any such condition, and
- the date of the notice.

The Secretary of State must also –

- (a) publish a designation notice, and
- (b) in addition to giving the designation notice to the nuclear company being designated, give a copy of it to the consultees, who were consulted under section 3(2)(b) of the NE(F)A.

It should be noted that, when publishing a designation notice, the Secretary of State may exclude material that they consider would be likely to prejudice someone's commercial interests or where publication would be contrary to the interests of national security (see section 13 of the NE(F)A).

The purpose of the designation is to trigger the Secretary of State's powers under section 6 of the NE(F)A to modify the electricity generation licence of the relevant nuclear company in order to make provision for a RAB funding model. This process sits complementary to the wider framework of Government, which would include the relevant national security processes, as well as the economic and safety regulatory approvals that a nuclear project is subject to. This will include an associated level of assessment and due diligence, before being able to take a final investment decision, that may take place before, in parallel to, and following the designation of the company.

As stated above, if at any point following designation (but prior to entry into a revenue collection contract), the nuclear company loses its electricity generation licence or either of the designation criteria are no longer met in relation to the company, the Secretary of State may revoke the company's designation. A company's designation may also lapse in accordance with conditions attached to it. In either case, any RAB licence modifications made before the designation ceased to have effect would be treated as never having been made.

## 3: Designation criteria

The Secretary of State may only designate a nuclear company when the designation criteria in section 2(3) of the NE(F)A are met.

The designation criteria are:

- the Secretary of State is of the opinion that the development of the nuclear project is sufficiently advanced to justify the designation of the nuclear company in relation to the project, and
- the Secretary of State is of the opinion that designating the nuclear company in relation to the project is likely to result in value for money.

### 3.1. Project maturity assessment

As set out in section 2(3)(a) of Part 1 of the NE(F)A, the first criterion for designation is that the Secretary of State would need to be satisfied that the development of the proposed project is sufficiently advanced to justify designation of the nuclear company. The Secretary of State is expected to judge whether the development of the proposed nuclear project is sufficiently advanced following an assessment of the project's overall maturity across a number of critical and key project delivery enablers, as set out in Section 3.1(a) and Section 3.1(b).

The overarching principle for the Secretary of State is that development of the project would be considered sufficiently advanced if it can demonstrate a credible strategy and plan for the design, manufacturing, construction, installation, commissioning, operations, and ultimate decommissioning of its proposed nuclear project.

As stated above, the assessment for designation will be on the basis of ensuring that the key project delivery enablers are in place to warrant its designation by the Secretary of State and subsequently to make the RAB-related modifications to their licence. The designation process is the first step towards a nuclear company entering into a RAB revenue collection contract, and does not preclude more detailed assessments, negotiations and due diligence activities that may be required in line with government project approvals and processes, and agreement of relevant contracts.

The Secretary of State would want to be confident that the nuclear company making a designation application has sufficiently well-developed arrangements for securing access to control over and ownership of a site for the development of its new nuclear power station. The nuclear company would be expected to have satisfied themselves that the site for its proposed nuclear project complies with the government policy for the siting of nuclear power stations.

Details of the key project delivery enablers that the Secretary of State is expected to consider in the assessment are set out in Sections 3.1(a) of this Statement. Further areas of potential consideration by the Secretary of State are set out in Section 3.1(b) of this Statement.



However, the Secretary of State reserves the right to consider any and all areas of the proposed nuclear project they deem relevant and necessary to fulfil their obligations under the designation process. The information contained in this Statement does not therefore represent an exhaustive list of the topics which the Secretary of State may wish to assess.

Demonstration of adequate progress in securing the relevant regulatory approvals should be considered a minimum expectation for designation. The project maturity considerations set out in Section 3.1(b) of this Statement present additional important areas of consideration the Secretary of State is expected to take into account when making their judgement.

The project delivery enablers described in Section 3.1(a) of this Statement reflect the main regulatory approvals, licences, permits and consents that are required by the nuclear company to start construction of a new nuclear project.

Learning from experience of major infrastructure projects (including nuclear projects), within government and in private industry,<sup>7</sup> has highlighted common factors and sources of failures that have typically driven cost and schedule escalation. As part of the assessment of overall project maturity, the Secretary of State may wish to be satisfied that the principles of project success<sup>8</sup>, learning and good practice for major project initiation<sup>9</sup> have been adequately considered by the nuclear company in its delivery approach.

To reflect the specific context of the nuclear sector, the details in Section 3.1(b) of this Statement have been informed by analysis from the New Nuclear Cost Reduction Working Group, as part of the Nuclear Sector Deal. Their proposed framework for assessing the risk profile of future projects incorporates academic, government and industry led learning from major projects, specifically for new nuclear.

### 3.1(a) Regulatory approvals

The Secretary of State would be likely to be of the view that having obtained or being in the later stages of the regulatory approval processes for most of the areas listed below would show a level of confidence that the development of the project was sufficiently advanced to justify designation.

As part of the assessment, previous UK deployment of the proposed nuclear technology, particularly with respect to matters that are not impacted by site specifics, will likely provide confidence in regulatory risk being reduced.

### Planning Consents

Under the Planning Act 2008, a nationally significant infrastructure project, such as a new nuclear power plant with an electrical output capacity of over 50MW in England or over 350MW

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<sup>7</sup> For example, the ETI Nuclear Cost Drivers Project: <https://www.eti.co.uk/library/the-eti-nuclear-cost-drivers-project-summary-report> (viewed on April 2022)

<sup>8</sup> For example, through reference to guidance from IPA: <https://www.gov.uk/government/publications/principles-for-project-success> (viewed on April 2022)

<sup>9</sup> For example, through reference to guidance from IPA: <https://www.gov.uk/government/publications/improving-infrastructure-delivery-project-initiation-routemap> (viewed on April 2022)

in Wales would need development consent under the Planning Act 2008.<sup>10</sup> Prior to the start of construction, an application for a development consent order (DCO) would need to be made to the Planning Inspectorate by the developer of the project for consent to undertake a Nationally Significant Infrastructure Project. If it accepts the application, the Planning Inspectorate would examine it and make a recommendation to the Secretary of State, following which the Secretary of State would make the decision on whether or not to grant the DCO. The Secretary of State would ensure there was no conflict of interest between the decision in respect of designating a nuclear company and the development consent decision, if necessary, by delegating the DCO decision to a minister unconnected with the designation approval process.

For new nuclear power stations at or under 50MW in electrical output in England, planning approval is sought from the relevant local planning authorities. In Wales, new generating stations between 10MW and 350MW are Developments of National Significance which are dealt with by the Welsh Government. Any station below 10MW in Wales would be dealt with by the relevant local planning authority.

The preparation of a development consent application for a new nuclear power station is a comprehensive process requiring extensive land, community, and environmental assessments. For this reason, the progress of a project's development consent application is a good indicator of project maturity and progress.

The Secretary of State may require that the development of the project is at an appropriately advanced stage of the development consenting or planning process which confirms the maturity of the project. For a project which is a nationally significant infrastructure project, the Secretary of State may expect the project to be in an advanced stage of the process of being accepted by the Planning Inspectorate, such as being in or having completed the examination stage, depending on the project.

### **Nuclear Site Licence**

The Nuclear Site Licence (NSL) is the principal instrument for regulating the safety of nuclear sites in the UK. A NSL may be granted by the ONR to a named corporate body to install and operate a specified nuclear installation in a defined location. It is granted for the full life cycle of the facility. The Nuclear Site Licence contains site-specific information, such as the licensee's address and the location of the site and defines the number and type of installations permitted. Such installations include nuclear power stations, research reactors, nuclear fuel manufacturing and reprocessing, and the storage of radioactive matter in bulk.

The Nuclear Site Licence contains a set of Standard Conditions, covering design, construction, operation, and decommissioning, and is attached to each licence. These conditions require licensees to make and implement adequate arrangements to ensure compliance with the Licence Conditions.<sup>11</sup> These conditions require nuclear site licensees to implement adequate arrangements to ensure compliance.<sup>12</sup>

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<sup>10</sup> 2008 Planning Act <https://www.legislation.gov.uk/ukpga/2008/29/contents> (viewed on April 2022)

<sup>11</sup> <https://www.onr.org.uk/licensing.htm> (viewed on April 2022)

<sup>12</sup> <https://www.onr.org.uk/licensing.htm> (viewed on April 2022)

Prior to being granted a Nuclear Site Licence, a nuclear company must submit a Nuclear Site Licence application to the ONR and undergo extensive assessment by the ONR on the suitability of the site, the organisation and the technology to meet the stringent requirements of the Nuclear Site Licence and the Licence Conditions.

It is likely that the Secretary of State would want to be confident that the nuclear company in question has made an application for a Nuclear Site Licence and is sufficiently progressed in the approvals process of a Nuclear Site Licence for the construction and operation of the proposed power station. The applicant would be expected to demonstrate to the Secretary of State that its plan for securing a Nuclear Site Licence is well advanced, including plans for development of the project's safety case. The Secretary of State will consult with the ONR to confirm the status of the Nuclear Site Licence application and assessment.

### **Environmental Permits**

The Secretary of State will wish to be confident that the applicant will be able to secure the necessary environmental permits and consents to construct and operate the power station, in a timely manner.

Any nuclear company that wants to construct and operate a nuclear power station will have to show that it can build, commission, operate and decommission it safely and securely, whilst protecting the environment and managing radioactive waste.

In parallel with the requirement to obtain a Nuclear Site Licence, a wide range of environmental consents and permits are required which regulate the project's impact on its environment. These permits include, for example (and are not limited to), authorisations under the Radioactive Substances Act; to discharge effluent to the marine and air environments, authorisations and permits related to site construction activities, permits and licences to relocate protected species and habitats, and permits and approvals related to the impact of construction site dewatering on the local groundwater environment.

These permits, licences and approvals are required at different phases of the project life cycle and, in some cases are highly specific to the power station technology, proposed construction arrangements and the location of the project.

The Secretary of State will therefore need to have sufficient confidence that the nuclear company has a comprehensive plan in place to identify and achieve the necessary permits for its new nuclear power station project and that there is well developed and timely progress towards achieving those permits to support the proposed construction and operation schedule.

### **Regulatory Design Assessment**

The Generic Design Assessment (GDA) process was developed by the ONR and the Environment Agency to assess new nuclear power station designs. The non-mandatory process allows the regulators to assess the safety, security, and environmental implications of

new reactor designs, separately from applications to build them at specific sites.<sup>13</sup> Upon successful completion of a GDA, the nuclear regulators will be confident that the design is capable of being built and operated on a site bounded by the generic site envelope, in a way that is acceptably safe and secure. This is subject to site-specific assessment and licensing.

Obtaining a Design Acceptance Certificate from ONR and a Statement of Design Acceptability from the Environment Agency at the end of GDA indicates regulatory risk associated with the design has been reduced. Therefore, the Secretary of State is likely to be of the view that a GDA is a good indicator of project maturity and completion of, or significant progress through, the GDA would support demonstration that the development of the project is sufficiently advanced for designation.

As GDA is a non-mandatory process, if a nuclear company demonstrates an alternative approach to securing regulatory design assessment, the Secretary of State may consider its evidence against the relevant UK specific regulatory assessment and would seek advice from the ONR and the environment agencies before coming to a view on its relevance.

Each nuclear company's project design will have its own unique specifications, therefore, obtaining a GDA would provide confidence that the proposed design is capable of being constructed, operated, and decommissioned in Great Britain in accordance with the standards of safety, security and environmental protection required.

### **Regulatory Justification**

Regulatory Justification is a legal requirement and is based on the internationally accepted principles of radiological protection. This states that no practice involving exposure to ionising radiation should be adopted unless it produces sufficient benefits to the exposed individuals or to society, to outweigh the health and environmental detriment it may cause.

In the UK, this principle is set out in the 'Justification of Practices Involving Ionising Radiation Regulations 2004'.<sup>14</sup> These regulations require any new class or type of practice involving ionising radiation (such as nuclear power stations) to undergo a generic, high-level pre-optimisation assessment of whether the social, economic, or other benefits outweigh the health and environmental detriment.

In the case of recent new nuclear power station projects in the UK, Regulatory Justification decisions taken by the Secretary of State have focussed on power station technologies as a class or type of practice involving ionising radiation, rather than the specific development projects<sup>15</sup>. The Secretary of State will ensure there is no conflict of interest between the decision in respect of designating a nuclear company and the Regulatory Justification decision,

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<sup>13</sup> Application process guidance for GDAs: <https://www.gov.uk/government/publications/new-nuclear-power-plants-generic-design-assessment-guidance-for-requesting-parties/new-nuclear-power-plants-generic-design-assessment-guidance-for-requesting-parties> (viewed on April 2022)

<sup>14</sup> [Justification of Practices Involving Ionising Radiation Regulations 2004](#) (viewed on April 2022)

<sup>15</sup> Further details of the process for Regulatory Justification and information on nuclear technologies that have received Justification can be located here: <https://www.gov.uk/guidance/guidance-for-operators-of-new-nuclear-power-stations> (viewed on April 2022)

if necessary, by delegating the decision to a minister unconnected with the designation approval process.

A nuclear company will be expected to demonstrate that the nuclear technology it wishes to deploy has either already successfully completed the Justification process or that its application for Regulatory Justification is in its final stages of approval.

### **Funded Decommissioning Programme (FDP)**

The Secretary of State will need to have confidence that the nuclear company has begun sufficiently considered plans to satisfy, at a later date upon submission, the requirements in the Energy Act 2008 relating to Funded Decommissioning Programmes (FDPs). At this stage there is no expectation or requirement for the operator to formally submit their FDP to the Secretary of State for approval prior to the designation decision.

All nuclear power stations have a finite life beyond which it is not safe or economically feasible for them to continue to operate. After this period, the power station must be decommissioned. The Energy Act 2008<sup>16</sup> establishes a requirement for the prospective operator of a new nuclear power station to have secure financing arrangements in place to meet the full costs of decommissioning and their full share of waste management and disposal costs. For the information of prospective nuclear operators and relevant stakeholders, the government guidance sets out principles that the Secretary of State would expect to see satisfied in the FDP documentation.

The FDP must set out the projected cost of decommissioning, underpinned by technical justification and a funding plan to meet these costs. Developers of nuclear power stations are obliged to submit a FDP to the Secretary of State for approval. This must set out the site operator's costed plans for appropriately managing its future liabilities in relation to decommissioning, waste management and waste disposal, and how the operator will make financial provision to meet those liabilities. The programme must be approved by the Secretary of State before construction for the power station can start. To help inform this decision, the Secretary of State may, for example, seek the expert advice of the Nuclear Decommissioning Authority and the Nuclear Liabilities Financing Assurance Board to review the Decommissioning and Waste Management Plan and the Funding Arrangements Plan respectively.

At the point of a decision on designation, the Secretary of State is expected to consider the maturity of the draft FDP documentation if available or a plan to obtain approval of FDP documentation prepared by the nuclear company.

### **3.1(b) Additional Project Maturity Considerations**

As described above, the Secretary of State would expect to be satisfied that a proposed nuclear company for designation would be able to demonstrate its learning and good practices for delivering complex infrastructure projects and therefore would have a number of key areas

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<sup>16</sup> [‘The Energy Act 2008: Funded Decommissioning Programme Guidance for New Nuclear Power Stations’](#) Department of Energy and Climate Change, 2011 (viewed on March 2022)

that were sufficiently mature. These could be assessed in conjunction with the risk position of the project to provide a holistic view as to whether the development of the project was sufficiently advanced to justify the designation of the nuclear company in question.

A holistic assessment of project maturity may consider whether the project delivers on key principles, standards, good practice, and learning expected in major project delivery.

The Secretary of State's consideration of project maturity in the context of designation (or any related process in relation to the nuclear company) will not undermine the role of independent nuclear regulators assessing the project nor contradict the requirements or expectations of regulators, with respect to the same or similar project maturity considerations, where it pertains to regulatory vires. The Secretary of State is expected to seek input from regulators, during the consultation stage, on matters of project maturity where they may have an interest to ensure alignment in expectations when assessing a proposed project.

Some of the key project delivery indicators the nuclear company would likely need to address, in order to demonstrate that the development of the project was sufficiently advanced and thereby de-risk the project and build stakeholder confidence, include those set out below:

### **Delivery and Governance**

The Secretary of State may wish to be satisfied that the project has a clear delivery strategy that details the overarching ownership/sponsorship, delivery, financing, governance, assurance frameworks and supply chain structures required to construct and operate the nuclear power plant.

The Secretary of State would likely also expect to be satisfied that the project has reached a level of maturity in respect of its governance processes, which may include clarity on the governance and decision-making structure across the delivery model and how the relevant organisation will exercise oversight and decision-making powers as an intelligent client.

A delivery strategy and associated plans are expected to provide sufficient understanding of the overall project schedule and programme management arrangements, including the demonstration of strategic risk reduction and that prior learning has been considered to provide confidence of successful delivery.

As part of assessing whether the plan for obtaining finance is sufficiently developed, the Secretary of State would expect to be satisfied of the nuclear company's proposed financing strategy to complete the construction of the project including the period leading to financial close. This could include a capital structure, initial engagement with debt and equity investors, and identifying sufficient financing sources to carry out the required project development activities to reach financial close. The nuclear company should also be able to demonstrate they have engaged constructively with HMG on the RAB model and any required Government Support Package (GSP).

The Secretary of State would wish to be satisfied that the delivery strategy, plan and financing strategy, together substantiate a credible business case for the project with a focus on the achievement of specified project outcomes and benefits.

### **Cost and Schedule estimates**

Insufficient cost estimate maturity is a key driver of cost overrun across major infrastructure projects and on new nuclear projects. Cost estimates for these projects are often inaccurate, due to their complexity, novelty, and low level of design and supply chain maturity.

The project should clearly set out the estimated cost and schedule for delivery of the project with an appropriate level of contingency for risk and estimating uncertainty. The estimates should be aligned with the design maturity, organisational delivery strategy, supply chain contracting strategy and should be prepared using a controlled process of estimating governance. For designation, the Secretary of State would expect cost estimates to meet this bar, however, these may be refined further as the project continues to mature post-designation.

The Infrastructure and Projects Authority (IPA) Cost Estimating guidance and requirements, and other applicable HMG guidance, may be used to assess the nuclear company's cost estimate methodology.

### **Design Maturity**

The Secretary of State may expect to be satisfied that the project has reached a sufficient level of design maturity to provide confidence that the project can be constructed and operated in line with the necessary safety and environmental requirements, and demonstrably validate and underpin a robust estimate of project cost and risk.

Maturity of design prior to commencement of construction has been shown globally to be a critical cost driver for major infrastructure projects and their outturn costs. Experience of new nuclear project deployment in recent years has highlighted the impact of low levels of design maturity leading to poor cost estimation and ultimately poor value for money outcomes. A nuclear company should be able to demonstrate how the maturity of its design gives confidence to the Secretary of State in overall project deliverability.

### **Organisational Design and Development**

The Secretary of State may wish to be satisfied that the project has reached a suitable level of maturity in its internal organisation design, structure, and resourcing, both financial and human, to be in a position to deliver the project in line with safety requirements and the project's cost and schedule estimates.

As recognised by the Infrastructure and Project Authority's Project Routemap, the development of a strong project delivery organisation is widely considered to be a critical factor in the establishment of successful infrastructure projects.

The Secretary of State would expect to need confidence that the nuclear company has a well-established organisational development plan which sets out robust plans for the development

of its people and systems by reference to the changing requirements of the relevant project's delivery phases.

### **Project Management**

The Secretary of State would wish to be satisfied of the nuclear company's proposed project management strategy (including any detailed arrangements for use of delivery partners).

The nuclear company would be expected to demonstrate how it would lead and manage project delivery (across all life cycle phases), integrate delivery disciplines, and ensure implementation of best practice from major infrastructure project management.

### **Commercial / Supply Chain**

The Secretary of State may expect to be satisfied that the project has reached a sufficient level of maturity with regard to its proposed supply chain.

Major infrastructure projects are supported by a large and diverse supply chain that includes engineering, construction, manufacturing, installation, technology and equipment supply, project management capability, operational and maintenance services, fuel, and other professional and long-term services.

The nuclear company would be expected to demonstrate a well-developed supply chain and contracting strategy for the project, in line with all relevant BEIS supply chain guidance.

The Secretary of State would wish to also be satisfied that the project has a clear strategy and plan to secure necessary wider project agreements (e.g., grid connection, cooperation agreements etc) that enable the overall delivery model.

### **Operational strategy and plans**

The Secretary of State would wish to be satisfied that the project has reached an appropriate level of maturity with respect to its strategy, planning and preparation for the future operational phase of the power station.

The Secretary of State may also wish to be confident that appropriate arrangements have been made for the operational phase and plans for the transition into operations to underpin confidence in assumptions related to the future operational performance of the power station and the cost estimates associated with the operational period.

## **3.2. Value for Money**

As set out in section 2(3)(b) of Part 1 of the (NE(F)A, the second criterion for designation is that the Secretary of State will need to be of the opinion that designating the nuclear company in question in relation to the project is likely to result in value for money.



## Assessment

BEIS would carry out an assessment of the project's likely value for money in line with The Green Book<sup>17</sup> which sets out the government's approach for appraisal and evaluation. This will involve assessing both the monetised and non-monetised costs and benefits of the project to society as a whole. BEIS will also consider the impact of the project on consumers and taxpayers specifically.

The main monetised impact is expected to be the difference between the cost of the electricity system if a project goes ahead and the cost of the electricity system if alternative projects or generation technologies were built instead.

Potential non-monetised benefits include security benefits derived from generating electricity in Great Britain, and the additional jobs benefits derived from the value of jobs created during the construction and operation of the project.

As part of the overall value for money assessment, which will be an ongoing process beyond designation and as part of wider government approvals, the Secretary of State will wish to gain confidence that the principles and expectations of value for money, as applied to public spending, and as appropriate, have been adequately adopted and embedded into the arrangements and decisions of spending at the project level. Assessments for value for money may be used as the basis for reviewing whether the project can demonstrate optimal use of resources to achieve its intended outcomes.

The Public Sector Equality Duty which requires public authorities when exercising their functions to have due regard to the need to meet the three aims under section 149 of The Equality Act 2010<sup>18</sup> (being, in summary, the elimination of discrimination and other unlawful conduct under the Act, the advancement of equality of opportunity between those who share protected characteristics and those who do not, and fostering good relations between people who share protected characteristics and those who do not) will also be considered. An Equality Impact Assessment was also carried out for the NE(F)A.<sup>19</sup>

The Authority will advise the Secretary of State on the design of the economic regulatory regime for relevant licensee nuclear companies and will be consulted on the draft reasons for the designation of a nuclear company.

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<sup>17</sup> HMT (2020), The Green Book, <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government> (viewed on April 2022)

<sup>18</sup> Section 149 of The Equality Act 2010 <https://www.legislation.gov.uk/ukpga/2010/15/section/149> (viewed on April 2022)

<sup>19</sup> Impact assessment <https://bills.parliament.uk/bills/3057/publications> (Viewed on April 2022)

## Glossary

<b>Term</b>	<b>Meaning</b>
Authority	The Gas and Electricity Markets Authority (GEMA), Ofgem's governing body, as the 'Authority' to regulate a relevant licensee nuclear company
BEIS	Department for Business, Energy and Industrial Strategy
DCO	Development Consent Order
DEFRA	Department for Environment, Food and Rural Affairs
EA	The Environment Agency in England
EA1989	Electricity Act 1989
FDP	Funded Decommissioning Programme
FID	Final Investment Decision
GDA	Generic Design Assessment
MMO	Marine Management Organisation
NAO	National Audit Office
National Grid ESO	Electricity System Operator
NE(F)A	Nuclear Energy (Financing) Act
NRW	Natural Resources Wales in Wales
NSL	Nuclear Site Licence
Ofwat	Water Services Regulation Authority
ONR	Office for Nuclear Regulation
SEPA	The Scottish Environment Protection Agency in Scotland
RAB	Regulated Asset Base
TTT	Thames Tideway Tunnel

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