Title: Regulated Asset Base model for new nuclear
IA No: BEIS039(F)-21-ESNM
Lead department or agency: Department for Business, Energy and Industrial Strategy (BEIS)

Impact Assessment (IA)
Date: 26/10/2021
Stage: Final
Source of intervention: Domestic
Type of measure: Primary legislation
Contact for enquiries: Energy8@2021@beis.gov.uk

Summary: Intervention and Options

RPC Opinion: Not Applicable

Cost of Preferred (or more likely) Option (in 2021 prices)

<table>
<thead>
<tr>
<th>Total Net Present Social Value</th>
<th>Business Net Present Value</th>
<th>Net cost to business per year</th>
<th>Business Impact Target Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>£0m</td>
<td>£0m</td>
<td>£0m</td>
<td>Not a regulatory provision</td>
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What is the problem under consideration? Why is government action or intervention necessary?

New nuclear power plants have high upfront costs and long construction periods, meaning investors need to take on considerable risk, which leads to a high financing cost. The broader regulatory and policy environment also make it difficult to attract new investment to nuclear construction projects. This makes it difficult to deliver new nuclear projects at a low cost.

What are the policy objectives of the action or intervention and the intended effects?

The UK is committed to the legally-binding target of Net Zero greenhouse gas emissions by 2050. Earlier this year, the Government enshrined in law a new target to reduce greenhouse gas emissions by 78% by 2035, compared with 1990 levels, as part of the Sixth Carbon Budget. A key part of meeting the Sixth Carbon Budget will be to secure the transition to a clean electricity system that is reliable and affordable for electricity consumers. Nuclear power plants are expected to be an important part of the future electricity mix. The cost of finance of a new nuclear power plant is an important driver of project cost. Therefore, the aim of this legislation is to provide mechanisms which could reduce the cost of new nuclear power plants by enabling lower cost finance. This would help to deliver a lower cost electricity system.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

BEIS considered the option of not introducing new legislation. That would mean relying on existing funding models, such as Contracts for Difference (CfD), to fund future nuclear projects. BEIS believes there are few, if any, strategic investors in the market with the risk appetite to finance a new nuclear power plant using a CfD mechanism. BEIS considered whether this could be addressed solely through establishing a Regulatory Asset Base (RAB) model, but this alone would not achieve the goal of delivering new projects at a lower cost. BEIS believes nuclear RAB legislation, with amended Funded Decommissioning Programme (FDP) legislation and new Special Administration Regime (SAR) legislation would help bring forward new projects at a lower cost, while providing suitable protections for consumers.

Will the policy be reviewed? It will not be reviewed. If applicable, set review date: N/A

Is this measure likely to impact on international trade and investment? No

Are any of these organisations in scope? MicroYes

What is the CO2 equivalent change in greenhouse gas emissions? (Million tonnes CO2 equivalent)1

Traded: N/A  Non-traded: N/A

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: ________________________________ Date: 18.10.2021

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1 New nuclear power plants are expected to lead to greenhouse gas emissions savings. However, this primary legislation is not expected to have an impact, by itself, without further steps being taken.
**Description:** Nuclear Regulated Asset Base (RAB) legislation with amended Funded Decommissioning Programme (FDP) legislation and new Special Administration Regime (SAR) legislation

### FULL ECONOMIC ASSESSMENT

<table>
<thead>
<tr>
<th>Price Base Year 2021</th>
<th>PV Base Year 2021</th>
<th>Time Period 2021-2100</th>
<th>Net Benefit (Present Value (PV))</th>
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<tbody>
<tr>
<td></td>
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#### COSTS (£m)

<table>
<thead>
<tr>
<th></th>
<th>Total Transition (Constant Price)</th>
<th>Average Annual (excl. Transition) (Constant Price)</th>
<th>Total Cost (Present Value)</th>
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</tr>
<tr>
<td>High</td>
<td>N/A</td>
<td>N/A</td>
<td>£0m</td>
</tr>
</tbody>
</table>

**Description and scale of key monetised costs by 'main affected groups'**

The estimated cost of this primary legislation, by itself, is zero. Costs may be incurred if secondary legislation is agreed at a later date, followed by the designation and licence modification of a project. This Impact Assessment illustrates the costs which may be incurred by calculating the cost of building and financing a new nuclear power plant through a RAB model and through a CfD. This reduction in cost is presented in the benefits section below rather than as a negative cost in this section.

#### Other key non-monetised costs by 'main affected groups'

If secondary legislation is agreed at a later date, the main non-monetised cost would be the risk of increased construction cost and duration through a RAB model. A RAB model will also have administrative costs which have not been monetised in this Impact Assessment.

#### BENEFITS (£m)

<table>
<thead>
<tr>
<th></th>
<th>Total Transition (Constant Price)</th>
<th>Average Annual (excl. Transition) (Constant Price)</th>
<th>Total Benefit (Present Value)</th>
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<tr>
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<tr>
<td>High</td>
<td>N/A</td>
<td>N/A</td>
<td>£0m</td>
</tr>
</tbody>
</table>

**Description and scale of key monetised benefits by 'main affected groups'**

The estimated benefit of this primary legislation, by itself, is zero. Benefits would be unlocked if secondary legislation is agreed at a later date, followed by the designation and licence modification of a project. This Impact Assessment illustrates the benefits which may be unlocked at a later date by calculating the reduction in cost of building and financing a new nuclear power plant through a RAB model rather than a CfD.

#### Other key non-monetised benefits by 'main affected groups'

If secondary legislation is agreed at a later date, there may also be some non-monetised benefits. The benefits are likely to be higher than the illustrative figures in this Impact Assessment if more than one new nuclear power plant is built in GB in the future. A RAB model may also incentivise nuclear power plants to operate more flexibly, which would reduce the cost of the electricity system when compared with CfD funded nuclear power plants.

The FDP measures are expected to remove certain barriers to financing new nuclear power plants which may reduce the cost of finance. The SAR measures are also expected to provide some protections for consumers which have not been monetised.

**Key assumptions/sensitivities/risks**

| Discount rate (%) | 3.5% (2021-2051) | 3.0% (2052-2096) | 2.5% (2097-2100) |

The key assumptions for this Impact Assessment are around the hurdle rate (the minimum return needed to incentivise investment), construction cost and construction duration. Sensitivity analysis has been carried out on all three of these assumptions. The main risk is the risk of increased construction cost and duration through a RAB model.

### BUSINESS ASSESSMENT (Option 1)

<table>
<thead>
<tr>
<th>Direct impact on business (Equivalent Annual) (£m):</th>
<th>Score for Business Impact Target (qualifying provisions only) (£m):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs: 0</td>
<td>N/A</td>
</tr>
<tr>
<td>Benefits: 0</td>
<td></td>
</tr>
<tr>
<td>Net: 0</td>
<td></td>
</tr>
</tbody>
</table>
1. **Problem under consideration and rationale for intervention**

1.1. **Financial market constraints**

1. **New nuclear power plants have high upfront costs and long construction periods. While these high upfront costs are followed by low running costs, investors still need to take on considerable risk when making an investment due to the lengthy period before they start to generate, which increases the cost of financing a new nuclear power plant.**

2. **Financial market constraints may also make it difficult to raise large sums of capital investment for a new nuclear power plant. When raising large sums of capital investment for nuclear new build, the financial markets are exposed to significant risks, including delivery or cost overruns, uncertain market returns, and policy risks. Given the limited number of institutions with sufficient capital to invest in such projects, financial market constraints mean those risks are likely to be spread among a small number of investors. Since each investor would be taking a large risk, there would still need to be a high-risk premium to incentivise investment.**

3. **The Contract for Difference (CfD) model was developed to reduce risk to investors. A CfD gives investors certainty over the price which will be paid for a unit of electricity. This reduces the risk of lower-than-expected returns which, in turn, lowers the cost of financing new power generating capacity. Under a CfD model, investors remain responsible for paying for cost overruns. This helps incentivise on-schedule delivery but also leads to higher costs of finance for projects which are lengthy, or less certain to deliver on time. Whilst Hinkley Point C was funded through the CfD model, the National Audit Office report suggested that alternative forms of support should also be considered.**

4. **The number of entities taking on a risk is important. Expected Utility Theory suggests the economic cost of taking a risk is smaller if that risk is spread amongst a larger number of individuals. This suggests that passing risk from a small number of investors to a greater number of consumers could reduce the economic cost of large infrastructure projects, such as a new nuclear power plant.**

5. **If too much risk is removed from the investors of a new nuclear power plant, investors may lack the incentives necessary to ensure the nuclear power plant is built in a timely manner and to a low cost. This increases the risk of cost and schedule overruns. Therefore, a balance is needed between removing unmanageable risk from investors (and passing that risk to a greater number of consumers) whilst ensuring enough risk remains with investors to incentivise the nuclear power plant to be built in a timely manner and to a low cost.**

6. **A Regulated Asset Base (RAB) funding model would give more flexibility to decide the level of risk which should be placed on investors or consumers. The RAB funding model is described in Section 3.1.**

1.2. **Legislation on Funded Decommissioning Programmes**

7. **There is a risk that a degree of ambiguity around the interpretation of certain provisions of the Energy Act 2008 on Funded Decommissioning will place constraints on the ability to finance a new nuclear power plant. Under the Act, it is illegal to begin construction work on any buildings with nuclear safety significance without an approved Funded Decommission Programme (FDP) in place. The purpose of this regime is to provide a legislative framework to ensure that energy companies which operate new nuclear power stations accumulate funds to cover their full decommissioning costs and their full share of waste management costs.**

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8. Under Sections 46 and 48 of The Energy Act 2008, the Secretary of State can unilaterally modify an FDP (whether at the point of original approval or anytime thereafter), which could involve imposing obligations (or additional obligations) on corporate entities “associated” with the site operator to ensure that the provision made in the FDP remains prudent.

9. The purpose of the Secretary of State’s modification power is, as far as possible, to avoid any shortfalls being borne by taxpayers by ensuring that the Secretary of State has additional avenues available for prudent provision for the costs of decommissioning and waste management. The definition of “associated” in Section 67 of the 2008 Act is targeted at those entities which have a substantial degree of influence over the operator’s normal activities, most notably the operator’s group companies and substantial equity investors, given that it is these entities who are most responsible for the operator’s activities. However, there are other activities that investors and their agents might undertake in a RAB (and potentially other) nuclear financing structures, for example holding contingent rights in connection with enforcement of security charges. BEIS does not think these should be caught by this definition. This primary legislation aims to make this distinction clear.

10. It is possible that Section 67 of The Energy Act 2008 could be interpreted in such a way that a security trustee could be at risk of falling under the definition of associated bodies due to the action they take, or are entitled to take, with regard to the enforcement of security in a default scenario. A security trustee’s role is mainly administrative. They earn a fee for performing their function, but otherwise have no interest in the project’s success or control over the operator’s normal functions.

11. Market engagement has suggested security trustees have very low risk appetite and are unlikely to be willing to accept their role within the financing structure if there remains a residual risk they could be liable for FDP payments. This could limit the ability of any new nuclear power plant to access debt financing which would reduce the options for financing a new nuclear power plant, leading to either an increase in the cost of finance or preventing the plant from being financed at all.

12. Given that the security trustee would arguably be an agent or nominee of the secured creditors, it is possible that Section 67 of The Energy Act 2008 could be interpreted such that secured creditors also fall within its scope. This potentially exposes secured creditors to liabilities under an FDP by virtue of the Secretary of State’s modification powers discussed above. BEIS does not believe it is appropriate for secured creditors to be in scope of Section 67. This is because secured creditors will have no substantial degree of control over an operator’s activities in normal circumstances. Secured creditors also do not share directly in the operator’s profits, but rather receive pre-agreed payments of principal and interest under the terms of the financing arrangements. Therefore, it is inappropriate for them to be considered as “associated” with the project.

13. BEIS does not consider that this is the intended effect of existing legislation and it could significantly limit the ability of a nuclear project to access the level of private sector debt financing needed to proceed.

14. In an attempt to resolve this issue, BEIS has considered whether the Secretary of State could enter into an agreement under Section 46 of The Energy Act 2008, agreeing not to exercise their power under Section 48 of the Act to impose liabilities on the security trustee or secured creditors. However, BEIS does not consider that this would be effective in providing those entities with the required level of comfort that they would need to take part in the financing of a new nuclear project. This is because entering this kind of agreement would concede that these bodies are “associated”.

15. Similarly, effort could be taken to ensure the security trustee and secured creditors do not have the types of rights or powers that could potentially result in them being classified as bodies “associated” with the site operator. However, this would result in the structure not being financeable, particularly

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4 “Associated” is defined in Section 67 of The Energy Act 2008. One body corporate is associated with another if one of them has a significant interest in the other or a third body corporate has a significant interest in both of them. Section 67 sets out the circumstances in which one body corporate has a significant interest in another.

5 A security trustee is the entity holding the various security interests created on trust for the various creditors, such as banks or bondholders.

6 A secured creditor is a lender that holds a secured claim on a debtor’s property or assets.
16. As outlined above, BEIS believes that the Secretary of State should only have the power under The Energy Act 2008 to amend an FDP to impose decommissioning obligations on those entities with a substantial degree of influence or control over the operator. This includes the operator’s group companies and substantial equity investors. For the reasons set out above, BEIS believes that security trustees and secured creditors do not fall into this category to the extent that they are exercising security enforcement rights and were never intended to be caught by the legislation. However, a certain amount of ambiguity in Section 67 of The Energy Act 2008 means that new legislation is needed to clarify the position.

1.3. Legislation on Special Administration Regimes

17. Generation companies which own a nuclear power plant in the UK are subject to the existing insolvency regime. If a generation company is deemed to be unable to pay its debts and an ordinary administrator appointed, the objectives of that administration are likely to be aligned with protecting creditors. This will typically either result in the rescue, part rescue or liquidation of the company which may adversely affect consumers where the construction of a nuclear power plant is funded by a RAB model.

18. These existing arrangements are a combination of standard insolvency law (including the appointment of a corporate administrator) and the Nuclear Transfer Scheme (NTS)7 which, including on the generation company becoming insolvent, allows for the Secretary of State to ensure the safe transfer of nuclear assets to the Nuclear Decommissioning Authority (NDA), or an alternative publicly owned body.

19. Given that the main feature of a RAB model is the right given to the generation company to charge a regulated price to users, consumers will have contributed significantly toward the costs of construction and operation of the plant.

20. In an insolvency scenario, a Special Administration Regime (SAR) would have set objectives to commence or continue generation and to rescue the plant as a going concern. This would avoid a scenario under corporate administration whereby the plant is wound up for the benefit of creditors, which would mean consumers do not realise the benefits of a Nuclear RAB project and require an alternative source of generation. New legislation is needed to put in place these protections.

2. Policy objective

21. The UK is committed to the legally-binding target of Net Zero greenhouse gas emissions by 2050. Earlier this year, the Government enshrined in law a new target to reduce greenhouse gas emissions by 78% by 2035, compared with 1990 levels, as part of the Sixth Carbon Budget. A key part of meeting the Sixth Carbon Budget will be to secure the transition to a clean electricity system that is reliable and affordable for electricity consumers.

22. Large scale nuclear power plants are the only technology we have available today which have been proven at scale to provide continuous, reliable and low carbon electricity. However, our existing nuclear fleet will be almost completely retired by 2030. New nuclear power plants are needed to fill the gap created by the retirement of the existing fleet and to meet rising electricity demand due to factors such as the electrification of heating and transport.

23. The cost of finance of a new nuclear power plant is the main driver of project cost. Therefore, the aim of this legislation is to reduce the cost of new nuclear power plants by enabling lower cost finance. This would help to deliver a lower cost electricity system.

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3. Description of options considered

3.1. Long list of policy options

24. This Impact Assessment considers different options for funding mechanisms which could reduce the cost of finance for new nuclear power plants:

- Do not introduce any new legislation to enable new funding mechanisms. Under this option, if possible to find investors willing to take the risk, any new nuclear power plant is likely to be funded through a CfD, which would agree a fixed price (known as a strike price) for every unit of electricity generated by a new nuclear power plant.

- Introduce new legislation which would allow new nuclear power plants to be funded through a RAB model. A RAB model is a type of economic regulation typically used in the UK for monopoly infrastructure assets such as water, gas and electricity networks. The company receives a licence from an Economic Regulator, which grants it the right to charge a regulated price to users in exchange for provision of the infrastructure in question. Charges would be applied during both the construction and operation phases. For the period of construction, the Secretary of State will set the charge whereas, during operation, the charge is set by an independent regulator which holds the company to account to ensure any expenditure is in the interest of users. In the case of a nuclear RAB, suppliers would be charged as users of the electricity system and would be able to pass these costs onto their consumers who also use the electricity system.

25. BEIS also considered options for removing barriers to financing new nuclear power plants. As outlined in Section 1.2, there is a risk that finance for new nuclear power plants is limited by legislation on FDPs. BEIS considered three different options for removing this risk:

- The Secretary of State enters into agreements under Section 46 of The Energy Act 2008, agreeing not to exercise their power under Section 48 of the Act to impose liabilities on the security trustee or secured creditors. However, BEIS does not believe that this would be effective in providing those entities with the required level of comfort that they would need to take part in the financing of a new nuclear project. This is because it would concede that these bodies are “associated”. Therefore, this option has not been included in the short list of policy options below.

- Effort is taken to ensure the security trustees and secured creditors do not have the types of rights or powers that could potentially result in them falling within the definition of bodies “associated” with the site operator. However, this would result in the structure not being financeable, particularly because it would leave the security trustee and secured creditors with limited rights in an enforcement scenario. Therefore, this option has not been included in the short list of policy options below.

- New legislation is introduced which clarifies that security trustees and secured creditors will not fall within the definition of “associated” bodies under Section 67 of The Energy Act 2008 simply by virtue of them holding or exercising security enforcement rights.

26. As outlined in Section 1.3, there is a risk the existing insolvency regime does not give sufficient protection to consumers if a nuclear power plant is funded through a RAB model. BEIS considered two options:

- Make no changes and rely on existing insolvency arrangements.

- Put in place legislation to provide the Secretary of State, or the Gas and Electricity Markets Authority (GEMA) with the consent of the Secretary of State, with the power to apply to the courts for a RAB licensee nuclear (RLNC) administration order. This power would apply in certain

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8 An RLNC administration order is an order sought by the Secretary of State or by GEMA (with the consent of the Secretary of State) to the court in relation to the generation company. An RLNC administration order will provide that for the period during which the order remains in force the affairs, the business and the property of the generation company shall be managed by a person appointed by the court to achieve the purpose of the order and to do so in a manner which protects the interests of the generation company’s members and creditors (so far as compatible with the objectives of the order).
circumstances, including the generation company being unable to pay its debts. This legislation would also enable the administration to be financed through additional charges recouped from supply companies during the course of an RLNC administration order, or once the asset is rescued as a going concern.

3.2. Short list of policy options

27. The policy options which have been considered in the short-list of policy options for this Impact Assessment are:

- **Policy option 1: business as usual.** This option would rely on existing mechanisms to fund a new nuclear power plant. Under this option, any new nuclear power plants are expected to be funded through a CfD. This would depend on a project being financeable under this model.

- **Policy option 2: Nuclear RAB legislation without amended FDP legislation or new SAR legislation.** This option would introduce legislation on a nuclear RAB, which would be the first step towards introducing a RAB model for new nuclear power plants, but would not amend existing FDP legislation or include new SAR legislation.

- **Policy option 3: Nuclear RAB legislation with amended FDP legislation.** This option would introduce legislation on a nuclear RAB, which would be the first step towards introducing a RAB model for new nuclear power plants. It would also amend FDP legislation to make clear that security trustees and secured creditors do not fall within the definition of "associated" bodies under Section 67 of The Energy Act 2008, simply by virtue of them holding or exercising security enforcement rights.

- **Policy option 4: Nuclear RAB legislation with new SAR legislation.** This option would introduce legislation on a nuclear RAB, which would be the first step towards introducing a RAB model for new nuclear power plants. It would also introduce new SAR legislation so that the Secretary of State or GEMA, with the consent of the Secretary of State, has the power to apply for the appointment of a nuclear RAB administrator in certain circumstances, including the generation company being unable to pay its debts.

- **Policy option 5: Nuclear RAB legislation with amended FDP legislation and new SAR legislation.** This option would introduce legislation on a nuclear RAB, which would be the first step towards introducing a RAB model for new nuclear power plants. It would also amend FDP legislation to make clear that security trustees and secured creditors do not fall within the definition of "associated" bodies under Section 67 of The Energy Act 2008, simply by virtue of them holding or exercising security enforcement rights. Finally, this option would also introduce new SAR legislation so that the Secretary of State or GEMA, with the consent of the Secretary of State, has the power to apply for the appointment of a nuclear RAB administrator in certain circumstances, including the generation company being unable to pay its debts.

3.3. Preferred option

28. The preferred option is to introduce legislation which would be the first step in allowing new nuclear power plants to be funded through a RAB model, with both amended FDP and new SAR legislation (policy option 5). BEIS believes this option will help achieve the policy objective of reducing the cost of new nuclear power plants by lowering the cost of finance.

29. The RAB model will reduce the cost of finance by allowing investors to share some of a project's construction and operating risks with consumers. The amended FDP legislation would remove ambiguity in Section 67 of The Energy Act 2008, removing potential barriers to finance for new nuclear power plants. The new SAR legislation would also protect the interests of consumers in the event that a generation company is unable to pay its debts or it is in the public interest for the company to be wound up.
30. This will be given effect through primary and following secondary legislation. The powers contained in the primary legislation are:

- To allow the Secretary of State to designate a nuclear company to benefit from the RAB model (subject to the satisfaction of certain criteria).
- To incorporate new conditions, and make amendments to certain terms, of a designated nuclear company’s electricity generation licence to implement a RAB model for that company.
- To enable the Secretary of State to publish a statement detailing the procedure and criteria for designation.
- To enable the Secretary of State the power to modify standard conditions and industry codes.
- To empower the Secretary of State to extend the designation notice beyond the expiration period (subject to satisfaction of certain criteria)
- To empower the Secretary of State to request information by notice to the generation company.
- To empower Ofgem to request information from, and provide information to the Office for Nuclear Regulation, Environment Agency and Electricity System Operator amongst others.
- To enable and support the functioning of the SAR for the RAB nuclear project, by granting the Secretary of State the power to request from the relevant court the appointment of a nuclear RAB administrator.
- To enable the Secretary of State to make modifications to existing insolvency legislation to allow the SAR to be effective in the future.
- To allow the Secretary of State to approve, reject or modify an Ordinary Transfer Scheme linked to the insolvency of the generation company.
- To allow the Secretary of State to make changes to standard generation licences to ensure the revenue stream functions into the future.

31. The secondary legislation is expected to implement the detailed mechanics of the revenue channel and set out the rules for insolvency in the SAR. The purpose of the SAR rules would be to give effect to the RAB Administration under the relevant clauses of the primary legislation. Without the SAR rules in place the provisions in the primary legislation would need to be significantly expanded to address the very detailed issues of procedure applicable to the various aspects of a RAB Administration. The SAR rules can be detailed, technical and complex relating to aspects such as the machinery of proving a debt and the manner in which a claim can be quantified. The approach to secondary legislation for the revenue channel is expected to be modelled on the approach taken in the various 2014 Contract for Difference regulations (chiefly the Contracts for Difference (Electricity Supplier Obligations) Regulations 2014). The key functions of the secondary legislation are expected to be:

- To enable the Secretary of State to make regulations in relation to RAB revenue collection contracts.
- To enable the Secretary of State to designate a body as a RAB Revenue Collection Counterparty.
- To create a transfer scheme by which the RAB Revenue Collection Counterparty’s responsibilities are transferred to another body in the event of financial difficulty or poor performance.
- To allow the Secretary of State to make changes to generation licences to ensure the revenue stream functions into the future.

32. Most of the primary legislation will come into effect two months following Royal Assent. A small number of provisions will be subject to early commencement and come into force upon Royal Assent, for example the power of the Secretary of State to designate the RAB Revenue Collection Counterparty. In line with commitments in the Energy White Paper to bring forward one large scale nuclear project to financial close this Parliament, it is anticipated that the Secretary of State will exercise their power to designate a project at Royal Assent. Subject to negotiations and the designation notice remaining in force, it is anticipated that the Secretary of State will then exercise their power to modify the generation licence of a designated company in Q4 2022.

3.3.1. Illustrative Theory of Change of preferred option
33. This Theory of Change illustrates how the preferred policy option may lead to further steps, which ultimately create impacts which will meet the policy objectives. These steps are referred to as inputs, outputs, outcomes and impacts in the Theory of Change.

34. This primary legislation is not expected to have any impact by itself. However, if secondary legislation is introduced and applied to modify the licence of a viable nuclear project under terms negotiated between the project and the Government, it is expected to give a longer-term outcome of enabling lower cost finance, which is expected to reduce the cost of new nuclear power plants.

35. This illustrative Theory of Change has been structured by the RAB measures, FDP measures and SAR measures covered by the primary legislation. Illustrative impacts are explored further in Sections 4 and 5.

Regulated Asset Base legislation

36. This primary legislation facilitates the introduction of the RAB model as an option for future nuclear projects. It does this by allowing the Secretary of State to designate a project to benefit from the RAB model and to modify that company’s licence to insert RAB conditions. This primary legislation also enables Ofgem to act as the regulator and allows the transfer of funds between suppliers and the generation company through the ability of the Secretary of State to designate a RAB Revenue Collection Counterparty. The RAB Revenue Collection Counterparty is a body designated by the Secretary of State, which will be responsible for collecting charges from suppliers and paying them to a generation company (and managing payment flows in the opposite direction where necessary).

37. By introducing secondary legislation on RAB revenue collection contracts, and then designating a RAB Revenue Collection Counterparty, a number of outputs will be achieved. This will include the creation of a well understood financing model which would reduce risk to investors, as well as a secure and reliable means of transferring funds between suppliers and a designated generation company.

38. The initial outcome would be that new nuclear projects become more attractive to investors, given the reduced risk and means of obtaining a regulated return. This would mean that future projects designated to benefit from the RAB model would be able to obtain investment at a lower cost of finance, compared to current funding models. Given the cost of finance is the main driver of project cost, this is expected to reduce the cost of new nuclear plants. The impact of this is that consumers will benefit from lower cost, lower carbon electricity.

Funded Decommissioning Programme legislation

39. The input of the changes to the FDP regime makes it explicit in The Energy Act 2008 that security trustees and secured creditors should not be classified as bodies “associated” with a nuclear site operator simply by virtue of them holding or exercising security enforcement rights.

40. An output of this would be to make clear that these bodies, insofar as they are carrying out these activities, are not caught by the definition of “associated”. Therefore, this gives reduced risk for security trustees and secured creditors when investing in nuclear projects.

41. An initial outcome is likely to be that the added clarity will make private sector investment in new nuclear projects more desirable. Therefore, this could lead to an intermediate outcome of increasing the availability of private investment finance, making it more likely that new nuclear projects will be delivered with reduced cost for consumers as a longer-term outcome. This would then lead to an overall impact of lower cost, lower carbon electricity.

42. Special Administration Regime legislation

43. The SAR measures in this primary legislation will allow the Secretary of State, or GEMA with the consent of the Secretary of State, to be able to apply to the courts to appoint a nuclear RAB administrator whose objective is to commence or continue generation at the plant and prioritise its rescue as a going concern.

44. If this is followed by the further input of the designation of a generation company to benefit from the RAB model, and the project then enters specified circumstances, including the very unlikely scenario of
insolvency, a key output would be to allow the Secretary of State to apply to the courts for the appointment of a nuclear RAB administrator. The initial outcome of this would be the appointment of an administrator whose objective would be to complete construction or keep the plant running in a manner which ensures safety and security of the power plant and protection of the environment at the site on which the installation is located.

45. The longer-term outcome of this is expected to be a reduced risk of consumers being deprived of the intended benefits from financing the building of a nuclear power plant using a RAB model. It also reduces the risk of the circumstances covered by the SAR necessitating a replacement source of consistent, low carbon electricity generation. The overall impact is expected to be to protect consumers, avoiding the additional funding necessary for replacement sources of electricity, thus lowering costs for consumers.

4. Illustrative monetised impacts

4.1. Methodology and assumptions

46. As outlined above, further steps are needed beyond this primary legislation, for a new nuclear power plant to be funded through a RAB model. Therefore, the RAB measures in this primary legislation do not have any impact by themselves. However, the modelling for this impact Assessment has calculated the cost of building and financing a new nuclear power plant through a CfD and through a RAB model, to illustrate the impact if a RAB model is introduced. The difference in cost between the CfD and the RAB model illustrates the impact of applying a RAB model to one new large scale nuclear plant. BEIS will produce another Impact Assessment if and when secondary legislation is introduced.

47. New legislation to amend FDP legislation would change the probability of being able to attract finance for a new nuclear power plant. This change in probability is difficult to quantify and so has been outlined in the non-monetised impact section below, rather than this monetised impacts section.

48. As outlined above, further steps are needed beyond this primary legislation for the SAR measures to have an impact. The impact of an SAR also depends on whether the generation company for a new nuclear power plant is unable to pay its debts. This probability is also difficult to quantify and so impacts relating to new legislation on the SAR have also been outlined in the non-monetised impacts section.

4.1.1. Construction cost

49. This modelling assumes the cost of constructing a new nuclear power plant (excluding financing costs) is the same whether the plant is funded through a CfD or through a RAB model. However, the cost of construction does determine the cost of finance when applied to the hurdle rate which is specific to a CfD or RAB model. This modelling assumes a construction cost of £7,700/kW or £13,000/kW.9

50. The construction cost assumptions have been calculated using data from the Hinkley Point C project, the only nuclear power plant currently under construction in GB. At the point of Final Investment Decision (FID), Hinkley Point C was estimated to have a construction cost (excluding financing cost) of £6,400/kW.10

51. Large scale infrastructure projects tend to cost more and take longer to build than expected. This is known as optimism bias. To redress optimism bias, the Hinkley Point C construction cost assumption has been increased by using data from past nuclear power projects.11

52. On average, the construction cost of a nuclear power plant is around:

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9 2021 prices
10 An initial construction estimate of £18.1bn has been converted into 2021 prices and divided by the power output of the plant to calculate this assumption.
11 Technical annex, nuclear data analysis, National Infrastructure Commission
• 20% higher than expected at the point of FID based on data from nth of a kind nuclear power plants built in Europe;\(^\text{12}\) and

• 100% higher than expected at the point of FID based on data from all nuclear power plants built after 1990.\(^\text{13}\)

53. Applying these optimism bias assumptions to the estimated construction cost of Hinkley Point C, at FID, gives the construction cost assumptions of £7,700/kW and £13,000/kW.\(^\text{14}\)

54. Hinkley Point C is not representative of all future nuclear power plants which would be built in GB. Future new nuclear power plants may be of different designs to Hinkley Point C and would be built in different locations. The modelling for this Impact Assessment assumes a range in construction costs to take account of some of the uncertainty around what designs of nuclear power plants will come forward in future and what their costs will be.

55. The optimism bias data compare the expected cost of new nuclear power plants at the point of FID, without any risk contingency applied. There is no publicly available data on the level of risk contingency which was applied to Hinkley Point C at FID. Therefore, the £7,700/kW and £13,000/kW construction cost figures are expected to be overestimates.

56. There are some reasons why the construction costs may be different under a CfD than under a RAB model. These have been explored in the non-monetised impacts section below.

4.1.2. Pre-licensing costs and infrastructure cost

57. Assumptions on pre-licensing costs and infrastructure cost have been taken from an Electricity Generation Costs report which was prepared by LeighFisher.\(^\text{15}\) The modelling for this Impact Assessment assumes the cost of constructing a new nuclear power plant (excluding financing costs) is the same whether the plant is funded through a CfD or through a RAB model. However, they do determine the estimated cost of finance when applied to the hurdle rate which is specific to a CfD or RAB model. Pre-licensing costs are assumed to be £280/kW and the infrastructure cost is assumed to be £14m.\(^\text{16}\)

4.1.3. Cost of finance

58. The cost of financing a new nuclear power plant has been modelled by applying hurdle rate assumptions to the construction cost, pre-licensing costs and infrastructure cost.\(^\text{17}\) A hurdle rate is the minimum return needed to incentivise investment. For the Business as Usual policy option, where a new nuclear power plant is funded through a CfD, the hurdle rate is assumed to be 9%. This matches the expected return on the Hinkley Point C nuclear power project at FID.\(^\text{18}\)

59. The hurdle rate for a new nuclear power plant, funded through a CfD, is likely to be higher than 9%. This level was achieved at Hinkley Point C due to exceptional circumstances. Strategic investors were willing to invest at a relatively low hurdle rate for wider benefits linked to creating further avenues for investment in the future. It might not be possible to attract similar strategic investors for future new nuclear power plants, which is likely to lead to higher hurdle rates.

60. For the policy options where a new nuclear power plant is funded through a RAB model, the central hurdle rate assumption is 5%. This assumption is based on the allowed return in other regulated

\(^{12}\) The 20% assumption is based on the median value, rounded to one significant figure.

\(^{13}\) The 100% assumption is based on the median value, rounded to one significant figure.

\(^{14}\) 2021 prices

\(^{15}\) See page 134 of Electricity Generation Costs report

\(^{16}\) 2021 prices

\(^{17}\) The cost is modelled as a payment for a loan based on constant payments and constant interest rate (hurdle rate).

\(^{18}\) See page 27 of National Audit Office report on Hinkley Point C.

The expected return for Hinkley Point C was 9.04% on a post-tax, nominal basis. For the purposes of analysis for this Impact Assessment, that has been converted to a pre-tax, real hurdle rate and rounded to one significant figure. That gives a hurdle rate assumption of 9%.
industries within GB. The allowed return under a RAB for a new nuclear power plant may be higher or lower than 5%. If interest rates are relatively low, that would lead to lower allowed returns. Alternatively, if the risk to investors of a new nuclear plant, even with a RAB model, is relatively high, that would lead to higher allowed returns.

61. Sensitivity analysis has been carried out to illustrate uncertainty in the hurdle rate for a new nuclear power plant. Under a RAB model, the low hurdle rate assumption is 4% and the high hurdle rate assumption is 6%. This range covers a number of allowed returns in other regulated industries within GB.

4.1.4. Other cost assumptions

62. This modelling is based on assumptions on the cost of building and financing a new nuclear power plant. It does not include assumptions on the cost of running or decommissioning a new nuclear power plant as that is assumed to not be affected by the funding model.

4.1.5. Construction period

63. For the purposes of this modelling, the construction period is the length of time between a new nuclear power plant reaching FID and the point where the first unit of a nuclear power plant begins generating electricity. The construction period is assumed to be 13 or 17 years. The second unit of a new nuclear power plant is assumed to begin generating electricity a year after the first unit.

64. The construction period assumptions are based on data from the Hinkley Point C project, adjusted for optimism bias. The optimism bias data comes from the same dataset which has been used for the construction cost assumptions.

65. Hinkley Point C was estimated to have a construction period of nine years at FID. The amount of pre-development work was relatively high for Hinkley Point C. Carrying out more pre-development work should help to reduce the construction period. Therefore, the nine-year construction period estimate for Hinkley Point C may be slightly low when compared with similar estimates for future nuclear power plants which may have less pre-development work.

66. On average, the construction period of a nuclear power plant is around:

- 40% higher than expected at the point of FID from data of nth of a kind nuclear power plants built in Europe; and
- 90% higher than expected at the point of FID from data of all nuclear power plants built after 1990.

67. Applying these optimism bias assumptions for a range of plant designs to the construction costs above gives generalised construction period assumptions of 13 and 17 years.

68. Hinkley Point C is not representative of all future nuclear power plants which would be built in GB. Future new nuclear power plants may be of different designs to Hinkley Point C and would be built in different locations. The modelling for this Impact Assessment assumes a range in construction periods to take account of some of the uncertainty around what designs of nuclear power plants will come forward in future and what their construction periods will be.

69. The optimism bias data compare the expected construction period of new nuclear power plants at the point of FID, without any risk contingency applied. There is no publicly available data on the level of risk contingency which was applied to Hinkley Point C at the point of FID. Therefore, everything else being equal, the 13 and 17 year construction period figures are expected to be overestimates.

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20 The 40% assumption is based on the median value, rounded to one significant figure.
21 The 90% assumption is based on the median value, rounded to one significant figure.
4.1.6. Other technical assumptions

The other technical assumptions used in this modelling are based on a combination of data from the Hinkley Point C project and the Electricity Generation Costs report which was prepared by LeighFisher. Those assumptions are summarised in the table below.

Table 1: Other technical assumptions

<table>
<thead>
<tr>
<th>Assumption Name</th>
<th>Description</th>
<th>Value</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant operating period</td>
<td>Time between a unit of a nuclear power plant coming online and closing</td>
<td>60 years</td>
<td>LeighFisher report, page 134</td>
</tr>
<tr>
<td>Maximum power output</td>
<td>Level of power, in the form of electricity, produced by the plant when running at full capacity.</td>
<td>3,300 MW</td>
<td>Hinkley Point C planning assumption²²</td>
</tr>
</tbody>
</table>

70. A FID date, the date at which pre-development costs stop and construction costs begin, of 2023 was chosen to allow time between the legislation coming into force and the RAB model being applied.

71. The value of a nuclear power plant will be determined by the volume of electricity it generates and the value of each unit of electricity produced. This modelling assumes the value of electricity produced is the same whether it is funded through a CfD or through a RAB model. Therefore, no assumptions have been made about the value of electricity generated by a nuclear power plant.

4.2. Results

72. The illustrative costs of building and financing a new nuclear power plant have been outlined in the tables below. The first table shows the total cost under a CfD. The second table shows the total cost under a RAB model. The third table shows the difference between the total cost under a CfD and under a RAB model.

Table 2: Cost of building and financing a new nuclear power plant under a CfD (2021 prices, discounted to a 2021 base year)

<table>
<thead>
<tr>
<th>Present value of cost (9% hurdle rate)</th>
<th>Nth of a kind, Europe, optimism bias assumptions</th>
<th>Post 1990 optimism bias assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£68bn</td>
<td>£120bn</td>
</tr>
</tbody>
</table>

Table 3: Cost of building and financing a new nuclear power plant under a RAB model (2021 prices, discounted to a 2021 base year)

<table>
<thead>
<tr>
<th>Present value of cost (4% hurdle rate)</th>
<th>Nth of a kind, Europe, optimism bias assumptions</th>
<th>Post 1990 optimism bias assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>£24bn</td>
<td>£38bn</td>
</tr>
<tr>
<td>Present value of cost (5% hurdle rate)</td>
<td>£31bn</td>
<td>£49bn</td>
</tr>
<tr>
<td>Present value of cost (6% hurdle rate)</td>
<td>£38bn</td>
<td>£63bn</td>
</tr>
</tbody>
</table>

Table 4: Policy options 2, 3, 4 and 5: reduction in cost of building and financing a new nuclear power plant under a RAB model, compared with a CfD (2021 prices, discounted to a 2021 base year)

²² This assumption has been rounded to 2 significant figures. The Hinkley Point C planning assumption was 3,260MW.
<table>
<thead>
<tr>
<th>Nth of a kind, Europe, optimism bias assumptions</th>
<th>Post 1990 optimism bias assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net present value of RAB model (4% hurdle rate)</td>
<td>£44bn</td>
</tr>
<tr>
<td></td>
<td>£82bn</td>
</tr>
<tr>
<td>Net present value of RAB model (5% hurdle rate)</td>
<td>£38bn</td>
</tr>
<tr>
<td></td>
<td>£70bn</td>
</tr>
<tr>
<td>Net present value of RAB model (6% hurdle rate)</td>
<td>£30bn</td>
</tr>
<tr>
<td></td>
<td>£57bn</td>
</tr>
</tbody>
</table>

73. With the central hurdle rate assumption, a RAB model is calculated to reduce the present value cost of building and financing a new nuclear power plant by between £38bn and £70bn.

74. The sensitivity analysis, with hurdle rates of 4% and 6%, increase the range of values. The reduction in present value cost is as low as £30bn with a 6% hurdle rate assumption (and nth of a kind, Europe optimism bias assumption) and as high as £82bn with a 4% hurdle rate assumption (and post 1990 optimism bias assumptions).

5. Risks and non-monetised impacts

75. The monetised impacts suggest the RAB model in policy options 2, 3, 4 and 5 has considerable cost savings compared with a CfD in the business-as-usual option. There are also some non-monetised impacts which have been factored into the decision on the preferred policy option. These are outlined below.

5.1. Risk of increased construction cost and duration under a RAB model

76. A RAB model reduces the amount of risk which is placed on investors. By taking risk away from investors, more of the impact of construction cost and duration overruns falls on consumers rather than investors. If too much risk is taken away from investors, they would lack the incentives needed to take action to reduce the risk of construction cost and duration overruns. If too much risk is taken away from investors, a RAB model would then lead to higher construction cost and duration.

77. This is an important non-monetised impact. If construction cost and duration overruns are considerable, it is possible that increase in cost could outweigh the reduction in cost of finance achieved by a RAB model.

78. To mitigate this risk, it is important that a RAB model for any new nuclear power plant is designed to ensure an efficient allocation of risk. Risk should be placed with investors where they are able to take action to manage that risk. However, risk should be passed to consumers where investors are unable to take action to manage that risk.

5.2. Flexibility

79. The modelling for this Impact Assessment assumes that the value of electricity generated by a nuclear power plant is the same under a CfD as under a RAB model. However, there may be some difference in the value of electricity generated which is difficult to monetise.

80. Nuclear power plants in GB tend to generate electricity whenever they are able to. To reduce the cost of the whole electricity system it is also useful to have some generation capacity which can act flexibly, producing power when demand for electricity is very high and not producing power when demand for electricity is very low.

81. A CfD should generally incentivise a nuclear power plant to maximise electricity generation. It is possible that there will be times when a nuclear power plant with a CfD is incentivised to generate electricity when the cost to the system of generating is higher than the value of electricity which would be generated. At these times, it would reduce the cost of the whole electricity system if the nuclear power plant did not generate electricity.
82. It is possible to place incentives on a nuclear power plant under a RAB model which incentivises the plant to adjust the amount of electricity generated in response to system needs. Therefore, the RAB model in policy options 2, 3, 4 and 5 should allow a nuclear power plant to operate more flexibly which could reduce the overall cost of the electricity system.

83. The economic benefit of the increased flexibility is uncertain as it will depend on the design of a RAB model and the cost of adjusting the volume of electricity generation by a nuclear power plant, which will depend on the design of the nuclear power plant. However, the benefit of this increased flexibility is expected to be small in comparison with the reduction in cost of finance achieved through a RAB model.

5.3. Number of new nuclear power plants

84. The illustrative modelling for this Impact Assessment assumes one new nuclear power plant would be built in GB through a CfD (following on from policy option 1) or through a RAB model (following on from policy options 2, 3, 4 and 5). The number of new nuclear power plants which will be built in GB is uncertain so a consideration of multiple plants has not been examined in the modelling for this Impact Assessment, but would be part of any assessment to introduce a RAB model for a specific new nuclear power plant.

85. If more than one new nuclear power plant is built in GB, the impacts of introducing a RAB model will be greater than estimated in this Impact Assessment. If no new nuclear power plants are built in GB, the impacts of introducing RAB, FDP and SAR legislation is expected to be negligible.

86. RAB legislation may also change the number of new nuclear power plant which are built in GB, relative to business as usual. If RAB legislation does change the number of new nuclear power plants which are built in GB, the impact of the RAB legislation would depend on the cost of other electricity generating technologies.

5.4. Administration costs

87. There will be administrative costs associated with setting up and monitoring a CfD or a RAB model. These costs are expected to be small in comparison with the reduction in cost of finance achieved through a RAB model.

5.5. Amended legislation on Funded Decommissioning Programmes

88. Policy options 2, 3, 4 and 5 have the same illustrative monetised impacts. However, there are some differences in impacts which have not been monetised.

89. Policy options 3 and 5 would amend the legislation on FDPs. This amended legislation would make clear that a security trustee or secured creditor will not be a body "associated" with a site operator under Section 67 of The Energy Act 2008, simply by virtue of them holding or exercising security enforcement rights. This change is likely to enable debt financing for new nuclear power plants.

90. If the amended legislation on FDPs does enable debt finance, that is likely to reduce the cost of financing a new nuclear power plant. This would be an additional benefit on top of the impacts which were modelled for this Impact Assessment.

91. Theoretically, an unintended consequence could be that, by explicitly excluding bodies or actions from the definition of bodies "associated" with the site operator, this dilutes the original intention of the legislation to ensure that it catches those bodies who should be held responsible for decommissioning costs in the event that the operator is unable to fulfil its obligations under an FDP. However, BEIS does not consider this to be the case here. BEIS's view is that the legislation was never intended to capture the security trustee or secured creditors simply by virtue of them holding or exercising security enforcement rights, thus the amendments are clarificatory by nature.

92. Furthermore, there is a risk of creating a perverse incentive which may encourage investors to game the legislation. This could occur by investors undertaking actions or structuring their investments in
creative ways intended to take advantage of the amendment and thereby circumnavigate their potential
department to decommissioning liabilities, where this would not otherwise be possible, thus subverting the
policy and exposing the taxpayer to greater risk. BEIS is therefore drafting the exemption to ensure that
those bodies who the legislation was originally intended to capture still fall within the scope of the
definition of bodies "associated" with the site operator, and that the clarificatory amendment is carefully
drafted to correctly identify the security enforcement rights that security trustees and secured creditors
would be expected to hold or exercise.

5.6. New legislation on Special Administration Regimes

93. The probability of insolvency for a nuclear plant is considered low. However, the implications of an
entity which owns a nuclear power plant and is in receipt of funding provided by a RAB model (the
generation company) becoming insolvent could be significant. As outlined above, the SAR measures in
this primary legislation have no impact by themselves. This section illustrates what the potential impacts
could be if further steps are taken.

94. Policy options 4 and 5 would introduce SAR legislation. The proposed legislation will provide the
Secretary of State with the power to seek the appointment of a nuclear RAB administrator in the event
that the generation company is unable to pay its debts or it is in the public interest for the company to be
wound up. The proposed provisions will allow the Secretary of State to provide financial assistance in
connection with an RLNC administration order, with the option to recoup any shortfall in financial
assistance provided through a mechanism which levies a charge against supply companies either during
the course of, or after an RLNC administration order has concluded. It is anticipated that these costs
would be passed down to consumers.

95. The main feature of a RAB model is the right given to the generation company to charge a
regulated price to users through energy suppliers, meaning consumers have contributed significantly
toward the costs of construction and operation of the plant. In an insolvency scenario, a SAR would have
set objectives to continue generation and to rescue the plant as a going concern. This would avoid a
scenario under corporate administration whereby the plant may be wound up to the benefit of creditors,
which would mean consumers do not realise the benefits of a Nuclear RAB project and also require an
alternative source of generation.

6. Impact on small and micro businesses

96. As outlined above, the nuclear RAB measures and updated FDP legislation is estimated to have
no impact as a result of this primary legislation by itself. The estimated impact of the new legislation on
EARs is zero. Therefore, the estimated impact of this primary legislation on small and micro businesses
is zero.

97. If a nuclear RAB model is implemented on a new nuclear power plant in future, it would impact
small and micro businesses by creating jobs in the supply chain and would indirectly impact small and
micro business as a result of any costs or cost savings which are passed through to electricity suppliers
and then consumers.

7. Equalities Impact Assessment

98. A Public Sector Equality Duty (PSED) assessment has been completed for this primary legislation.
The primary legislation is not expected to have any impact, by itself, on protected characteristic groups
(PCGs). However, if secondary legislation is agreed at a later date, there may be some impacts on
PCGs. Those impacts have been illustrated below.

99. This assessment will be kept under constant review. A separate PSED assessment will need to be
conducted, reviewed and monitored for any following secondary legislation, and when applied to modify
the licence of a viable nuclear project negotiated between the project and the Government.

100. The PSED gives due regard to meeting the three aims under Section 149 of The Equality Act 2010
including eliminating unlawful discrimination, the advancement of equality of opportunity among those
with protected characteristics and fostering good relations between people with protected characteristics.
In relation to this legislation, there are no disproportionate impacts currently identified for: Marriage/Civil Partnership, Religion or Belief, Sex, Gender Reassignment or Sexual Orientation PCGs.

101. There are anticipated impacts on the following characteristics, should this primary legislation and subsequent secondary legislation be applied to modify the licence of a viable nuclear project negotiated between the project and Government, but these are not expected to be significant:

- **Age:** New nuclear, funded through a RAB model, will slightly disadvantage older age groups who, despite facing relatively small bill increases owing to the RAB model during the plant’s construction, may not benefit as equally as younger age groups from the reduction in the bills from the low-carbon electricity produced once the plant is operating, due to the length of the construction period. The other parts of the legislation will have no impact on this group.

- **Disability and Race:** Disability Groups and Ethnic Minorities are disproportionately represented in lower income households. Lower-income households are disproportionately impacted by changes to electricity bills given that any increase represents a larger share of their household income than those in middle- or higher-income households. Therefore, the RAB model would disproportionately increase the bills of these groups in the short-term but disproportionately decrease the bills of these groups over the long-term.

- **Pregnant/Maternity Leave Groups:** Any increase in consumer electricity bills due to a RAB model could particularly impact people on unpaid maternity leave, or unable to work due to pregnancy. Therefore, the RAB model would disproportionately increase the bills of these groups in the short-term but disproportionately decrease the bills of these groups over the long-term.

102. Based on this analysis, it was concluded that the legislation should continue as planned, with equality considerations kept under review. Any projects undertaken through a RAB, and using the other features included in the legislation, will be supported by engagement with the BEIS Affordability Unit and the Fuel Poverty Strategy Team to assess the project’s consumer bill impacts on PCGs. They will also actively monitor the equality implications of the nuclear workforce.

8. A summary of the potential trade implications of measure

103. The impacts from these measures are not considered to impact international trade and investment.

9. Monitoring and Evaluation

104. The monitoring and evaluation plan will be devised in full detail following the enactment of any secondary legislation following the primary legislation discussed in this Impact Assessment. This is because it will be the secondary legislation, when applied to modify the licence of a viable nuclear project under terms negotiated between the project and the Government, which will enact the impacts rather than the primary legislation discussed here. However, this section details illustrative examples of what an appropriate monitoring and evaluation framework could look like for such secondary legislation.

105. The objectives of a monitoring and evaluation (M&E) plan could be to:

- assess the effectiveness of the legislation(s), and/or the application to modify the licence of a viable nuclear project, in meeting its objectives; and

- provide evidence and justification to influence future funding models for future nuclear projects.

106. To assess what needs monitoring and evaluating, SMART objectives would be devised for the policy.

*Table 5: Indicative examples of SMART objectives*
<table>
<thead>
<tr>
<th>SMART objective</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bring at least one new large-scale (over 1 Gigawatt) project to FID in this Parliament, subject to value for money and all relevant approvals.</td>
<td>This commitment was made in the Prime Minister's Ten Point Plan.</td>
</tr>
<tr>
<td>Reducing the cost of a new nuclear power plant (through lowering cost of finance) compared with a counterfactual which does not involve this legislation.</td>
<td>As outlined in Section 4.2, the cost of finance is an important driver of the cost of a new nuclear power plant.</td>
</tr>
</tbody>
</table>

107. These objectives would fulfill the aim of this legislation of reducing the cost of new nuclear power plants by enabling lower cost finance, which would help to deliver a lower cost electricity system. Objectives would be met by progressing through the different stages of the Theory of Change (ToC), as outlined in Section 3.3.1.

108. Pilot testing would likely involve testing the data permissions, collection, analysis and quality assurance processes across the relevant stakeholders. This would likely also be conducted ahead of M&E rollout to ensure the monitoring processes were robust, operational and ready in advance. This could involve conducting monitoring on an annual basis, with metrics developed to assess the programme's progress and inform evaluation activity, as well as catching changes early in the KPIs to allow timely correction to emerging issues. These metrics could potentially include things like the overall cost of finance, the proportion of risk borne by security trustees, secured creditors and/or consumers, among other metrics. Where data was already being collected for monitoring other nuclear projects – likely from stakeholders under similar but different funding models – this data would be used to avoid duplication.

109. An evaluation of the funding model could be completed, and this could include a combination of process evaluation to potentially expand on the ToC and assess the effectiveness of the funding model; interim progress assessments, either against a baseline or towards policy objectives to assess progress towards policy objectives, and/or value for money assessments to ensure the finance package agreed is value for money for taxpayers. The type of high-level questions an evaluation could explore could include:

- How effective were the processes responsible for establishing and running the RAB model?
- To what extent was there an appropriate level of risk to investors and/or reduced level of risk for security trustees and secured creditors which helped ensure a cheaper and timely large-scale nuclear project construction plan?
- How effective was the RAB model in generating increased levels of private investment?
- What are the implications of the monitoring and evaluation findings for future nuclear projects?

110. Potential methods could include a combination of:

- Focus groups with key stakeholders (depending on how many are involved)
- In-depth interviews with key stakeholders to explore themes gathered from focus groups in more depth
- Simulation exercises to assess counterfactual assumptions and data
- Surveys
- Collecting statistical data and using existing administrative data (where possible) for monitoring purposes
An evidence/systematic review

111. The complexities and lengthy duration involved in bringing a new nuclear power plant online mean there are several different phases of development for the project, some of which need completing before FID. Evaluating these early phases would be useful for establishing good practice for future nuclear projects. Therefore, evaluation could be conducted at, or just after, FID (if this is achieved), while monitoring could operate throughout all years with the frequency explained above. Such an approach would allow evidence from monitoring and evaluation to inform future nuclear projects and adapt funding models accordingly. Such a monitoring and evaluation plan could be completed on a budget of an initial range equating up to 0.01%-0.025% of a large-scale nuclear plant’s likely cost (making the budget around £2 million-£5 million) to account for robust, reliable and high-quality monitoring and evaluation to be conducted, implemented, and drawn upon for future nuclear projects. The monitoring and evaluation outputs could also be published to ensure maximum public transparency.