

Tax Policy Impacts on Energy Infrastructure Investment: CfD case study

Report initially commissioned by: EDF, Equinor, Ørsted, Ocean Winds, RWE, SSE, Vattenfall.

Further analysis subsequently commissioned by OWIC.

26 Aug 2026

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Context: Tax policy and renewable investment in the UK



The current UK tax regime for large renewable energy investments, combined with the typical single-asset SPV structure used in these projects, limits the ability of developers to fully benefit from capital allowances and other tax reliefs, particularly when compared to other large infrastructure sectors.



Industry stakeholders have raised concerns that the current tax regime is increasing the cost of energy infrastructure investment in the UK. While a case for change has been put forward, there is currently limited quantitative evidence on the costs and benefits of potential changes.



The report has been commissioned to help address this gap by quantifying the impact of different tax policy scenarios on CfD strike prices and illustrating the associated trade-offs. We focus the analysis on fixed bottom offshore wind ahead of the 8th CfD Allocation Round (AR8) later in 2026.



A more favourable tax regime is likely to lead to lower strike prices and lower costs for consumers. However, a more favourable tax regime can also result in delayed or reduced tax receipts. This work aims to shed light on this potential trade-off.



While the work uses offshore wind as the quantitative example, we expect that the directional findings are likely to have broader applicability to other supported low carbon infrastructure. Results could differ under alternative assumptions.

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We estimate a base case strike price using publicly available data and estimate the impact of different tax policies on it



Modelling Framework

- We model a representative (marginal) offshore wind project and set the **strike price to meet the investor's required equity hurdle rate** under each tax regime.
- Following a change in tax policy, we **adjust the strike price** to find the **level** at which the **project just meets** investors' required equity **hurdle rate**
- We then evaluate the **net effect on consumers and tax collection** based on the net present value of future cashflows, discounted at the Social Discount Rate.



Project definition and Data

- We assume a **single project finance structure**.
- The focus is an **offshore wind asset**, but insights are likely applicable to other low-carbon technologies too.
- The analysis is based on an **illustrative project** structure – in practice, all elements may vary.
 - Inputs are based on **publicly available data** from DESNZ and Ofgem reports
 - Parameters are **calibrated**¹ to match strike price levels that are achieved in AR7.

1) Taking higher or lower values from the ranges presented.

We deploy Frontier’s strike price model to estimate a strike price for an archetype offshore windfarm

Project

■ 1,297 MW, 30-year useful life

■ £170/kW pre-development costs

■ £2,100/kW construction costs

■ 56% load factor

Financing and others

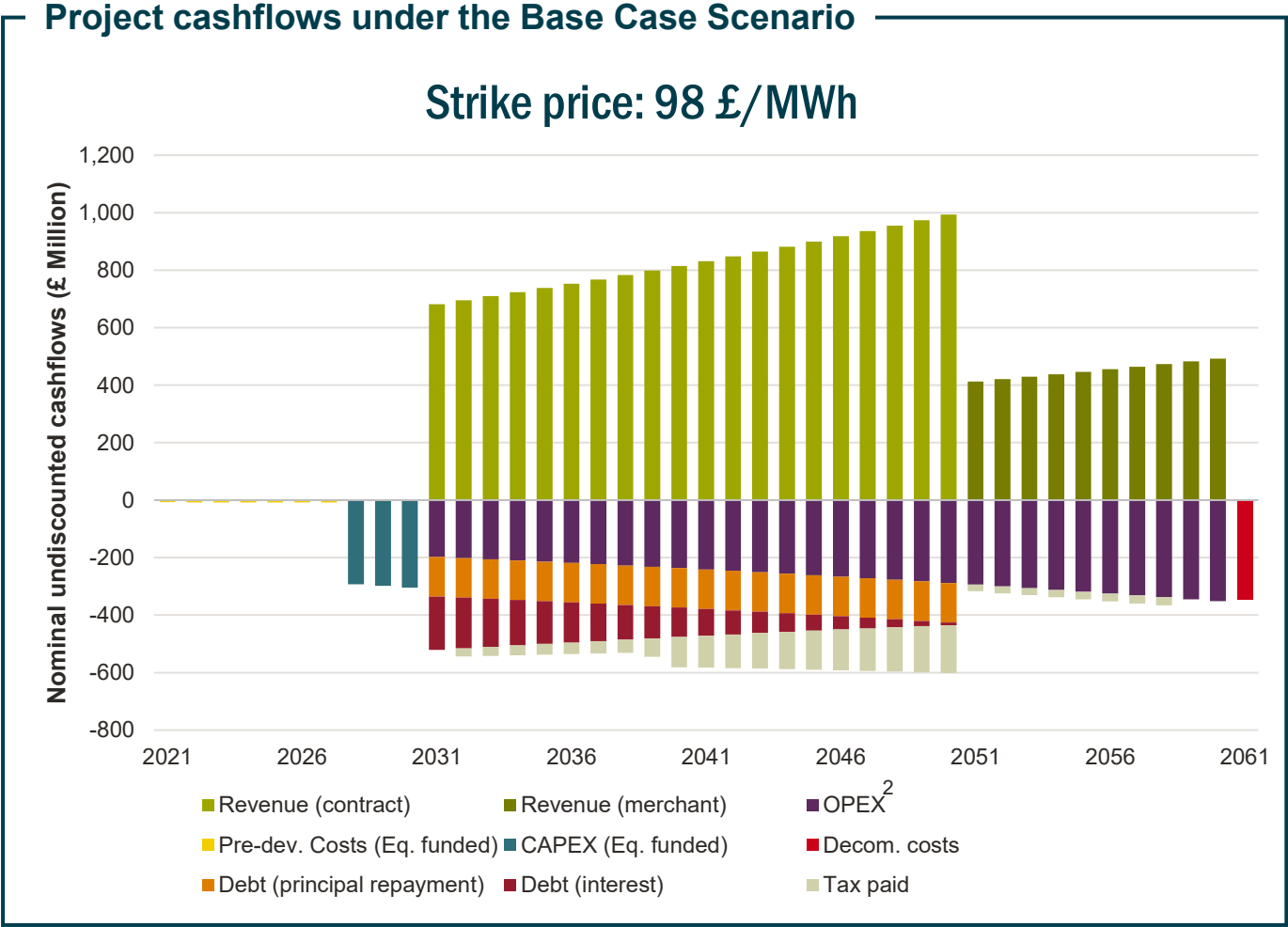
■ 2% inflation

■ 75% gearing

■ 6.8% Cost of debt (nom., pre-tax)

■ 3.5% Social Discount Rate (real)

■ 16.96% Equity hurdle rate (nom., post-tax)¹



1)

We recognise that a range of equity hurdle rates are likely used in the market. For this analysis, we have relied on a public source. We have used values from [CEPA's report](#) for DESNZ on "Hurdle rate estimates for electricity sector technologies" from July 2025.

2)

OPEX include Fixed O&M, Insurance and Connection and Use of System Charges. Full detail about the assumptions can be found in the Annex.

Our base case strike price assumes the current UK tax regime applicable for offshore wind



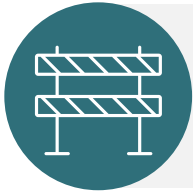
Capital expenditure (capex) qualifies for capital allowances, allowing the project to deduct part of its investment from taxable profits.

- In the **first year** of operations, **50% of capex** can be **deducted** from taxable profits
- The remaining capex is deducted gradually through **annual writing down allowances (WDAs) of 6%**, applied on a **declining balance basis** (i.e. 6% of the remaining undeducted amount each year).
- **Development costs (Devex)** do not qualify for capital allowances.



Tax deductions are applied against **pre-tax profits**. If deductions exceed profits

- The project makes a **tax loss**, pays **no corporation tax**, and
- The loss is **carried-forward** to offset future profits.



The use of carried-forward losses is **restricted (loss capping regime)**

- Each year, the first **£5m of profit** can be fully offset.
- Any remaining profit can only be offset **up to 50%**



Losses are effectively **ring-fenced within project companies** due to Special Purpose Vehicle (**SPV**) structures:

- They cannot be shared with investors or other group companies,
- So the value to the project developer of expected tax losses depends on the project generating sufficient future profits.

We assess the impact of seven alternative tax approaches on the strike price

S2 – Full Expensing

- 100% first-year capital allowance

S3 – Devex Inclusion

- Pre-development costs included in capital allowances
- Expands the pool of deductible investment

S4 – No Loss Capping

- Removes the 5m + 50% of profit restriction on use of carried-forward losses
- Allows faster utilisation of tax losses

S5 – Enhanced WDAs

- 25% WDAs (vs. 6% in Base Case)
- Devex excluded from capital allowances
- Speeds up tax relief from deductible investments.

S6 – Monetisation of tax losses

- Assumes full value extraction from available tax deductions, regardless of the SPV's taxable profit position in the relevant period.
- This could be achieved through several different policy approaches.
- Unlocks value of tax assets.

Additional scenarios exploring reform combinations

S7 – Devex Inclusion and Enhanced WDAs (25%)

- The scenario combines S3 with S5
- Pre-development costs are included in capital allowances
- 25% WDAs (vs. 6% in Base Case)

S8 – Devex Inclusion, No Loss Capping and 14% WDAs

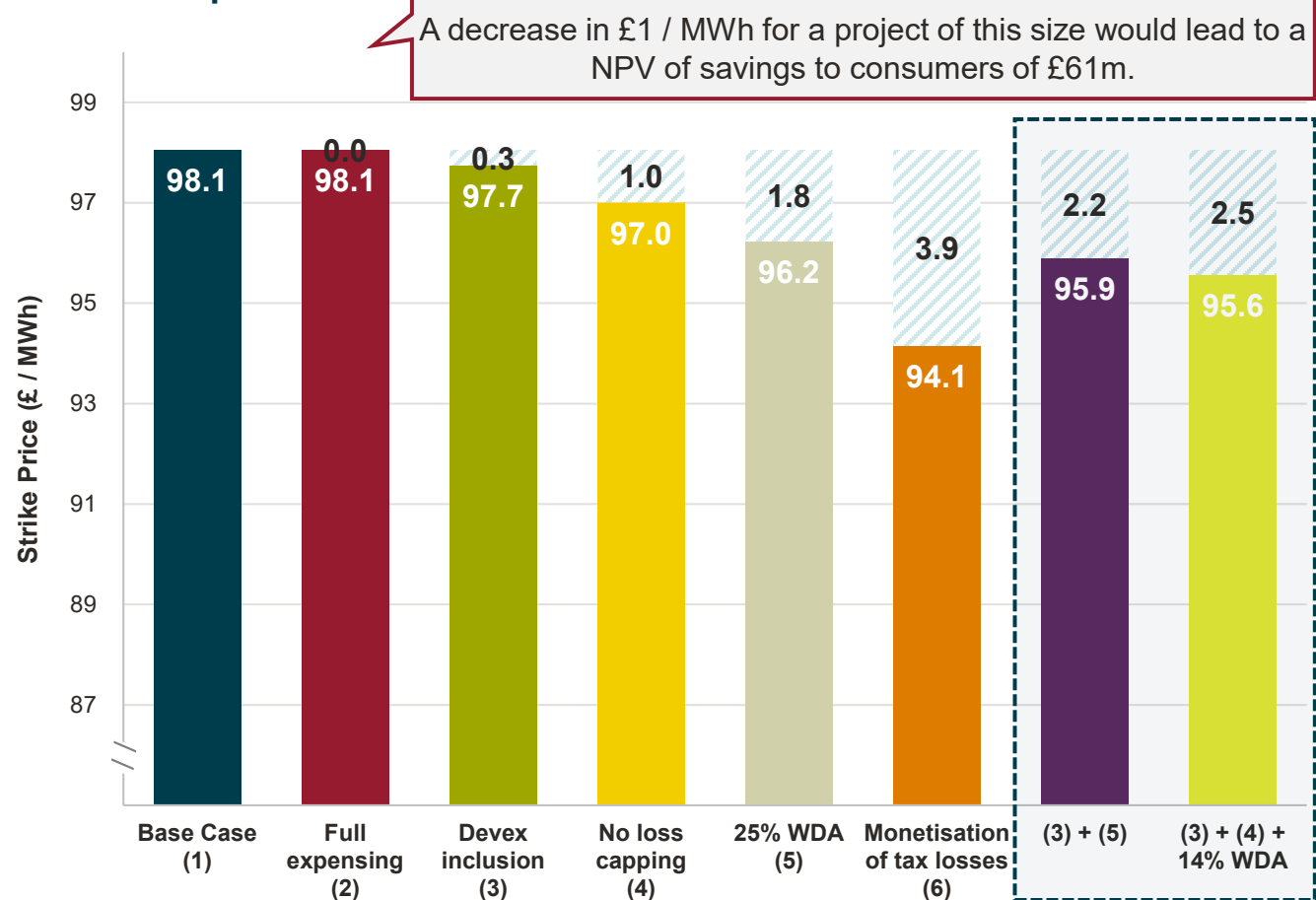
- Pre-development costs are included in capital allowances
- Removed restriction on use of carried-forward losses
- 14% WDAs (vs. 6% in Base Case)

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Policies that deliver tax relief sooner drive the largest reductions in strike prices

Strike prices



Explanation

- The impact of the scenarios explored ranges from **£0 to £3.9/MWh reduction in strike prices**.
- **Full expensing and Devex inclusion** have **muted impacts**, as developer benefits are **concentrated in later years** and therefore less valuable to investors.
- **Removing loss capping and accelerating WDAs** generate **more immediate tax relief**, leading to stronger reductions in strike prices.
- **Monetisation of tax losses** delivers the **largest and most immediate impact** and could be achieved in different ways.
- Combining policies can also achieve additional reductions in strike prices.
- The following slides set out the **key drivers underpinning these results** in more detail.

Full expensing has a limited impact because beneficial effects for projects are concentrated in later years

0 £/MWh

Scenario 2: Full expensing

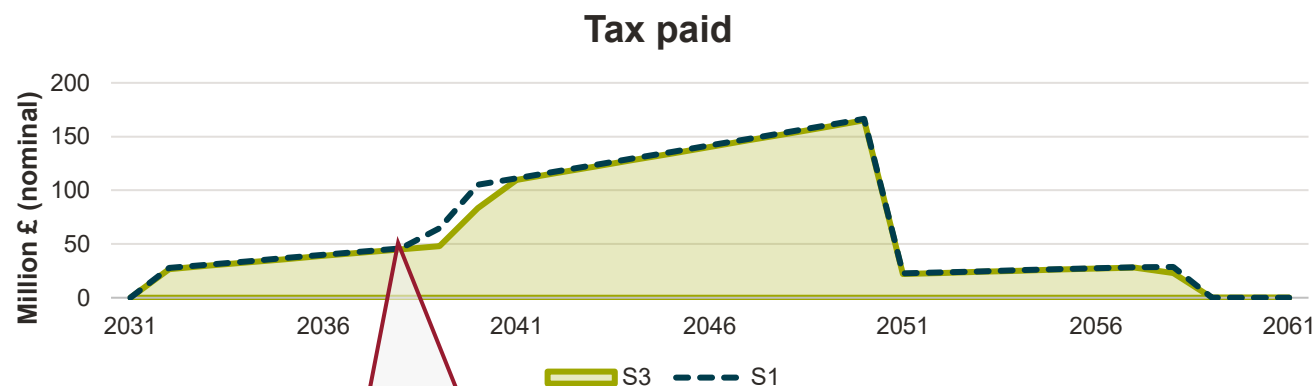


- Full expensing creates a **trade-off**:
 - Under full expensing, the project generates higher taxable profits from 2032 because there are no WDAs to reduce taxable profits.
 - However, full expensing creates a larger pool of carried-forward losses, which are subject to loss capping.
- Under the base case, carried-forward losses are exhausted by 2038; under full expensing, deductions continue into later years.
- The trade-off results in a net **impact** on strike price that is **negligible** (£0.002 / MWh).
- The beneficial effects are concentrated in later years, where:
 - Remaining tax shields are realised
 - But heavily discounted (e.g. ~0.05 nominal equity discount factor by 2041)
- The reform has a limited overall impact due to low present value of post-2038 tax benefits.

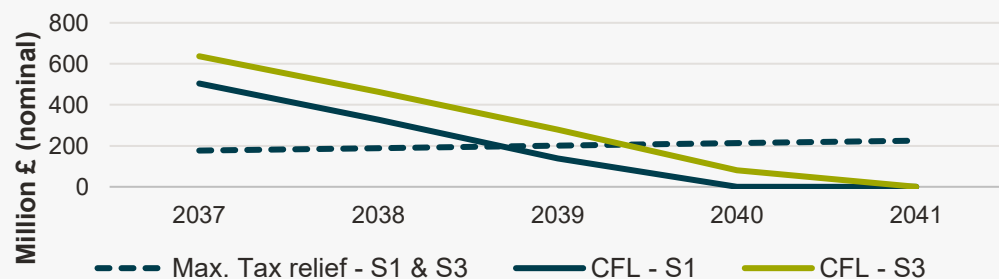
While the Devex inclusion reduces overall tax paid, its effects are limited due to loss capping

- 0.3 £/MWh

Scenario 3: Devex inclusion



Maximum tax relief and available carried-forward losses (CFL)

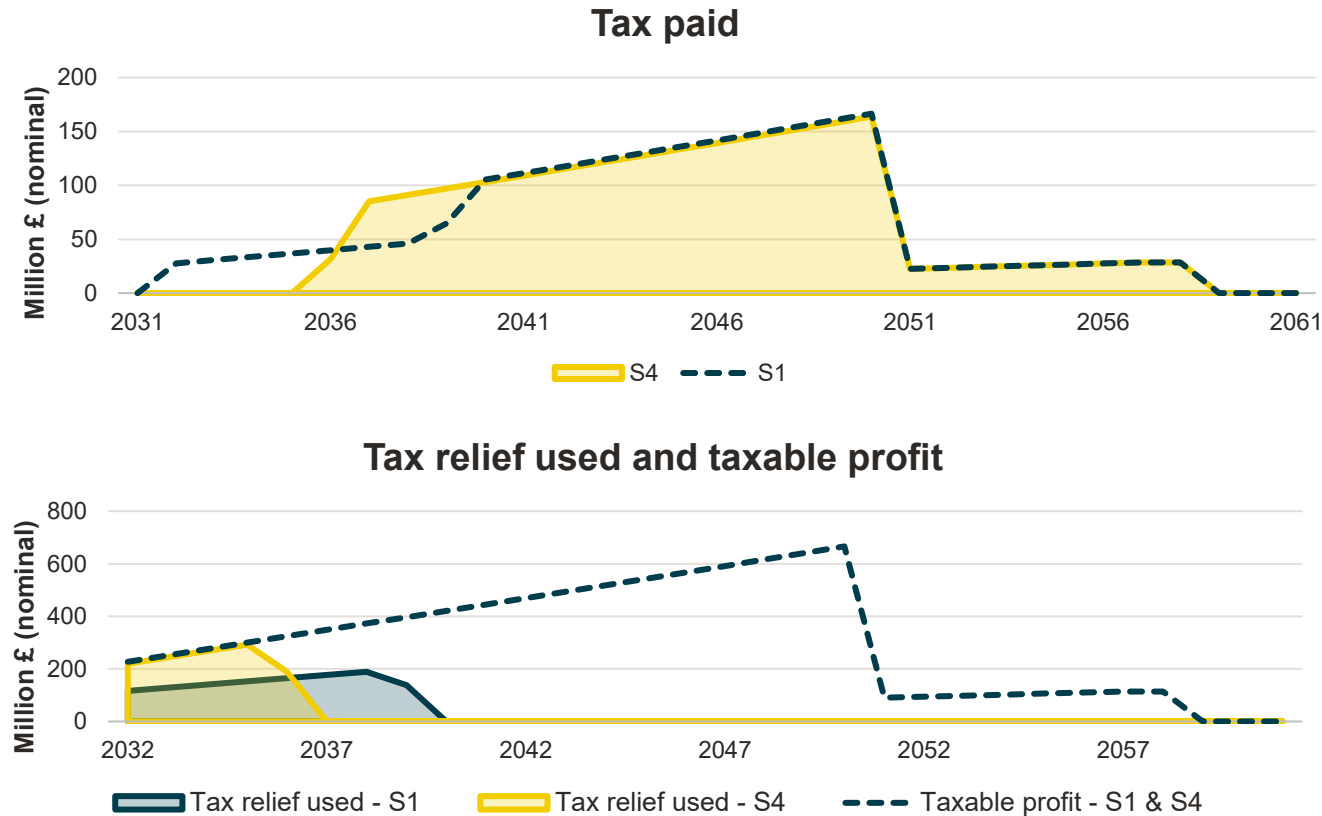


- Up to 2039, there is little difference between scenarios, as the **loss cap binds** in both cases and **additional allowances from Devex cannot be utilised**.
- Under the Base Case, the stock of available carried-forward losses falls below the loss cap from 2039 onwards. In contrast, under the Devex inclusion scenario, a larger stock of carried-forward losses allows for **additional tax relief between 2039 and 2041**.
- Overall, **carried-forward losses and WDAs are larger**, allowing both for **additional tax relief** and a **faster use of relief**.
- However, the major **impact is concentrated in later years**, with only **minor differences in earlier periods** due to changes in the WDA profile.

Removing the loss cap has a considerable impact because it delivers short-term tax relief

- 1.0 £/MWh

Scenario 4: No loss capping

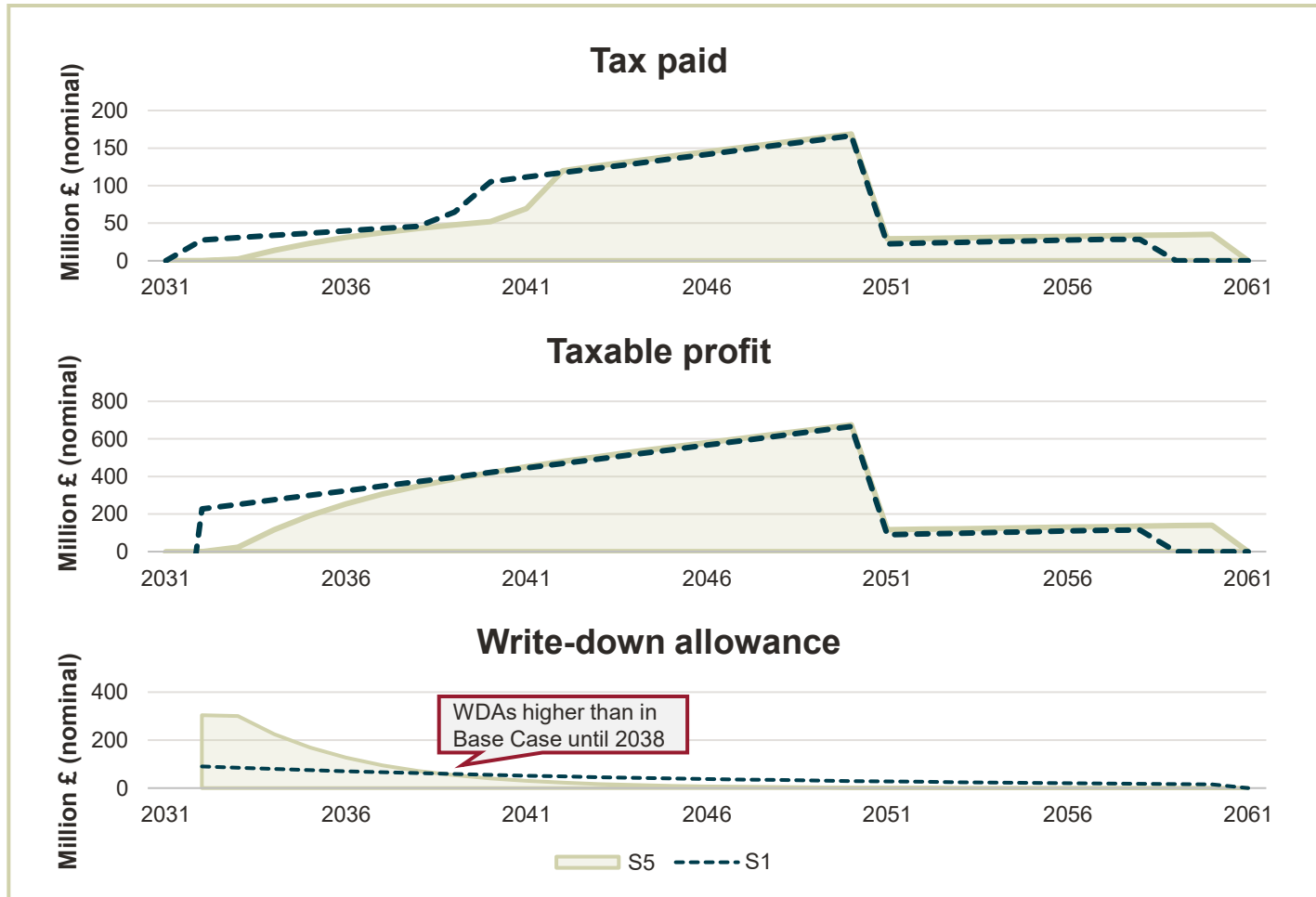


- Relative to the Base Case, **removing the loss cap** (Scenario 4) **delays** the **taxation** of SPV profits.
- This is because **carried-forward losses** can be **utilised earlier** when the cap is removed.
- As a result, capital allowances are fully utilised by 2035 (compared to 2038 under the Base Case).
- While total tax paid over the life of the project is broadly unchanged (with any aggregate differences driven by changes in strike price), the **timing of tax payments** is **more favourable** for developers under Scenario 4.
- In practice, this means that profits are fully shielded from tax until 2035 under Scenario 4.

Accelerated WDAs drive a strong impact by shifting tax relief earlier and sustaining it for longer

- 1.8 £/MWh

Scenario 5: Enhanced WDAs

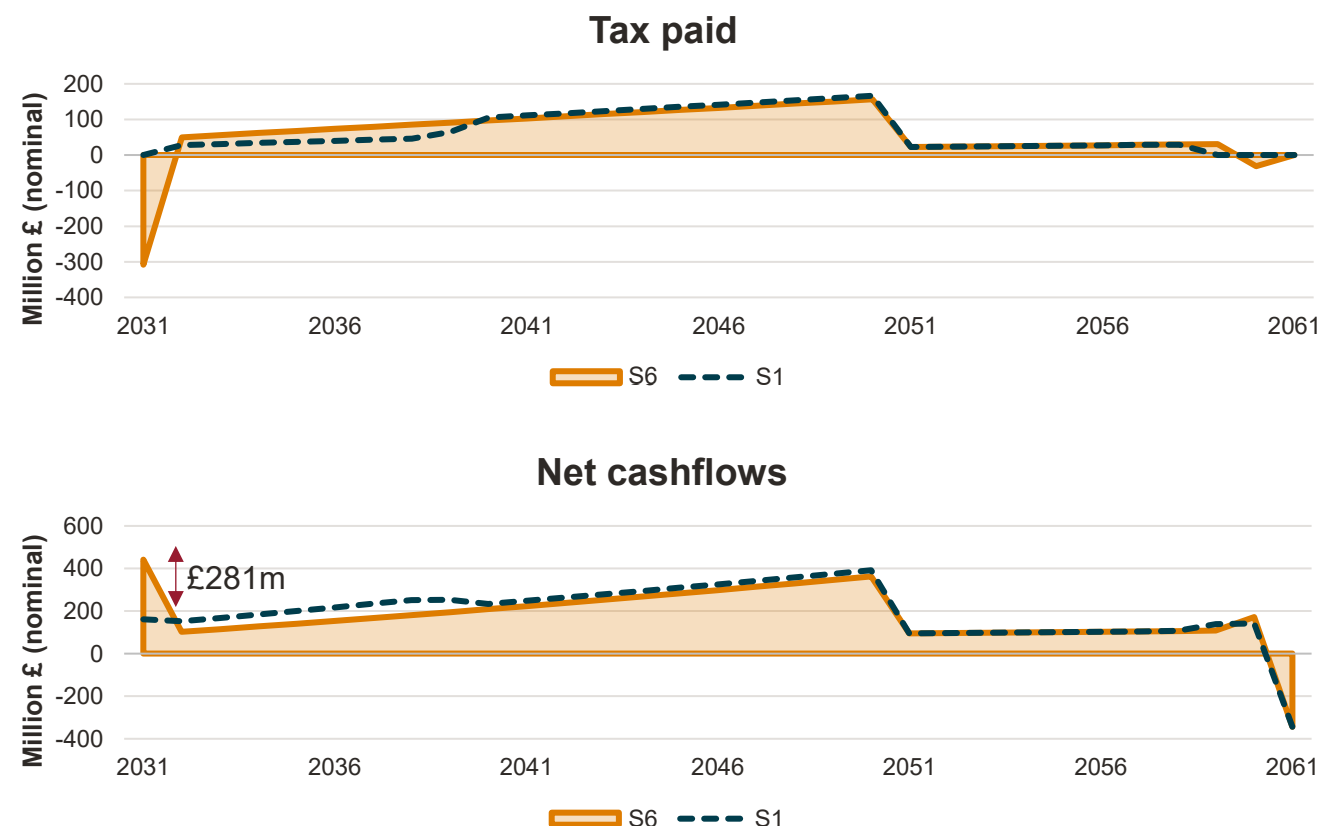


- Two overlapping effects exist under the enhanced WDAs scenario:
 - Higher WDAs **reduce taxable profits** in the **short-term**
 - Less carried-forward loss is used early on, extending its usage over time
- As a result, **carried-forward losses provide tax relief for longer** (until 2041 vs. 2038).
- Overall, capital allowances are utilised faster, improving the timing of tax relief.
- Because WDAs are higher, the pool of capital allowances is depleted more quickly. Up to 2038, WDAs exceed those in the Base Case; thereafter, they fall below the Base Case, as the remaining pool is significantly smaller, even though the applicable rate (25%) is higher than in the Base Case (6%).

Monetisation of tax losses has the largest potential impact

- 3.9 £/MWh

Scenario 6: Monetisation of tax losses

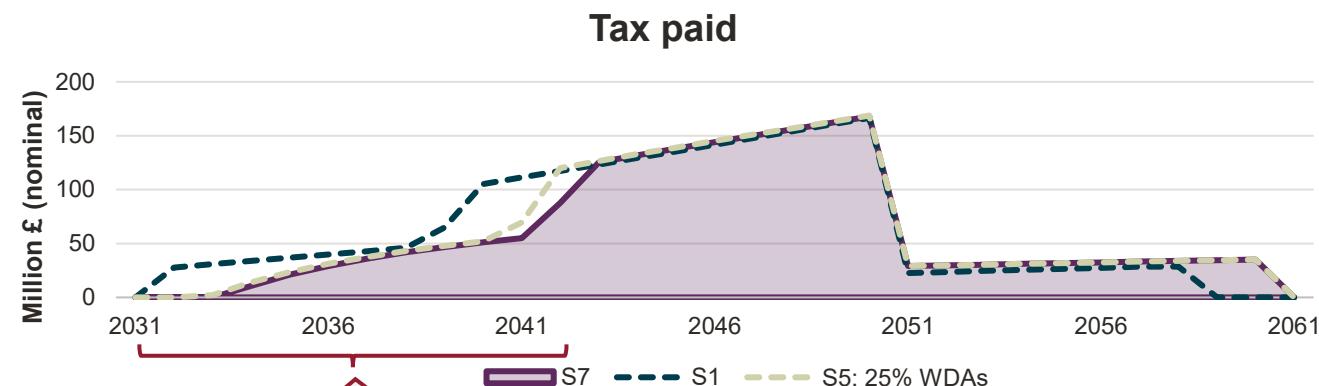


- This allows the **immediate monetisation** of all capital allowances, leading to additional £281m cashflow in 2031.
- Key implications:
 - Higher realised value in the first year vs. Base Case
 - No accumulation of tax allowances within the SPV
- In later years, the SPV pays more tax due to the absence of carried-forward losses.
- Differences in final periods are driven by the treatment of unused WDAs.¹

Combining Devex inclusion with 25% WDAs delays tax payments and increases overall tax relief

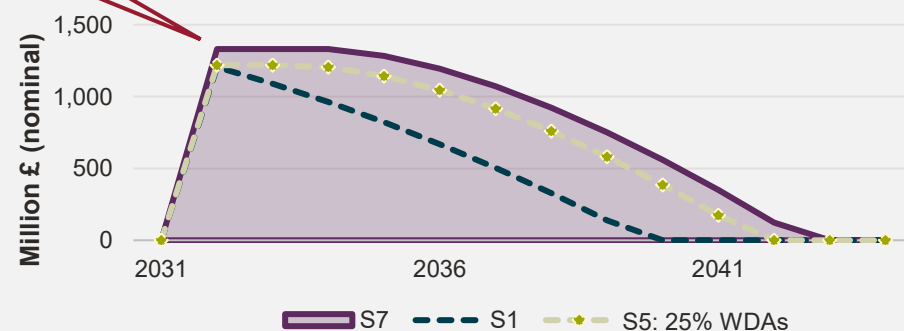
- 2.2 £/MWh

Scenario 7: Devex Inclusion and Enhanced WDAs (25%)



Devex inclusion creates additional available CFL

Available carried-forward losses (CFL)

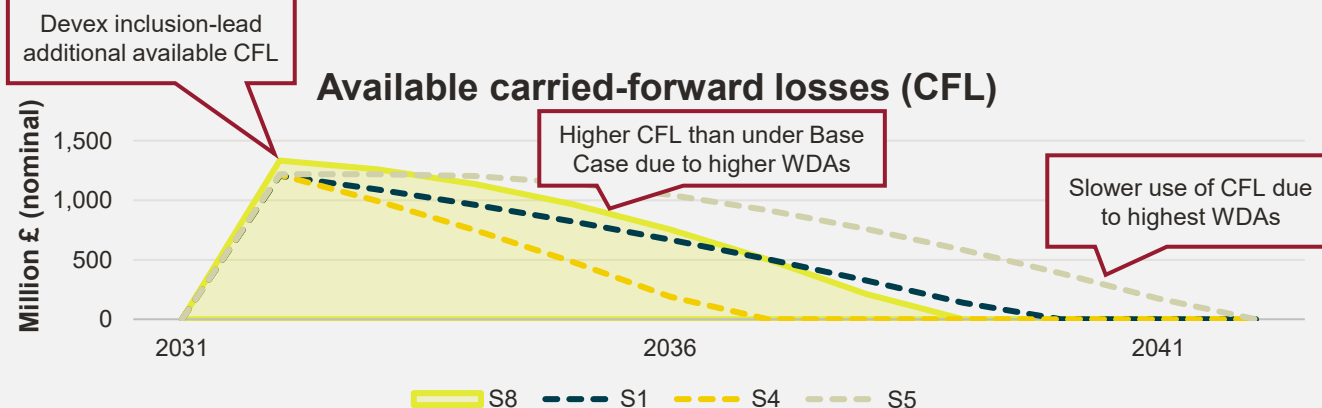
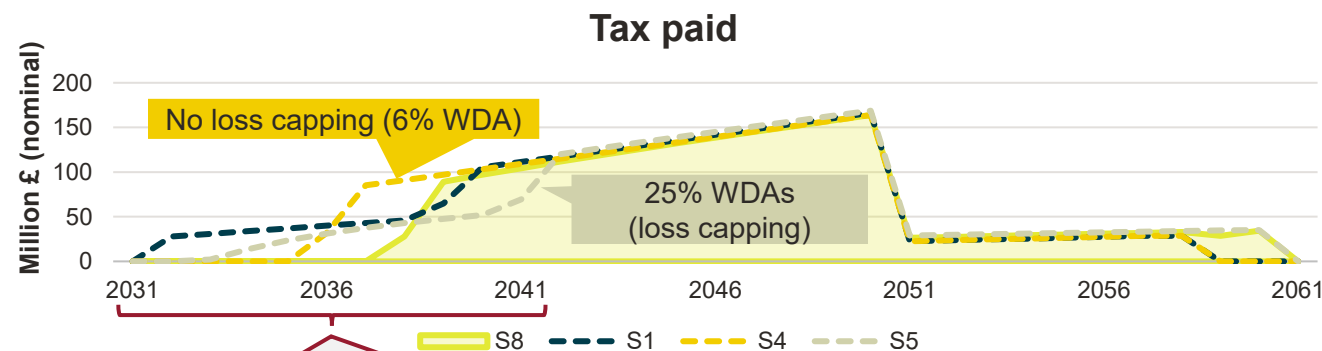


- The logic is the same as in the 25% WDA scenario.
- Two overlapping effects arise under the enhanced WDAs:
 - **Higher WDAs reduce taxable profits in the short-term**
 - This slows the use of carried-forward losses, extending their availability over time.
- Including **Devex** in capital allowances provides additional tax relief and **reduces total tax paid**.
- This majority of this additional relief materialises in 2040-2042, when carried forward losses have been exhausted under S5, while the additional losses generated through Devex inclusion remain available under S7.

Devex inclusion, no loss capping and accelerated WDAs can reinforce each other, delivering larger SP reductions

- 2.5 £/MWh

Scenario 8: Devex Inclusion, No Loss Capping and 14% WDAs



- Results combine several effects previously considered individually:
 - **Removing the loss cap** allows all taxable profits to be offset until the initial capital allowances are fully used.
 - **Devex inclusion** increases the total amount of capital allowances available.
 - **Higher WDAs** accelerate the availability of capital allowances.
- Combined, these measures **defer all tax payments until 2038, accelerate the use of capital allowances** through higher WDAs, and **reduce total tax paid** through Devex inclusion.
- The resulting **2.5 £/MWh reduction in the strike price** is the largest across the modelled scenarios, excluding the monetisation of tax losses scenario.

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Consumer benefits are likely to outweigh tax impacts if policies defer tax payments from the early years of project cashflows



Changes in the tax regime affect both consumers and tax collection:

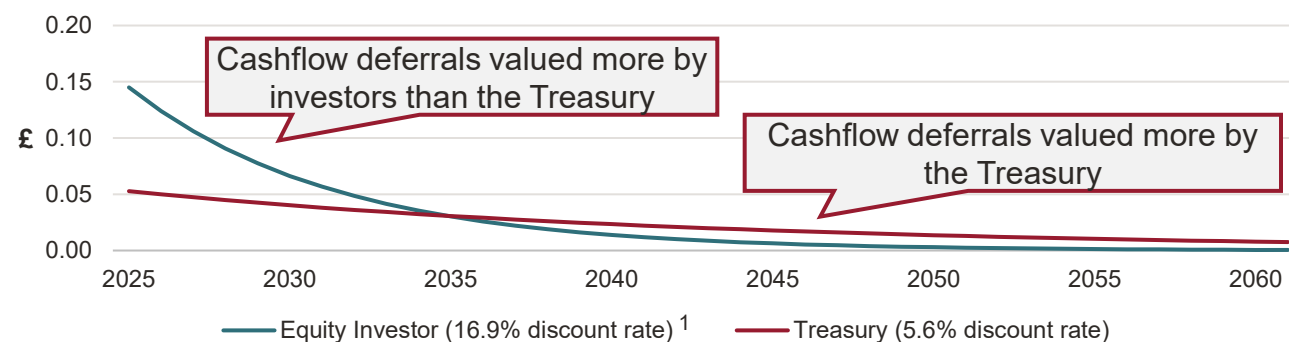
- **Consumers** ultimately fund CfD payments and therefore benefit from **lower strike prices (SPs)**.
- **Tax collection** is affected by both the **timing** and the **total amount** of tax collected.



The key driver of distributional impacts is the **timing of tax payments**:

- **Tax deferrals in early years** are highly valued by investors (due to discounting), leading to **larger reductions in strike prices**, leading to greater benefits for consumers.
- **Tax deferrals in later years** have relatively **less value to investors**, but still affect the **present value of tax receipts**, making them more relevant for the Treasury.

NPV change from deferral of £1 by a year

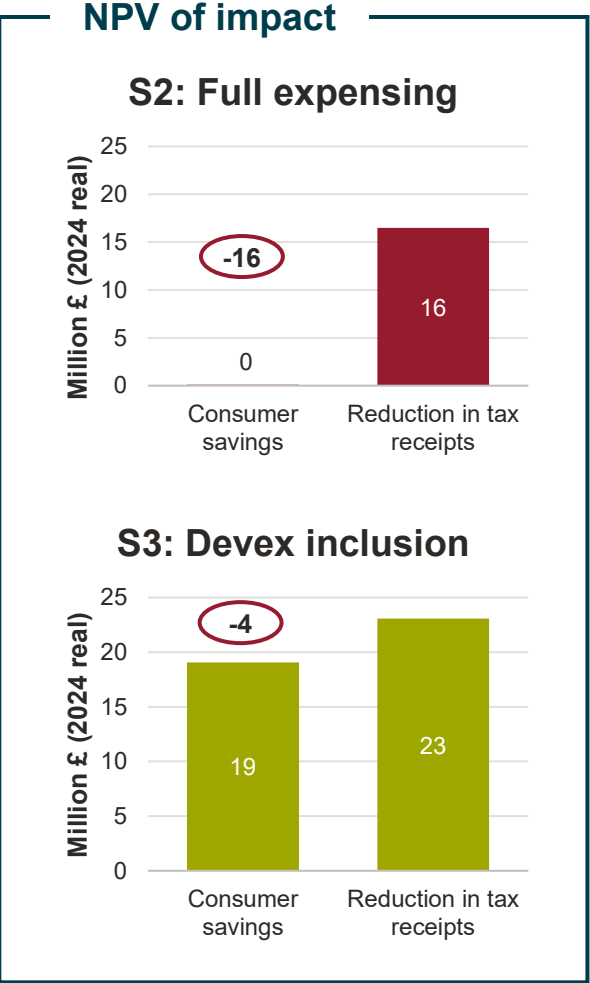


1) Discount rates are in nominal terms.

- The chart shows by how much deferring a cashflow of £1 by a year reduces the NPV.
- This is the marginal discount factor – i.e. by how much the discount factor decreases from a given year to the next.
- Initially, investors are more harmed by cashflow deferrals. This relationship reverses after a given point.

Impact on consumers and tax receipts (1)

Consumer savings calculated as the difference in project revenues throughout the contract period.	Reduction in tax receipts calculated as the difference in the tax paid by the project throughout its lifetime.	 Net effect: Consumer savings – Reduction in tax receipts
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Explanation

- Under the full expensing scenario, the deferral of tax payments is relatively back-loaded:
 - In the earlier years (up to ~2038), there is a modest increase in tax payments, driven by lower WDAs. This effect is more material for investors (through discounting) than for the Treasury.
 - From ~2038 onwards, larger tax deferrals emerge. These occur further in the future and are therefore less valuable to investors than they are for the Treasury.
- The net effect of these opposing dynamics is a negative overall impact of £16m.

- Total tax paid is lower in this scenario due to higher capital allowances.
- Since the project is assumed to be marginal, the change in strike price reflects 100% of the changes in investor valuation of the tax policy change, while the fiscal costs reflect the Treasury valuation. Because the major impact of this scenario happens beyond 2038:
 - As investors apply a higher discount rate, they place less value on future tax reductions, leading to smaller reductions in strike prices.
 - The Treasury, using a lower discount rate, records a larger loss in tax revenues in PV terms.
- Minor short-term tax reductions (from WDAs) also increase consumer savings and fiscal costs.
- The overall negative net impact is strongly influenced by the continuation of the current loss capping and consortium relief arrangements. Potentially, Devex inclusion alongside other reforms could result in a net positive effect.

Impact on consumers and tax receipts (2)

Consumer savings calculated as the difference in project revenues throughout the contract period.

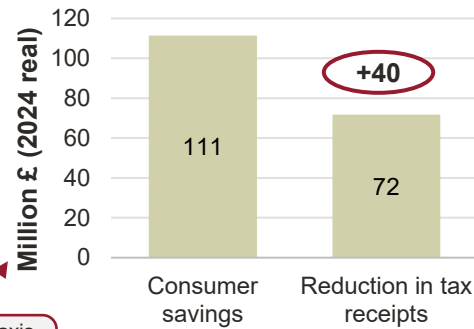
Reduction in tax receipts calculated as the difference in the tax paid by the project throughout its lifetime.



Net effect: Consumer savings – Reduction in tax receipts

NPV of impact

S5: 25% WDA



Different axis scale from the previous slide

S7: Devex inclusion + 25% WDA



Explanation

- The impact of accelerated WDAs is concentrated in the early years of the asset's operation.
- This front-loading leads to a net positive impact.
- The estimated impact is approximately £40m.

- Individually, Devex inclusion and 25% WDAs have an opposing net effect:
 - Devex inclusion has a net negative impact because tax relief happens late, beyond 2038.
 - 25% WDAs have a net positive impact because the effects of the policy are concentrated in the early years of the asset's operation.
- In combination, the two policies deliver a net positive impact, as the larger positive impacts of enhanced WDAs outweigh the negative net effect of Devex inclusion.

Impact on consumers and tax receipts (2)

Consumer savings calculated as the difference in project revenues throughout the contract period.

Reduction in tax receipts calculated as the difference in the tax paid by the project throughout its lifetime.



Net effect: Consumer savings – Reduction in tax receipts

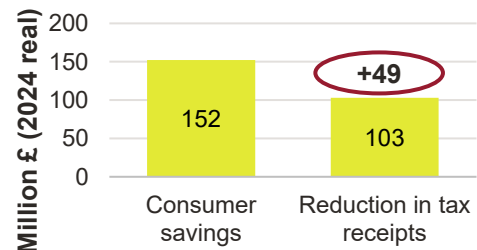
NPV of impact

S4: No loss capping



Different axis scale from the previous slide

S8: Devex inclusion + No loss capping + 14% WDA



Explanation

- The impact of accelerated WDAs is concentrated in the early years of the asset's operation.
- This front-loading leads to a net positive impact.
- The estimated impact is approximately £40m.

- In isolation, Devex inclusion has a net negative effect, while the removal of loss capping and enhanced WDAs¹ both have net positive effects.
- When combined, the three policies together create the largest net positive impact, excluding the monetisation of tax losses policy.
- This happens because removing the loss cap and increasing WDAs lead to deferring the payment of large amounts of tax during the in early periods, where investors value cash more than the tax authority.

Impact on consumers and tax receipts (3)

Consumer savings calculated as the difference in project revenues throughout the contract period.

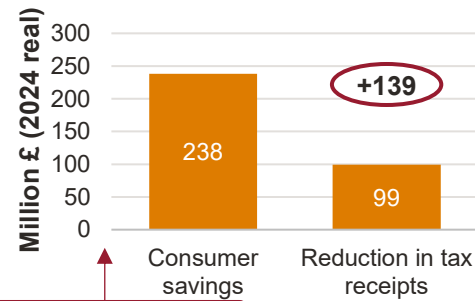
Reduction in tax receipts calculated as the difference in the tax paid by the project throughout its lifetime.



Net effect: Consumer savings – Reduction in tax receipts

NPV of impact

S6: Monetisation of tax losses



Different axis scale from the previous slide

Explanation

- Monetisation of tax losses is the clearest case of immediate and large tax payment deferrals.
 - As previously explained, investors place more importance on the near-term deferral of tax payments than Treasury. Thus, this scenario generates a large net positive impact of £139m.
 - Additionally, the consumer savings are largest, because the project passes through more favourable cashflows in the form of lower SPs.
- Tax policy reform delivering full monetisation of tax assets could create substantial value. There may be several ways to achieve this outcome.

Conclusion

- The **timing of tax payments is the key driver of net impacts**: differences in how investors and the Treasury value **near-term vs. long-term tax deferrals** determine the distribution of gains.
- In isolation, **full expensing and Devex inclusion** lead to **back-loaded tax relief**, which is less valuable to investors but still costly to the Treasury. However, reform packages that include Devex inclusion alongside other measures can deliver value.
- **Monetisation of tax losses** delivers the **largest net positive impact**.
- While these results provide **clear directional insights**, additional layers of complexity, such as **project heterogeneity, financing structures, and uncertainty**, could further influence the balance between consumer and Treasury outcomes.

1) While we have not modelled the impact of 14% WDAs in isolation, we expect the net effect of this policy to be positive.

Scope and limitations of consumer and tax impact estimates



This analysis **does not consider impacts on existing projects**. It focuses solely on **future auction rounds**.



The modelling is based on a **single archetype project**. While the insights are likely directionally relevant across technologies and project types, this has not been explicitly tested.



The analysis focuses on the **marginal plant**. As a result, both consumer and tax collection impacts are derived from the same project structure.

- The **consumer impact is extensible to inframarginal plants**, due to the pay-as-clear nature of CfD auctions
- In contrast, the **Treasury impact is project-specific**:
 - Inframarginal projects would typically generate higher taxable profits and therefore pay more tax overall.
 - However, if the reason for projects to be inframarginal is lower capex costs (as is likely), the sensitivity to tax regime changes would be lower, because capital allowances would be lower.



The **net effect** of policy changes for consumers and the Treasury is **evaluated solely on the basis of the net present value** of future cashflows, discounted at the Social Discount Rate.

Other factors, such as uncertainty in tax outcomes or the appropriate allocation of costs between taxpayers and billpayers, are not considered.

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Conclusions

Well designed tax policy changes can reduce CfD support costs by more than the associated reductions in tax receipts



Tax regime changes can materially affect CfD strike prices for offshore wind

- Changes in the timing of tax collection can reduce strike prices by up to ~£3.9/MWh, depending on how relief is delivered.
- From a baseline of ~£98/MWh, estimated reductions are: Full exp. – £0; Devex incl. – £0.3; No loss cap – £1; 25% WDAs – £1.8; monetisation of tax losses – £3.9; Devex incl. + 25% WDAs – £2.2; Devex incl. + No loss cap + 14% WDAs – £2.5



Early cashflow support has the biggest impact on project strike prices

- Policies that accelerate tax relief (e.g. no loss capping, enhanced WDAs, monetisation of tax losses) deliver the largest strike price reductions.
- In contrast, the developer benefits of full expensing and Devex inclusion, in isolation, are back loaded (because of the interaction with loss cap rules) and therefore have a limited strike price impact due to strong discounting of future cashflows.



Our analysis suggests that tax reform can deliver significant value

- Several reform scenarios deliver reductions in support costs (CfD payments) that outweigh reductions in tax revenue.
- Among those, scenarios with front-loaded tax relief deliver the largest net benefits.



The net impact on consumers and tax receipts is strongly driven by the timing of tax payments

- When tax relief is front-loaded, investors reduce bids more aggressively, leading to larger consumer savings.
- When relief is back-loaded, the Treasury bears a larger share of the cost in present value terms.
- No loss capping with enhanced WDAs and Devex inclusion, and monetisation of tax losses deliver the greatest impact.¹

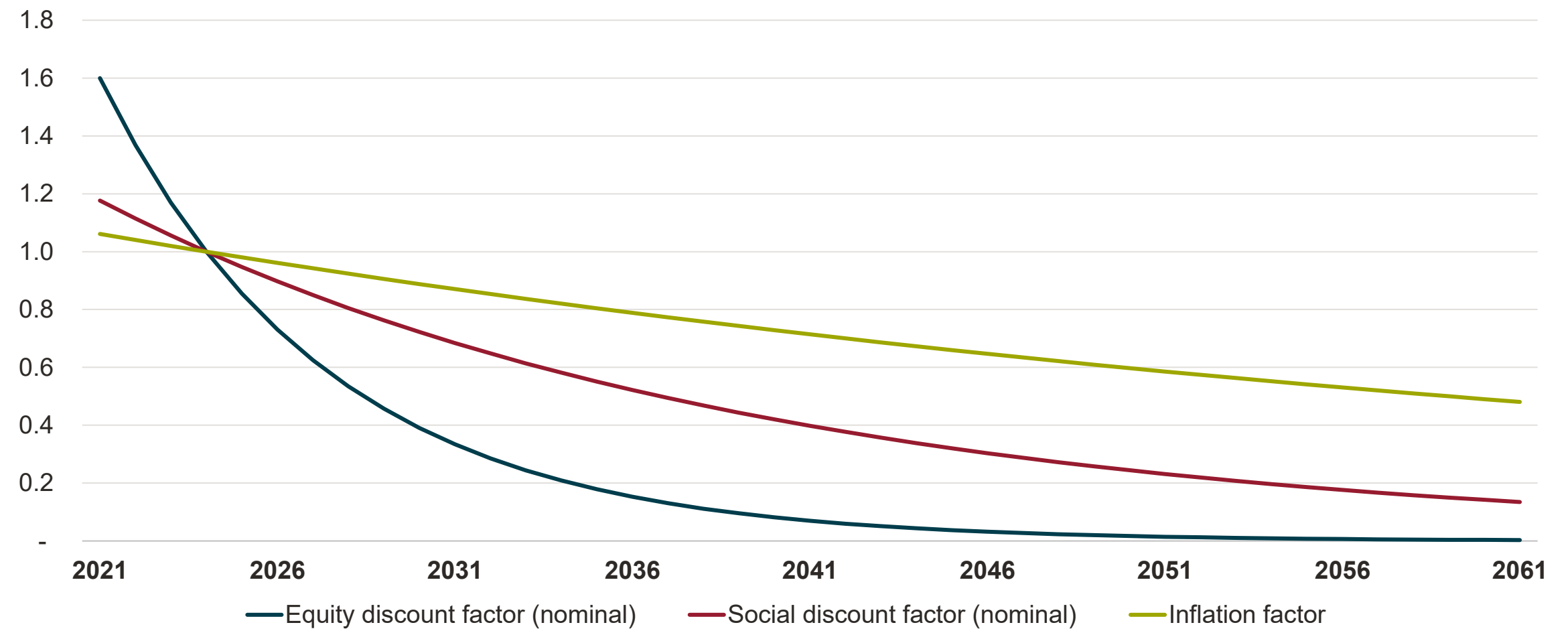
This analysis is based on a single archetype project and a marginal plant assumption, with impacts on consumers and the Treasury assessed using the NPV of future cashflows. While the results provide robust directional insights, outcomes could be sensitive to key assumptions and may vary in magnitude. Outcomes could be particularly sensitive to changes in the equity hurdle rate. Further work could explore additional interactions between policy options and how results vary under alternative assumptions.

1) Out of the modelled scenarios. Additional policies or combinations of policies could potentially have a larger impact.

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Discount factors



Impact on consumers and tax receipts (nominal, undiscounted)

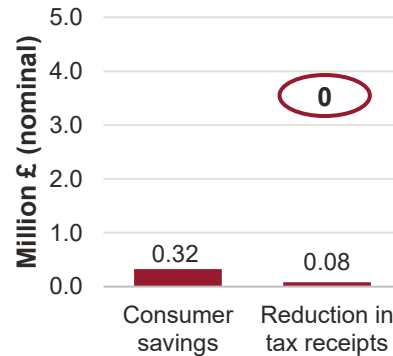
Impact on consumers and tax collection

Consumer savings calculated as the difference in project revenues throughout the contract period.

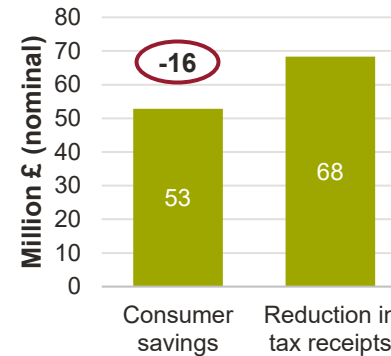
Reduction in tax receipts calculated as the difference in the tax paid by the project throughout its lifetime.

Net effect: Consumer savings – Reduction in tax receipts

Full expensing



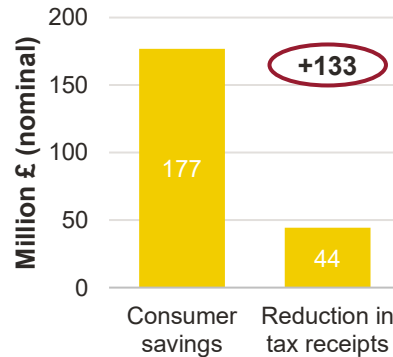
Devex inclusion



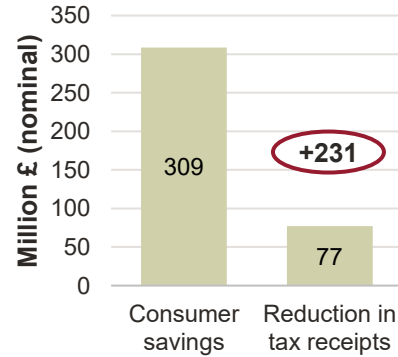
Explanation

- The undiscounted **results** are purely **driven by** the change in **strike price**.
 - Only the Devex inclusion tax policy¹ leads to a difference in the amount of tax paid. All differences come from a lower SP because the timing of tax collection does not affect undiscounted outcomes.
 - For consumers, the cost of support payments adjusts proportionally with the change in the SP.
- Results suggest that in total undiscounted terms, consumer savings from tax reform outweigh the reduction in tax receipts.²

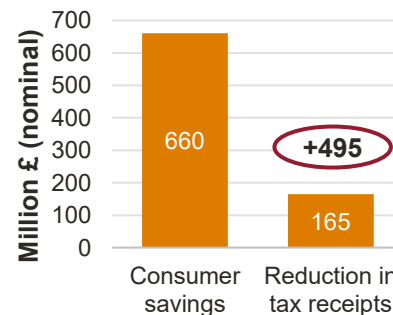
No loss capping



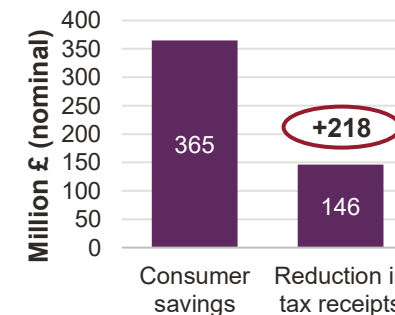
25% WDA



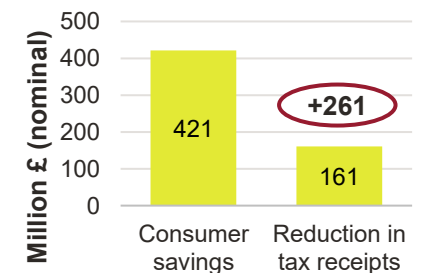
Monetisation of tax losses



Devex inclusion + 25% WDA



Devex inclusion + No loss capping + 14% WDA



1) Where less tax is paid overall because of higher capital allowances.

2) This is intuitive, as any change in company revenues can at a maximum translate into a change in tax receipts by a factor of 0.25. Note that this does not apply to the Devex inclusion scenario, where the total amount of tax paid decreases.

Assumptions: project characteristics

All prices are 2024 real

Project

- Installed capacity: 1,297 MW
- Asset lifetime: 30 years
- Commissioning year: 2031
- CfD bid date (year-end): 2025
- FID: 2028
- CfD contract duration (years): 20

Costs

- Pre-development costs (7 years): £170/kW
- Construction costs (3 years): £2,100/kW
- Fixed O&M: £46,000/MW/year
- Insurance: £8,900/MW/year
- Connection and use of system charges: £78,030/MW/year
- Decommissioning costs: £265,200/MW

Market

- 56% load factor
- Merchant tail capture price: £40/MWh
- Negative price hours: 5%

Financing and others

- Gearing: 75%
- Debt tenor: 20 years
- Type of debt: constant principal amortisation
- Cost of debt (nominal, pre-tax): 6.8%
- Equity hurdle rate (nominal, post-tax): 16.96%
- Inflation: 2%
- Social Discount Rate (real): 3.5%



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