Regulatory Depreciation in ED3

Ofgem

May 2026

FINAL REPORT

CONTENTS

EXECUTIVE SUMMARY

Background and context

Demand for electricity and use of the electricity distribution system is expected to grow in the coming decades. To facilitate this increase, annual load-related investment is forecast to increase in ED3 (2028-2033), and to stay at that elevated level throughout at least ED4 (2033-2038) and ED5 (2038-2043). Some of the investment during this period is expected to be anticipatory, as highlighted in Ofgem's recent ED3 framework decision.

At ED1, Ofgem decided to transition from 20-year (accelerated) depreciation asset lives to a new depreciation policy using 45-year 'economic' asset lives. This will result in lower depreciation charges for customers in the short run, and a higher level of Regulatory Asset Value (RAV) in the long run. A steady-state level of RAV will be achieved in the long-term when depreciation eventually aligns with the ongoing level of investment by Distribution Network Operators (DNOs) for this expanded network.

The Energy Networks Association (ENA) has stated that this transition is intergenerationally unfair for customers and creates a financeability challenge for DNOs, including during ED3.

The challenge for Ofgem in setting depreciation policy

Depreciation policy for a regulated energy network is best thought of as an intertemporal cost allocation problem. The regulator is trying to identify the best way to allocate a network's capital costs over time across price review cycles. Framed within Ofgem's statutory duties, energy network depreciation policy is, therefore, a question of how to effectively balance current and future consumers' interests within the context of changing use and demands on the network. A useful guiding principle for regulators is to allocate costs over time to take account of how consumer use of the network is expected to change over time.

At the same time, Ofgem needs to ensure that the resulting cashflow for the network companies is capable of being financed by the licensees and their investors.

The case for Ofgem's transition to a 45-year asset lives policy

It is a reasonable economic principle to depreciate network assets over their expected economic life. Ofgem's move to 45-year asset lives for electricity distribution helps to align the rate of depreciation (and, therefore, the allocation of costs) to the period of time over which customers receive services from network assets.

Arguments can be made for more frontloaded or backloaded depreciation profiles than the 45-year straightline profile that Ofgem currently applies for the electricity distribution sector. The current policy though can be viewed as striking a relatively pragmatic balance between these two competing positions.

But perhaps most importantly, the change in the rate of depreciation that Ofgem began to introduce from ED1, and the permanently higher RAV that this will eventually give rise to, can be considered to support intergenerationally fairer and more equitable prices over time. The transition to 45-year asset lives shifts the burden of electricity distribution costs towards future consumers. This is when demands on the distribution network are forecast to be higher, leading to higher utilisation of anticipatory investments in the network expected during the ED3-ED5 period.[1]

[1] This contrasts with the recent GD3 decision by Ofgem for the gas distribution network, which is to increase the rate of depreciation, to result in a lower RAV in future. In the context of an expected fall in demand for the gas network, accelerated depreciation will provide a more stable set of prices for consumers over time.

Therefore, while the cost per domestic customer may increase in the long-term, it is consistent with customers increasing usage of the electricity distribution network over time. The 45-year asset lives depreciation policy helps to levelise an expected declining real electricity distribution average unit price over time because of the higher RAV the policy gives rise to.

On this basis, there was – and remains – an objective case on economic and societal equity terms, for Ofgem's decision to transition to its current depreciation policy for the electricity distribution sector.

This approach to electricity also aligns with the principles which guided Ofgem's recent decision to accelerate depreciation for gas distribution. Specifically, Ofgem has sought "*a balanced regulatory stance that aims to protect both current and future consumers*".[2]

However, the current policy puts pressures on the DNOs' cashflows and, in particular, Funds From Operations (FFO) based credit metrics, during a peak period of investment by DNOs over the ED3-ED5 period. Rather than an issue of intergenerational inequity, this is a financing challenge. This undesirable outcome arises because it takes time to reach a higher steady state RAV; i.e. when depreciation is in balance with the investment levels required to maintain the expanded networks. Therefore, the increased capital expenditure (inflow to RAV) during ED3-ED5 coincides with the transition to a slower rate of depreciation (outflow from RAV).

Options for consideration

To address the impacts of the transition to 45-year asset lives on DNO cashflows, RAV and finances, options that Ofgem could consider include the following:

- expecting the RAV in forthcoming price control periods to be financed at a lower level of gearing than has been assumed in Ofgem's recent electricity distribution price reviews;
- smoothing the impacts on DNO cashflows during the peak investment period through temporary reductions in capitalisation rates; and/or
- implementing changes to depreciation policy to accelerate the rate of depreciation and reduce the build-up of RAV in the sector.

In this report we also assess a fourth option of Ofgem utilising third-party financing to support a reduction in capitalisation rates (temporary or permanent).[3]

It is important to note that these options are not exhaustive, nor are they mutually exclusive. For example, hybrid options could involve a combination of lower gearing and an amended depreciation profile. We consider them as independent options to aid with clarity of the assessment.

Whether lower gearing can be leant upon as the tool to manage DNOs' financing pressures may depend on whether the extent of the reduction is considered reasonable in light of the perceived level of long-term regulatory commitment to future allowed returns. In this respect, recent acquisitions of DNOs – in particular, the recent acquisition of UK Power Networks at a reported premium to RAV of c. 1.5x – do not indicate investor concern about Ofgem's commitment to providing a long-term return on the RAV that is consistent with the opportunity cost of capital.[4] National Grid's 2024 equity issuance – highlighted by Moody's in its April 2025 outlook for European regulated electricity and gas networks – also provides evidence of investor appetite.

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[2] Ofgem (2025): RIIO-3 Draft Determinations - Finance Annex p.128

[3] Some industry stakeholders have proposed the use of a privately financed securitisation approach in electricity distribution networks. Such a scheme would likely be structured so that the financing body – a Special Purpose Vehicle – would receive a transferable legal right to recover the funds at a later date through a future claim on charges, i.e. a financial asset equivalent in value to the level of funding provided. The interest on, and repayment of, this debt comes from the network charge recovery.

[4] Engie (2026): Acquisition of UK Power Networks

A reduction in capitalisation rates would be a relatively simple and practical solution to implement within Ofgem's existing framework – and has been adopted for RIIO-T3. But it would only be a temporary solution to DNO financing pressures where capitalisation rates are reduced below the 'natural' long term rate. It would also place pressures on consumer bills in the short term. A commitment to reduce capitalisation rates in perpetuity would, in effect, be a form of accelerated depreciation.

Changing depreciation policy to a more accelerated rate than the current 45-year asset lives policy provides would help to support DNO finances in coming price controls. On the other hand, it would act against the basis for Ofgem making the transition to the 45-year economic asset lives policy to start with. It would also increase current consumer prices amongst other current bill and energy system investment pressures intended to support the UK's future energy system transition and deliver future cost savings.

Moreover, in practical terms, if Ofgem were to reverse or soften its ED1 policy, by adopting a more accelerated RAV depreciation policy, this could be seen to undermine prior regulatory commitments. It may run against a stable and predictable regulatory regime, given that it would be Ofgem's second change in depreciation policy in three price review cycles.

The third-party financing option would allow a proportion of DNOs' investment plans to be funded as 'fast money' but paid for by consumers as 'slow money' (via the third-party financing solution). This would reduce DNOs' financing requirements, at least while such a scheme were in place.

There are examples of schemes with similar objectives internationally and some parallels with the role that competitive networks are envisaged to play in helping to finance the expansion of transmission networks, alongside electricity transmission owners, in future. However, it would still come with practical challenges for application to the electricity distribution sector and raises other issues which Ofgem would need to carefully analyse before judging such a scheme to be in the interests of current and future consumers.

For example, in reaching that judgement, Ofgem would need to consider how the financial markets and rating agencies will view the long-term liabilities that would be created by the third-party solution[5] for the sector – and what would be the limits on the use of such a third-party financing scheme. Any third-party financing scheme would also need to demonstrate that it can deliver a true long-term financing benefit for consumers compared to DNO financing of investment underpinned by the RAV.

Identifying a way forward

Overall, Ofgem's current depreciation policy can be considered logical, and justifiable from an intergenerational equity perspective. In particular, a fundamental reversal of current depreciation policy does not appear justified on intergenerational equity grounds. Therefore, the best way forward may be to focus regulatory efforts around identifying how to manage the DNOs' financing pressures during the transition to a higher sector RAV.

[5] And potentially the implications for DNO finances in future as and when a third-party financing solution was unwound.

1. INTRODUCTION

1.1. Scope of report

CEPA was commissioned by Ofgem to consider how it should approach depreciation policy for electricity Distribution Network Operators (DNOs) for the ED3 period (2028 to 2033), taking into account the impacts of the current policy which was first introduced by Ofgem at ED1.

This report covers the following areas:

- The features of an optimal depreciation policy, from an economic perspective.
- A set of specific questions raised by Ofgem in relation to depreciation:
  - Is there a distinction between economic asset lives and the time periods over which the benefits of assets accrue to consumers?
  - How should an asset life be apportioned to consumers if investment was anticipatory?
  - Is it sufficient to set the cost of capital and asset lives to ensure costs are appropriately recovered?
- An assessment of Ofgem's ED1 policy.
- An assessment of representations provided by the Energy Networks Association (ENA) on Ofgem's ED1 policy.
- An initial commentary on potential regulatory policy options which are available to Ofgem and that might be considered for the ED3 period.

This work has been informed by expert academic advice from Professor David Newbery and Dr. Darryl Biggar.

David is an internationally recognised expert on economic regulation and reform of network industries. He is an emeritus professor at the University of Cambridge, where he was the Director of the Department of Applied Economics from 1988 to 2003 and Professor of Applied Economics from 1988-2010. He is the Research Director of the Energy Policy Research Group (EPRG) at the University of Cambridge, a multi-disciplinary research group supported by the UK Research Councils and industry stakeholders.

Darryl is an expert in regulatory economics, with over two decades of experience advising regulators and public sector bodies, including the Australian Competition and Consumer Commission (ACCC) and the Australian Energy Regulator (AER). He is an Associate Professor with Monash University (Australia) and has numerous, regularly-cited articles in economic and engineering journals.

This report contains projections of allowed revenues and Regulatory Asset Value (RAV) for the electricity distribution sector from Ofgem's current Price Control Financial Model (PCFM). CEPA has not independently verified this modelling, but we have used the outputs to inform this report. The modelling included in this report has been developed in coordination with Ofgem's regulatory finance team.

1.2. Structure of this report

This report is structured as follows:

- Section 2 presents the current context for electricity distribution, including Ofgem's current regulatory policy for depreciation and its associated financial implications.
- Section 3 considers the economic principles of depreciation and responds to several specific questions raised by Ofgem.
- Section 4 provides an assessment of Ofgem's existing depreciation policy.

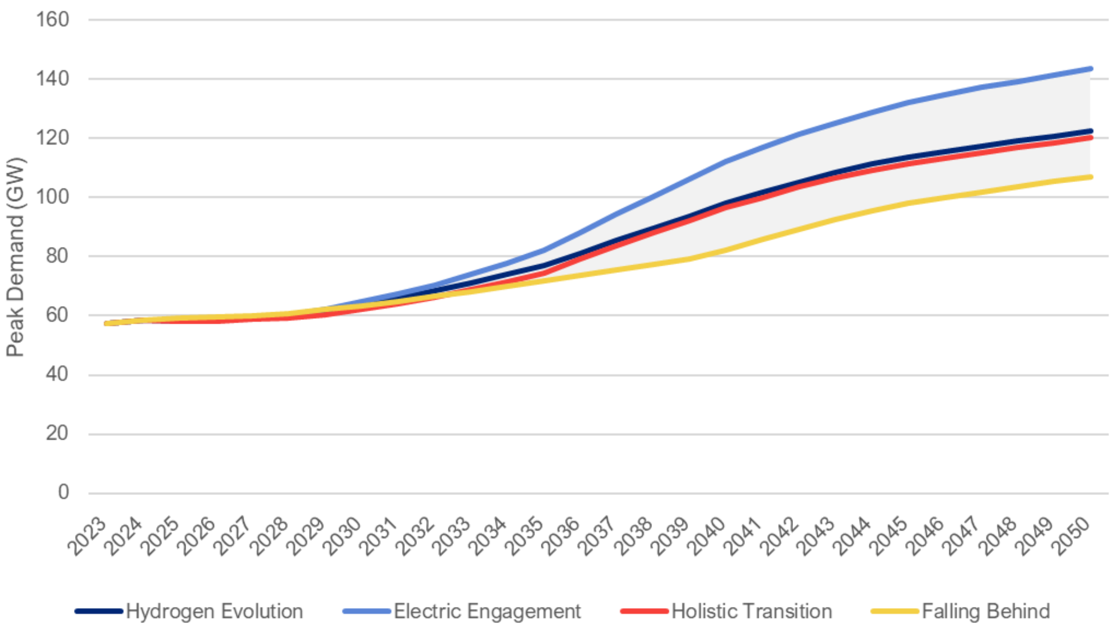
- Section 5 sets out a number of possible policy options for Ofgem and provides an initial commentary of their relative merits, along with a conclusion and potential next steps.
- Section 6 presents our conclusions.
- Appendix A provides a discussion of the analysis undertaken by NERA in its reports for the Energy Networks Association (ENA).
- Appendix B contains examples of depreciation policy in other European energy networks.

2. CONTEXT

2.1. The electricity network

Ofgem's ED3 review is taking place in a context where demand for electricity and use of the electricity distribution system are expected to grow in the coming decades, fuelled by the shift to electrification to support the energy transition. While there is uncertainty around the precise trajectory of demand, the UK Government projects that electricity demand could double between 2025 and 2050 (see Figure 1).[6] This growth is expected to be driven in part by increased uptake of electric vehicles and heat pumps. However, uncertainty remains regarding their adoption rates and usage patterns, which will in turn influence distribution network sizing requirements and load factors.

Figure 1: NESO Future Energy Scenarios (FES) - Electricity Demand Scenarios



Source: Future Energy Scenarios: NESO Pathways to Net Zero 2025 Data Workbook

To facilitate this increase in demand, annual load-related investment increased in ED2, relative to ED1, is projected to increase in ED3 (2028-2033), and thereafter is forecast to stay at that elevated level throughout at least ED4 (2033-2038) and ED5 (2038-2043). This is highlighted in the dark blue area in Figure 2 below, which is based on indicative estimates from Ofgem.

While some of the investment will be driven by known constraints on the network today, a portion will be anticipatory in nature, as highlighted within Ofgem's ED3 Framework Decision: "*We need investment now in anticipation of demand for electricity that will accelerate steeply in the next five to ten years*".[7] The National Infrastructure Commission (NIC) review of electricity distribution networks supported the development of more effective strategic planning of the networks to enable and de-risk a more proactive approach to investment, to manage an uncertain but growing electricity demand.[8]

There is a 'double whammy' in the need for additional electricity network investment, because pre-vesting assets (purchased at privatisation) are increasingly reaching their end of life and require replacement. As such, asset

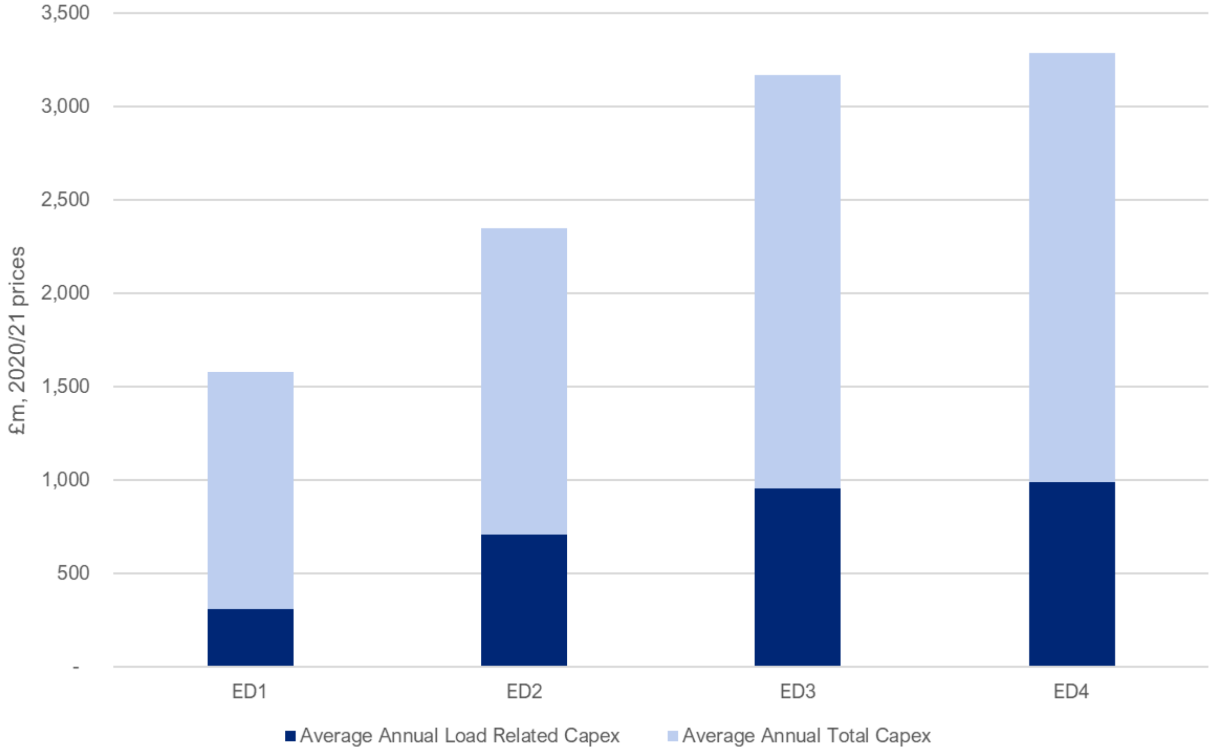
[6] DESNZ (2026): Accelerating electricity network connections for strategic demand (accessible webpage) - GOV.UK

[7] Ofgem (2025): ED3 Framework Decision

[8] National Infrastructure Commission (2025): Electricity distribution networks: Creating capacity for the future

replacement and other non-load related capex items are also expected to increase and stay elevated throughout the periods of ED3 and ED4. This is shown by the light blue area in Figure 2 below (based on indicative estimates from Ofgem).

Figure 2: Capex expenditure (ED1) and projections for capex requirements (ED2 – ED4, inclusive)[9]



Source: CEPA analysis of Ofgem ED2 PCFM, RIIO-ED1 PCM for the Annual Iteration Process November 2021

Expenditure requirements for the ED3 period (and beyond) remain uncertain ahead of network companies' ED3 business plan submissions and Ofgem's subsequent assessment and determinations. However, it is widely expected that electricity demand will continue to increase. As a result, the widespread view is that core network assets are unlikely to become obsolete.

Although network companies have periodically argued that economic lives may shorten due to factors such as changes in asset mix and the growing role of power electronics and smart grid technologies, there remains significant uncertainty around the extent to which these factors would lead to a systematic reduction in asset lives. There remains limited quantitative evidence to support a material downward adjustment of the 45-year asset life at the network level.

CEPA's 2024 report for Ofgem on the economic lives of electricity network assets built on a 2010 report for Ofgem on asset lives and depreciation.[10,11] The 2024 report considered the issue of asset lives in detail for electricity transmission network assets ahead of Ofgem's determinations for ET3. Overall, the report found that:

> *"With respect to economic asset life assumptions, the 2010 study proposed economic life assumptions in line with technical life assumptions for electricity transmission network assets on the basis that*

[9] Total Capex refers to Total allowed load related capex, Total allowed non-load related capex - asset replacement, Total allowed non-load related capex – other as set out in Ofgem's Price Control Financial Model (PCFM).

[10] CEPA (2024): [RIIO-ET3: Economic Lives of Electricity Transmission Network Assets]

[11] CEPA (2010): [The Economic Asset Lives of Energy Networks]

demand and investment was expected to grow – i.e. there was little risk of the assets not being useful during their technical life. We have seen no evidence that this position has changed since 2010."

The report did acknowledge that new technology was introducing greater dispersion and uncertainty in asset lives. Risks existed around asset stranding (e.g. offshore connections, point-to-point links or sole-use assets), earlier replacement of assets driven by anticipatory investment, and some assets where the asset lives may be shortening, such as some smart grid assets. However, wider energy system trends – including electrification of heat and transport and increased reliance on electricity networks – and improvements in asset management were expected to strengthen the long-term utilisation and value of core network assets. On balance, there was not a robust basis for shortening average economic life assumptions.

The report also noted that IT-related expenditure is typically treated as operational expenditure (opex) rather than capitalised and added to the RAV. To the extent that a greater share of network spend shifts toward such categories, this is more appropriately considered through the treatment of capitalisation rates, rather than through adjustments to asset lives.

2.2. Ofgem's regulatory duties

Ofgem's current duties as a regulator are summarised below.[12] Ofgem's principal duty – to existing and future consumers – and its subsidiary duty around network company financeability – are both salient to consideration of depreciation policy for ED3 and are discussed throughout this report.

Box 1 – Ofgem's existing duties[13]

Principal duty:

- Consumers (s.3A Electricity Act 1989) - protect the interests of existing and future consumers in relation to electricity conveyed by distribution systems. This includes their interests in:
  - Net Zero (Energy Act 2023)
  - Security of supply
  - Fulfilment of our designated regulatory objectives

Subsidiary duties ("have regard to"):

- Financeability (s3A(2) Electricity Act) – Ofgem's precedent has been to stress test financeability based on a notional, reasonably efficient company in the round.
- Sustainability (s3A(2) Electricity Act) - meet all reasonable demands.
- Vulnerability duty (s3A(3) Electricity Act) – includes the interests of individuals who are disabled, chronically sick, pensioners, low incomes or rural residents.
- Growth duty (s108 of the Deregulation Act 2015) - promoting economic growth in carrying out our regulatory functions.

Depreciation policy is a central element and building block of the revenue that Ofgem allows DNOs as part of their regular price control cycles. Depreciation policy influences the costs that are recovered from consumers over time, the level of RAV and profile of prices, and companies' cashflow and ex-ante expectation of achieving Financial Capital Maintenance (FCM).[14] These impacts of depreciation policy inevitably have implications across Ofgem's

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[12] This report was prepared prior to the publication of DESNZ's Review of Ofgem (April 2026). This review indicates that future legislation could result in changes to Ofgem's duties.

[13] Electricity Act 1989

[14] That is, that investors of a regulated network can expect to recover the opportunity cost of their capital and the nominal value of their initial investment over time. The FCM principle is also sometimes referred to as the NPV = 0 rule, as so long as the present value (PV) of future regulated returns, calculated on the basis of an appropriate opportunity cost discount rate, is equal to the value of the RAV, the FCM principle will be achieved.

See further discussion in Section 3.

principal and subsidiary duties. For example, depreciation policy may give rise to trade-offs that have to be considered by Ofgem, for example, in terms of the cost incidence that should fall on existing and future consumers.

2.3. Ofgem depreciation policy

An understanding of Ofgem's historic depreciation policies is critical to understanding concerns with the current policy (which are discussed in Section 2.5 and Appendix A) and to considering the optimal set of regulatory policies going forward.

Prior to 2015, electricity distribution network asset lives were set to 20 years for regulatory depreciation purposes, which was shorter than their recognised useful life. At that time, there was a reasonable logic to Ofgem's decision to set asset lives to 20 years – which was to support company financeability, as discussed in one of the working papers produced by the Finance Working Group in Ofgem's RPI-X@20 review of energy network regulation review.

Box 2 – Excerpts from paper from Ofgem's RPI-X20 Finance Working Group (2009)

"*New assets installed post-privatisation were initially depreciated over 40 years. When the pre privatisation assets were fully depreciated companies faced a 10-20% drop in revenues without any physical change to their business. This impact would have triggered a number of companies to exceed financial ratios.*"

"*Ofgem's response in DPCR3 was to shorten the depreciation lives to 20 years to accelerate cost recovery and bring cash forward from the future.*"[15]

Despite the rationale for shortening asset lives previously, Ofgem subsequently set out a case for transitioning new electricity distribution assets to a 45-year 'economic' asset life as part of its RPI-X@20 review. The decision to change to a 45-year asset life (for new investment only) was made in March 2011, along with a commitment to consider transitional arrangements to "*manage the transition over one price control period of eight years*".[16,17]

This policy was first implemented during ED1, and was based on adopting the lower end of CEPA's estimated range of economic lives of 45 to 55 years for electricity distribution assets in the lead up to ED1.[18] Over the course of ED1 (1st April 2015 – 31st March 2023 inclusive), regulatory lives of new assets (RAV additions) were increased annually in equal steps (of circa 3 years) from 20 years to 45 years, with RAV additions continuing to be depreciated on a straightline basis.[19] Since ED2, all new investment has been depreciated on a 45-year asset life. It was also anticipated at the time that the depreciation rate would be reviewed periodically as part of Ofgem's price review cycles.

There were several reasons set out at the time for this change in depreciation policy.

First, to gradually unwind the previous policy of accelerated depreciation, where revenues were considered to be perpetually brought forward from the future, and where asset lives for regulatory depreciation purposes were 'divorced' from physical asset lives. This was discussed by Ofgem's RPI-X@20 Finance Working Group, as shown below.

Box 3 – Further excerpts from paper from Ofgem's RPI-X20 Finance Working Group (2009)[20]

"Regulatory asset lives are now divorced from physical lives. Current customers are paying for assets which future generations may get for free. The RAV will stabilise at a much lower level [which is] likely to be less than

[15] Ofgem (2009): Paper from the RPI-X20 Finance Working Group

[16] Ofgem (2011): Decision letter on the regulatory asset lives for electricity distribution assets

[17] Ofgem (2011): Open letter consultation on the regulatory asset lives for electricity distribution

[18] CEPA (2010): The Economic Asset Lives of Energy Networks

[19] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex

[20] Ofgem (2009): Paper from the RPI-X20 Finance Working Group

the current replacement value (the Modern Equivalent Asset Value) which would better reflect the accurate cost to society. Effectively Ofgem has brought forward income from the future which, in NPV terms would be the difference between the two asset bases, to fund the businesses in the shorter term."

Second, and related, Ofgem sought to better align the value of the capital financing the networks (as reflected by the RAV) with the network's economic value. The RAV under a policy based on 20-year asset lives would – over the long-term – stabilise at a much lower level than the replacement value of the networks, compared to a higher RAV under 45-year asset lives. Ofgem's view was that this would provide a more accurate cost to society if closer to the network's replacement value. This is reflected in Box 3 above and Box 4 below.

Box 4 – Further excerpts from Ofgem working groups and publications

"*To depreciate the RAV at a rate that broadly approximates to the useful economic life of the network assets*".

Source: Ofgem (2022), RIIO-ED2 Final Determinations: Finance Annex.[21]

On the basis of the two points above, Ofgem's depreciation policy was intended to improve intergenerational fairness over time. The transition to a 45-year asset lives policy was considered to strike a fairer balance between the interests of current and future consumers. This was discussed during the RPI-X@20 working groups and policy papers, and was articulated again in the ED2 Final Determination.

Box 5 – Further excerpts from Ofgem working groups and publications

"Whilst this action [i.e., the move to 20-year asset lives] *has potential longer term implications for companies and customers, the adjustment was NPV neutral and hence customers overall have not been adversely impacted. However, this approach raises an "intergenerational" issue – is it appropriate that today's customers are disproportionately funding assets that benefit future customers?"*

Source: Ofgem's RPI-X20 Finance Working Group (2009)[22]

"Issues around capitalisation and depreciation are better considered within the context of inter-generational fairness and only affect financeability in so far as they affect our ability to give regulatory commitment."

Source: Ofgem – 'Regulating energy networks for the future: RPI-X@20, financeability working paper [23]

"*The rate of depreciation should be set so that different generations of consumers pay network charges broadly in proportion to the value of network services they receive.*"

Source: Ofgem (2022), RIIO-ED2 Final Determinations: Finance Annex.[24]

The change in methodology – to set asset lives at 45 years – was not considered at the time to imply a financeability issue. A period of transition during ED1 was considered appropriate to help companies manage the slowing down in the rate of return of capital in moving away from the 20-year asset lives.

At the time of the original decision, Ofgem's proposals were largely supported by a majority of the DNOs.[25] Nonetheless, the policy has several implications for DNO cashflows and customer charges. Below we set out these implications (Section 2.4) and discuss the concerns and representations that have been raised by DNOs and other stakeholders (Section 2.5) since the policy was put in place for ED1. In Section 3, we explain and analyse the dynamics which sit behind these implications.

[21] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex, Ch. 10

[22] Ibid.

[23] Ofgem (2010): Regulating energy networks for the future: RPI-X@20 – current thinking working paper, financeability

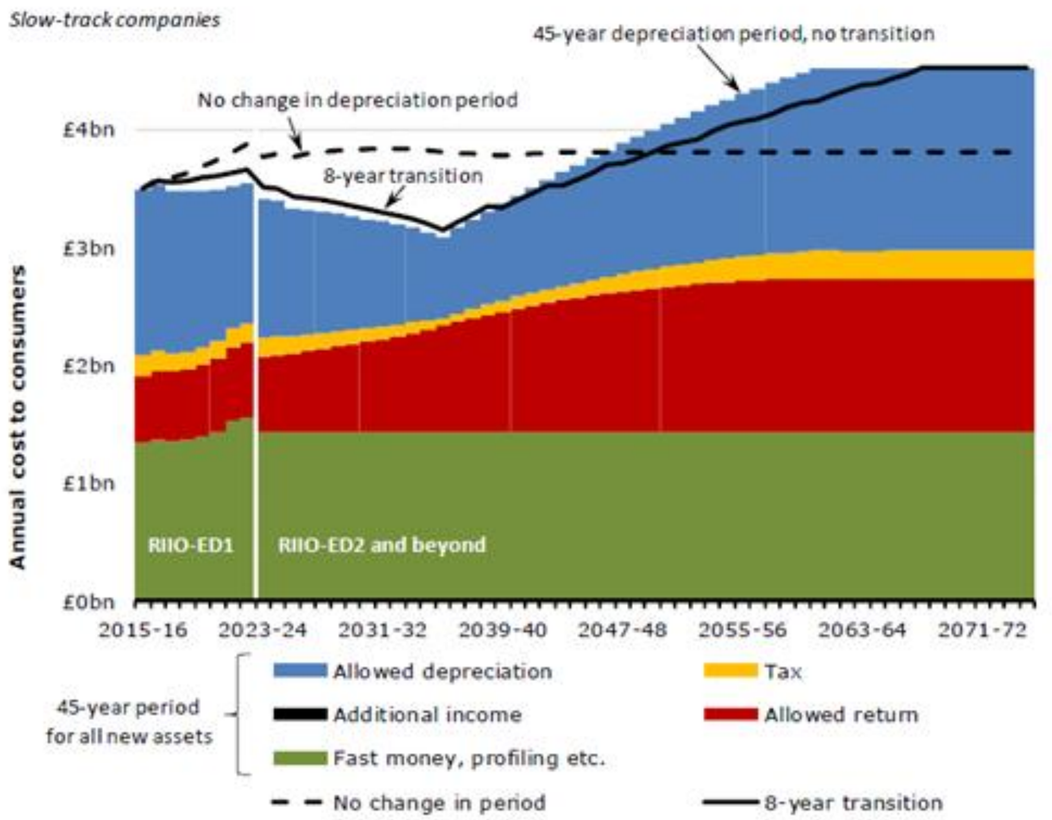
[24] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex, Ch. 10

[25] Ibid.

2.4. Implications of Ofgem's 45-year asset lives policy

Indicative Ofgem modelling of the electricity DNOs in coming decades suggests that the transition from 20-year to 45-year asset lives policy will result in a temporary fall in depreciation allowances for DNOs over the forthcoming two price control cycles, up to the late 2030s. Figure 3 illustrates the forecast reduction in depreciation allowances that was highlighted during the CMA appeal processes for ED1, which considered Ofgem's transition arrangements to the new 45-year asset life.

Figure 3: Ofgem's analysis of the long-term effects on DNO revenues of the change in asset lives



Source: CMA and originally from First Witness Statement of Ian Rowson[26]

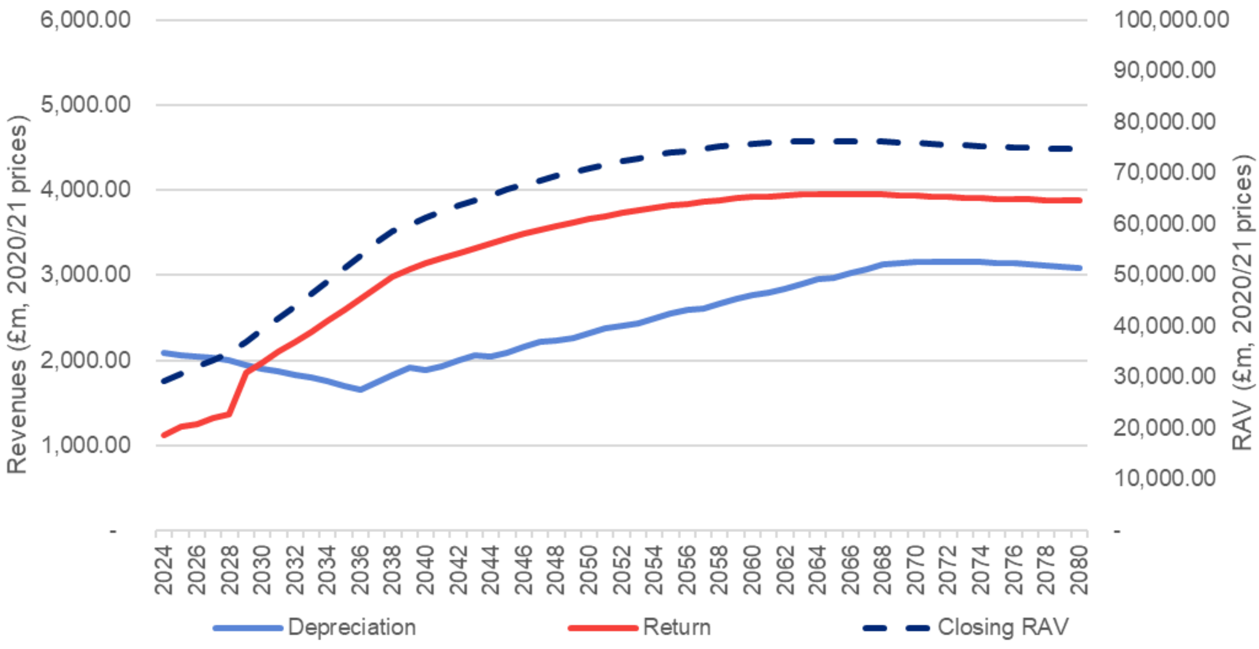
The trends in allowed depreciation that Ofgem reported at the ED1 CMA appeal, are also present in Ofgem's current indicative PCFM modelling projections for the sector – see Figure 4 below. Ofgem's modelling forecasts that its depreciation policy will result in temporarily lower depreciation charges to customers in the short run and will drive a higher level of RAV in the long run.

The temporary fall in depreciation is a result of the transition between one regulatory depreciation policy to another.

As discussed in Section 3, the reduction in the depreciation allowance arises because it takes several price controls for the investment cycles and expanding networks of the DNOs, and the transition to the new 45-year asset lives (with a lower rate of depreciation), to return the depreciation allowance to a new 'steady state' – one that will eventually align with the long-run level of investment by DNOs for their respective networks.

[26] CMA (2015): British Gas Trading Limited v The Gas and Electricity Markets Authority

Figure 4: Profile of RAV, depreciation and allowed return under Ofgem's 45-year asset lives policy



Source: CEPA analysis of Ofgem ED2 PCFM

The projected rise in the RAV in Figure 4 is partly driven by the forecast investment to expand the electricity distribution network over the coming decades. The level of RAV, and where it will eventually stabilise, is also partly driven by the change in the depreciation rate arising from Ofgem's transition to a 45-year asset lives policy.

Over the longer term, depreciation will eventually align with the long-run level of investment by DNOs for this expanded network, independent of Ofgem's policy on asset lives and depreciation profile.

The sum of allowed depreciation and the allowed return only rises relatively gradually in the short term (due to the temporary fall in depreciation) but is higher in the long term due to the higher RAV. This effectively leads to the allowed revenue profile for the DNOs to be tilted towards the future, compared to the previous depreciation policy of 20-year asset lives for regulatory depreciation purposes.

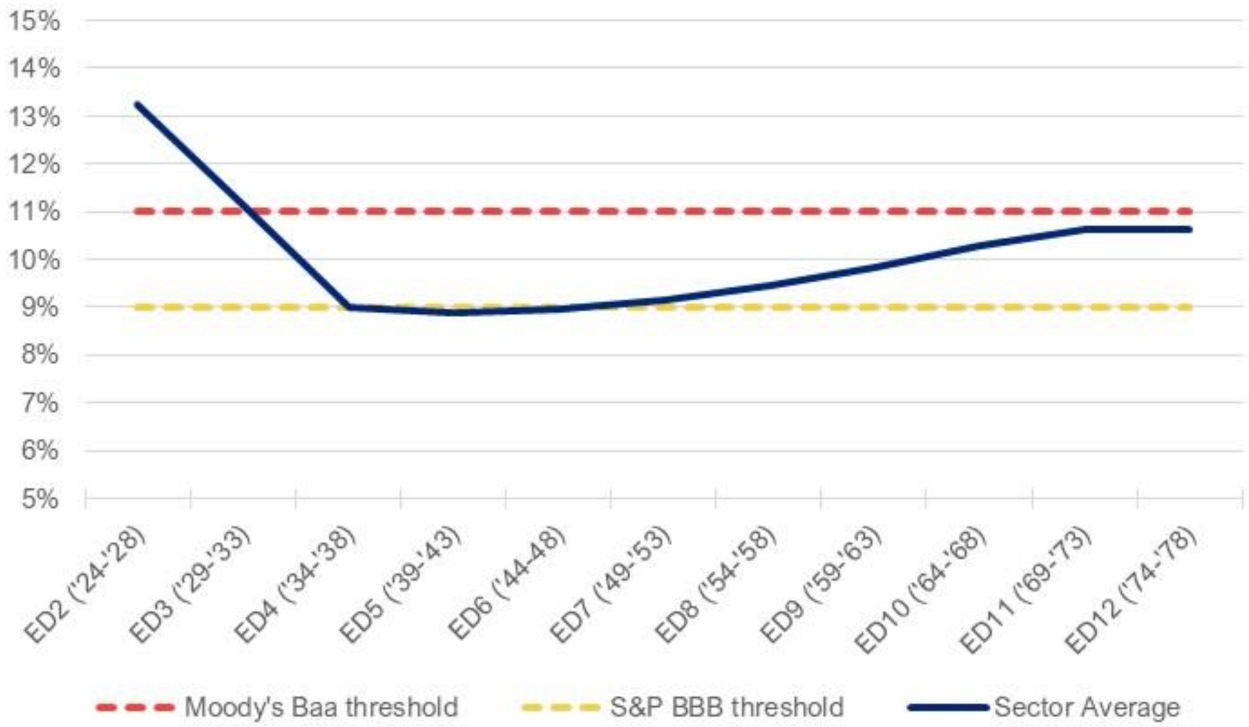
Several implications arise from this:

- While the policy transition – from an investor perspective – is in principle Net Present Value (NPV) neutral, providing a return on and of justified investments, it results in a temporary reduction in depreciation for a period and, therefore, a temporary reduction in DNO cashflow. This will occur during a peak period of investment in load and non-load related expenditure for DNOs over ED3-ED5.
- The temporary reduction in depreciation increases the RAV (for a given level of investment) – likely moving it closer to replacement value – but its level cannot necessarily be said to reflect the MEAV of the distribution network.

This demonstrates how depreciation and the RAV are effectively two sides of the same coin: a slowing of the rate of depreciation (under Ofgem's current policy) results in a larger RAV build-up and higher return 'on' capital over the long-term – which is NPV neutral assuming an appropriate allowed cost of capital.

The shift in depreciation policy also has implications for key credit ratios that several of the rating agencies (e.g., Moodys and S&P) use in their credit rating assessment. For example, the sector-wide average ratio of Funds From Operations (FFO) to Net Debt (FFO/ND) for the average DNO is forecast to fall over the next decade, and then to rise only very gradually. Ofgem modelling suggests that FFO/ND will fall to just below 9% by ED4, as highlighted in Figure 5 below. We discuss these dynamics, and the implications for DNO finances and intergenerational equity of prices for current and future consumers, in more detail in later sections of this report.

Figure 5: Projected level of FFO/Net Debt under Ofgem's 45-year asset lives depreciation policy[27]



Source: CEPA analysis of Ofgem ED2 Full PCFM

2.5. Commentary on Ofgem's depreciation policy

Both before and after Ofgem's decision to increase the lives of new assets to 45 years (which was taken by Ofgem in 2011),[28] the issue of depreciation and its impacts received consideration and scrutiny from a range of stakeholders. A summary of the key commentary is provided below.

CEPA report for Ofgem on asset lives and depreciation (2010)[29]

CEPA's 2010 report **recommended a 45-55 year asset life** for electricity distribution network assets based on Ofgem's decision to adopt an economic asset lives policy.

> *"We recommend using a figure below the existing technical life but significantly above the existing regulatory life. Our discount to technical life reflects some of the uncertainty about the longer-lived assets."*

In a prior report on financeability issues[30] for the RPI-X@20 review CEPA also **highlighted the intergenerational equity** implications of the policy (at that time) of Ofgem's use of an accelerated 20-year asset life:

> *"In the energy sectors [the approach to financeability] has led to inter-generational equity concerns since the solution to financeability has been to halve the economic life of assets for depreciation in*

[27] The dotted lines illustrate the FFO/debt thresholds of 9% and 11% used by S&P and Moody's respectively for a broad Baa/BBB rating in their rating scorecards. It is important to note that this is a threshold that is applied in the context of a broader scorecard that leads to the rating by S&P and Moody's. This modelling assumes 60% level of notional gearing.

[28] Ofgem (2011): Decision letter on the regulatory asset lives for electricity distribution assets

[29] CEPA (2010): The Economic Lives of Energy Network Assets

[30] CEPA (2010): RPI-X@20: Providing Financeability in a Future Regulatory Framework

electricity distribution". "[This has resulted in] bringing revenue forward and consequently making existing customers pay more than would otherwise be the case".

We highlighted that companies operating in other sectors, including those existing in competitive market environments, have **options to address financeability**, including:

"raising additional debt… reducing or even stopping dividend payments for a period… raising new external equity". "In a competitive market when funding is required for projects with strong business cases, but additional debt would breach financial ratios, there would be a call on equity investors".

We also highlighted the need for **strong regulatory commitment**, to provide assurance that current investments will be remunerated in line with current policy: "*What is key is ensuring that the building blocks which ensure that the commitment to long-term financial capital maintenance is delivered are estimated appropriately*."

Oxera paper for the ENA on impacts of increasing cashflow duration (2010)[31]

A series of Oxera papers – also prepared in the context of the RPI-X@20 review - tested the assumption that the cost of capital is independent of the profile and duration of cash flows and financeability. They noted that:

"The proposals in Ofgem's strawman contain a key assumption: provided that the cost of capital is estimated correctly, there is not a financeability problem" … "In principle, it is correct for companies to use a mix of debt and equity funding in their long-term capital structures, and to adjust these proportions dependent on capex requirements… critically, the strawman assumes that there is no a priori reason to believe that the cost of capital would change significantly".

Across the papers, Oxera argued that **longer duration cash flows increase company financing risk and the cost of capital**: *"Extending the duration of cash flow is likely to increase the risk exposure of a regulated company*" and therefore "*increase the cost of capital"*.

The implication of Oxera's analysis is that company cash flows (and financeability) cannot simply be left for companies to resolve themselves. Because reduced short term financeability increases company risk, a regulatory policy that lengthens cash flows would require an associated policy to increase the allowed return.

Oxera's analysis was reviewed and commented on at the time by Ofgem and various advisors to Ofgem.[32] Work by CEPA in 2010 concluded that:

"It seems to us that the allowed WACC is predicated on a longer term basis in the first place, i.e. through returns earned on the regulatory asset base, and not based upon advancing cashflows. As such, removing the mechanism for bringing forward cashflows is simply making the actual cashflow returns to investors consistent with the basis on which the allowed WACC has been determined. There are plausible arguments both for and against extending cashflow profiles increasing the WACC such that the final direction and size of any impact is not clear."

CMA Final Determination on ED1 depreciation policy[33]

As noted above, Ofgem's move to a 45-year asset life depreciation policy was one of a series of topics that was appealed to the CMA at the ED1 price review.

One of British Gas' grounds of appeal was that Ofgem's decision to provide an 8-year glide path for the increase in the lives of new assets was not justified. As stated in the CMA determination, it argued the decision to transition to 45-year asset lives was inconsistent with Ofgem's statutory duties. Having identified economic depreciation as the

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[31] Oxera (2010): What is the impact of financeability on the cost of capital and gearing capacity

[32] See CEPA (2010): Cashflow profiles and WACC and Europe Economics (2010): The Weighted Average Cost of Capital for Ofgem's Future Price Control

[33] CMA (2015): Final Determination: British Gas Trading Limited v The Gas and Electricity Markets Authority

correct policy, Ofgem should have implemented it as quickly as possible in the absence of a strong countervailing justification.[34]

The CMA upheld Ofgem's decision, stating the following: "*We … determine that GEMA was not wrong, on any of the statutory grounds advanced by BGT, to implement a transition between 20-year and 45-year asset lives, rather than moving to 45-year asset lives immediately*".

The CMA adjudged that there was a reasonable economic basis for Ofgem using a 45-year asset life, although it noted the policy would have implications for company financeability:

> *"The change in asset life would potentially put companies under significant financial strain in the intervening periods, followed by a material increase in equity and asset value" … "This does not show, in itself, that the use of a 45-year life was wrong, as it may have advantages in terms of the prices reflecting economic values which should be balanced against these risks. However, it highlights significant disadvantages with the policy and it is not clear that these have yet been fully assessed."*

Stakeholder commentary on Ofgem's 45-year asset lives policy

Outside of the ED1 CMA appeal, stakeholders have commented on the implications of Ofgem's 45-year asset lives policy in electricity distribution. For example, a report from Grid Edge Policy states that "[b]*ecause historically the asset life used was shorter, the act of switching from one basis to another creates an artificial "payment holiday" which benefits current customers and places a huge burden on future consumers.*".[35]

The report concludes that: "*While the idea of moving to a 45 year asset life may sound superficially sensible, the impact of moving from one asset life to another, in the way Ofgem proposes, creates perverse effects with an initial drop in the network component of bills followed by a very significant ramp up in the long term. This cuts across principles of inter-generational equity*".

It states that:

> *"Taking this forward requires transparency about what those long-term bill impacts are which has been absent from the consultations to date. The impacts need to be presented out to 2060 not just for ED2. The debate then needs to move away from being a technical debate about what are positioned as financial parameters discussed deep in the annexes of regulatory documents to focus on the outcome we want to see."*

In 2025, the ENA commissioned a series of reports from NERA[36] to examine Ofgem's decision at ED1 to extend regulatory asset lives to 45 years to reflect average expected economic life. Appendix A includes a more detailed discussion of these reports

The NERA reports reference Ofgem's objectives to ensure intergenerational equity and sustainable financeability. NERA concludes that Ofgem's policy fails on both of these objectives, and states that there is a "*compelling case for accelerating depreciation at ED3*".[37] In terms of modelling impacts, NERA estimates that DNO depreciation charges will fall over the next decade under Ofgem's policy – relative to the counterfactual if Ofgem had not extended asset lives to 45 years – before eventually returning to this counterfactual level during the 2060s. NERA describes this as a "*a deep valley of depreciation".*

With respect to financeability, it states that retaining 45-year asset lives would have negative implications for DNOs. NERA estimates under-recovery of approximately £2bn for a notional DNO (cumulatively up to the 2060s). It models

[34] Ibid., para 7.11, p. 124

[35] Grid Edge Policy (2022): Understanding Asset Lives

[36] These reports are available within the responses to Ofgem's consultation on the framework for ED3 (2025) and within the responses to Ofgem's sector specific methodology consultation (SSMC) for ED3 (2025)

[37] NERA (2025): Depreciation Policy for RIIO: A report for the ENA.

the financial implications as follows: "*FFO-based ratios (Moody's FFO/debt and RCF/debt and S&P FFO/debt) deteriorate by up to 320 bps during the "depreciation holiday" period and by 260 bps in the long run under the RIIO depreciation policy".*

With respect to intergenerational equity, NERA states that Ofgem's current depreciation policy – if it were continued to ED3 and beyond – would have "*negative implications for intergenerational equity… and long-term affordability*". NERA's model demonstrates that current customers will experience a reduction in their depreciation charge, while future customers will experience an increase in their total charge, due to higher allowed returns:

> *"Current customers receive a "discount" on network charges due to the "dep[reciatio]n holiday", but future customers (from around 2050) pay higher charges forever as a result of the permanently higher RAV and allowed return".*

NERA estimates that *"average customer bills increase by around 10% in the mid-2060s and beyond under RIIO depreciation rules".*

Overall, NERA describes this as a "*perverse effect*", given Ofgem's intention to support intergenerational equity, and in a follow-on report concludes that:

Box 6 – Excerpt from NERA (2025)[38]

"[W]*e showed that until the start of RIIO-ED1, DNOs' allowed regulatory depreciation broadly tracked capex over time. This indicates that prior to RIIO-ED1, customers broadly paid charges in line with the underlying level of capital consumption. The depreciation gap therefore comes at the expense of future customers.*

As such, how is it possible that prior to RIIO-ED1 customers did not pay too much depreciation if the economic asset lives are assumed to be 45 years while regulatory asset lives are shorter? The reason for this is that the RAV at privatisation was set below the full economic value of the assets (the MEAV). The MEAV discount appears to have offset the shorter regulatory asset life assumption and taken together produced depreciation allowances which broadly reflect the economic use of the assets (as proxied by capex).

An effect of the current RIIO-ED1 policy is to unwind the MEAV discount, providing customers during the depreciation holiday period an additional benefit (by paying less than economic depreciation) but this comes at the expense of future customers who subsequently have to pay for a higher RAV (i.e. the full MEAV), and its higher associated financing costs, in perpetuity. This is intergenerationally unfair."

2.6. Ofgem's Commitments on Depreciation for ED3

In the ED3 Framework Decision,[39] Ofgem signalled its intention to revisit the role of regulatory depreciation as part of a broader, more holistic approach to investment and financeability. In particular, Ofgem highlighted that the expected increase in capex over ED3 and beyond may require a reassessment of whether current asset lives and depreciation profiles remain appropriate. This reflects Ofgem's recognition that depreciation policy is not just a technical parameter, but a key lever in the consideration of intergenerational fairness, and in managing the timing of cash flows and supporting the financing and deliverability of network investment plans.

At the same time, Ofgem stopped short of committing to specific changes, instead framing this as a structured review of regulatory depreciation policy alongside a wider emphasis on maintaining a stable and predictable financial framework, building on the principles established in RIIO-3. The emphasis on a "balanced" approach indicates that any adjustments will need to carefully weigh short- and long-term financeability issues against affordability and consumer value.

[38] NERA (2025): Depreciation Policy Solutions for RIIO-ED3: A report for the ENA.

[39] Ofgem (2025): ED3 Framework Decision

3. REGULATORY DYNAMICS AND ECONOMIC PRINCIPLES OF DEPRECIATION

Section 2 set out the impacts and implications of Ofgem's current depreciation policy. In this section, we explain the regulatory dynamics underpinning these impacts, discuss the economic principles that should be applied to the task of setting regulatory depreciation, and respond to these three specific questions posed by Ofgem:

- Is there a distinction between economic asset lives and the time periods over which the benefits of assets accrue to consumers?
- How should an asset life be apportioned to consumers if investment was anticipatory?
- Is it sufficient to set the cost of capital and asset lives to ensure costs are appropriately recovered?

3.1. Explanation of regulatory dynamics

Ofgem's historic policy of 20-year asset lives accelerated depreciation relative to the assets' useful lives. From a consumer perspective, this brought forward depreciation from future consumers to current consumers. The absolute cost burden on current consumers was largely mitigated by the discount on the RAV that was adopted at the time of privatisation. From a DNO perspective, a policy of 20-year asset lives brought forward allowed revenues, and led to a smaller RAV than would have otherwise been the case.

The process of 'unwinding' Ofgem's previous policy of accelerated depreciation – by transitioning from a 20-year asset life to a 45-year asset life – has several mechanical features:

- **A temporary reduction in depreciation**. The switch to a 45-year asset life slows the rate of depreciation for new assets, relative to existing assets. Therefore, over time, as existing assets are gradually replaced by existing assets, the total depreciation is lower, because it is increasingly determined by new assets, rather than by existing assets. This causes the temporary reduction in depreciation during a transition period.
- **A change in depreciation policy inevitably leads to a transition period**. Any change in depreciation policy – such as from 20 years to 45 years – will generate a mismatch in depreciation rates between existing and new assets, and lead to a 'transition period' in which depreciation is higher or lower than previously. The impact on depreciation in the transition period will depend on whether the depreciation rate for new assets is faster or slower than the previous depreciation policy for existing assets. However, even though any change in depreciation policy has an impact on depreciation charges, this effect is transitional (see below).
- **Total depreciation charges converge in the long run**. Over time, depreciation charges will align with the level of investment, which results in a long-term 'steady state'. Regardless of the asset life, the profiles of total depreciation charges will eventually converge. Therefore, despite a temporary reduction in depreciation, in the long term (steady state) the total depreciation charge under a 45-year asset life will converge back to the level that it would have been if Ofgem had maintained its previous (accelerated) 20-year asset life policy.[40]
- **The RAV increases in the long run**. As the RAV is replaced with 'new assets' over time – which depreciate more slowly than the existing assets – the total RAV at steady state will eventually be higher under 45-year asset lives, relative to the RAV for existing assets depreciated under a 20-year asset life.

[40] This is demonstrated in the ENA and NERA's analysis. The annual depreciation charge reverts to a long run 'steady state' level under all of NERA's modelled policy options, regardless of the asset life and/or depreciation profile. See NERA (2025): Depreciation Policy for RIIO: A report for the ENA.

More broadly, we can know *directionally* how the RAV will vary for a given change in depreciation policy. For example, an increase in the asset life will reduce the speed of depreciation of new assets, will reduce the total depreciation during the transition period, and will therefore increase the RAV in the long run. For this reason, the shift to 45-year asset lives increases the RAV in the longer term.

- **The changes across depreciation and the RAV are (theoretically) NPV neutral for companies**. Assuming the cost of capital is set appropriately, any change in depreciation policy is NPV neutral. However, Ofgem's current policy reduces short term cashflows from the depreciation allowance, and simultaneously increases the RAV over time. Changes in depreciation policy change the duration of cashflows, which can have practical implications for the risks faced by investors and debt financeability (see discussion below). As discussed in Section 2, there has also previously been some debate, including at the time of the RPI-X@20 review, as to whether the duration of cashflows impacts the cost of capital.[41]
- **Consumer prices are higher in the long run**. For a given cost of capital, a higher long-term RAV leads to a higher allowed return on capital, which is one component of total revenues recovered by the DNOs. In the long-term steady state, depreciation is identical under different depreciation policies (as noted above), but the higher allowed return under a 45-year asset life results in higher allowed revenues for DNOs, and therefore consumers will pay higher charges under a 45-year life in the long-term.
- **Consumer charges are re-balanced from current to future consumers**. The current 45-year asset lives policy – via the slower rate of return of capital and higher long term RAV that this gives rise to – in effect, shifts the burden of electricity distribution costs to future consumers. This is when demands on the distribution network are expected to be higher and anticipatory investments in the network expected during ED3-ED5 are expected to become more highly utilised.

3.2. Overarching economic principles

In this section we discuss guiding economic principles and potential desired outcomes for regulatory depreciation policy and how a regulator might approach assessing an optimal depreciation policy.

3.2.1. Guiding economic principles

In a regulated energy network context, depreciation policy is best thought of as an intertemporal cost allocation problem. Namely, what is the best way to allocate a network's capital costs over time, and across price review cycles. Framed within Ofgem's statutory duties, energy network depreciation policy is, therefore, a question of how to effectively balance current and future consumers' interests within the context of changing use and demands on the network. A useful guiding principle for regulators is to allocate costs over time to take account of how consumer use of the network is expected to change over time.

At the same time, Ofgem needs to ensure that the resulting cashflow for the network companies is capable of being financed by the licensees and their investors.

These principles build on previous publications by CEPA and Ofgem. CEPA's asset lives report for Ofgem (2010) states that "*an appropriate profile of depreciation would set an appropriate phasing of charges to customers*".[42] CEPA's 2010 financeability report for Ofgem uses the following definition: "*From an economic perspective, depreciation is a measure of the consumption of capital that takes place as a service is provided to consumers".*[43] Ofgem's RIIO-ED2 Final Determinations states: "*In our view, the rate of depreciation should be set so that different*

[41] See discussion of this issue in Section 2.5.

[42] CEPA (2010): The Economic Lives of Energy Network Assets

[43] CEPA (2010): RPI-X@20: Providing Financeability in a Future Regulatory Framework

generations of consumers pay network charges broadly in proportion to the value of network services they receive".[44]

Moreover, these are the principles which can be thought of as having guided Ofgem's recent decision to accelerate depreciation for gas distribution in the GD3 price review. In the gas distribution context, Ofgem has determined to accelerate depreciation for new network assets reflecting "*a balanced regulatory stance that aims to protect both current and future consumers".*[45] This is discussed further in Section 4 below.

3.2.2. Desired outcomes and how to assess them

Depreciation policy and its implications for intergenerational equity

Intergenerational equity is concerned with considering whether the intertemporal profile of customer charges is better or worse than some other intertemporal profile of charges. There are several plausible positions on what intergenerational equity might mean in practice for depreciation, including the following:

- Allocating costs in proportion to network utilisation (e.g. proportional to average demand) over time.
- Allocating costs in proportion to network access (e.g. availability of network services, regardless of whether they are used or not. This might be the case for anticipatory reinforcement for EVs/HPs).
- Allocating costs via Ramsey pricing principles, i.e. where changes in prices are inversely proportional to elasticity of current and future demand.

While economics does not prescriptively define what intertemporal equity means in practice, it can help to identify the lens through which different options should be assessed.

From an economic perspective, **intergenerational equity should primarily be assessed by the impact on costs borne by customers across time**. This means the primary means to judge the equity and intergenerational fairness of depreciation policy is to consider what are the implications for customer prices over time, in the context of the changing and uncertain demands on a network over time. For example, as a general rule, if demand is expected to stay generally constant over time (e.g. because the network is stable, rather than growing in the demands of its services), it is plausible that prices (in real terms) to customers should also remain broadly constant over time.

Depreciation policy and its implications for financeability

Regulated utilities need to assure investors that they will provide a return on and of justifiable investments. Under a building block regime, depreciation is one of the core building blocks of company returns, so depreciation policy needs to support the overall regulatory objectives.

It is relatively straightforward to show that any depreciation rule that recovers the allowed investment deals with the return of the asset value (e.g., Newbery, 1997).[46] Provided that the allowed return on the RAV is then set to reflect the opportunity cost of capital, regulatory price controls may in theory then be considered financeable. This is discussed below in the context of FCM.

However, there are several practical issues to consider in the context of depreciation policy. First, it has previously been debated whether a material change in the duration of cash flows resulting from a change in regulatory depreciation policy may give rise within a regulated network context to a change in the cost of capital. This is tied up with the issue of regulatory commitment to the returns on and of capital over time. If weakness is perceived within the regulatory commitment, a depreciation policy that lengthens cash flows may be seen to exacerbate the increase in financial risk faced by investors.

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[44] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex, Ch. 10

[45] Ofgem (2025): RIIO-3 Draft Determinations - Finance Annex p.128

[46] Newbery, D. (1997): 'Determining the regulatory asset base for utility price regulation', Utilities Policy, Vol 6, No 1, pp 1-8

A second issue is that the profile of cashflows that a particular depreciation policy may give rise to may have practical implications for network companies' credit ratios – in particular, FFO based metrices – that rating agencies consider in their assessment and which form part of debt financeability assessments by Ofgem, other UK regulators and the CMA. While two sets of cashflows may ultimately be NPV neutral in their outcome, the profile of cashflows – particularly in the context of large, investment programmes – may have different implications for financeability. A regulator may need to give consideration to these implications when determining the optimal depreciation policy for the network company (or companies) in question.

Overall, it is appropriate for the regulator to be mindful of the impact of depreciation policy on financeability, noting that its significance of its influence is a point of debate. Furthermore, financeability would be expected to be considered as part of the overall price control package, rather than independently of other building blocks.

3.3. Discussion of key features

With the guiding principles and desired outcomes discussed above in mind, the subsections below discuss what might be desirable features of depreciation policy that will influence the rate of depreciation of the RAV.

First, we consider the decision of asset lives that are used, given Ofgem's existing depreciation policy is based on aligning the rate of depreciation with economic asset lives. Second, we consider issues relevant to determining the appropriate profile of depreciation (e.g., straightline vs. back or front-loaded depreciation). Third, we consider the derivation of the customer price profile over time.

Asset lives should reflect the profile of utilisation and demand for network assets over time

For electricity distribution network assets, there appears to be reasonable consensus that an average asset life of approximately 45 years would constitute an appropriate economic basis for depreciation. At least, the principle of alignment between the asset's useful life and the regulatory asset life does not appear to be widely debated or contested.

The CMA's response to the appeal by British Gas explicitly recognised the economic principles underpinning Ofgem's policy to increase asset lives to 45 years at ED1:

> *"GEMA's approach within RIIO was based on the assumption that there were benefits with moving to an approach where asset lives were aligned with economic lives. In theory (and in the longer term), this would result in prices being better aligned to true economic costs, with asset values and annual depreciation both representing economic values (i.e. values that would be consistent with a competitive market)".*[47]

BGT's appeal to the CMA also recognised these principles: "*BGT argued that GEMA had identified the economically right level of depreciation*".[48]

At Ofgem's ED1 Final Determinations, the majority of companies supported Ofgem's decision to increase asset lives to 45 years.[49] For the DNOs (and wider stakeholders) that did not wholly support Ofgem's policy, the main criticisms of the shift to 45 years were focused on the temporary effects of the transition, particularly in relation to financeability, rather than the principles of the policy in a long run steady state.[50]

[47] CMA (2015): British Gas Trading Limited v The Gas and Electricity Markets Authority, p.122

[48] CMA (2015): British Gas Trading Limited v The Gas and Electricity Markets Authority, p.125

[49] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex, Ch. 10

[50] Ibid.

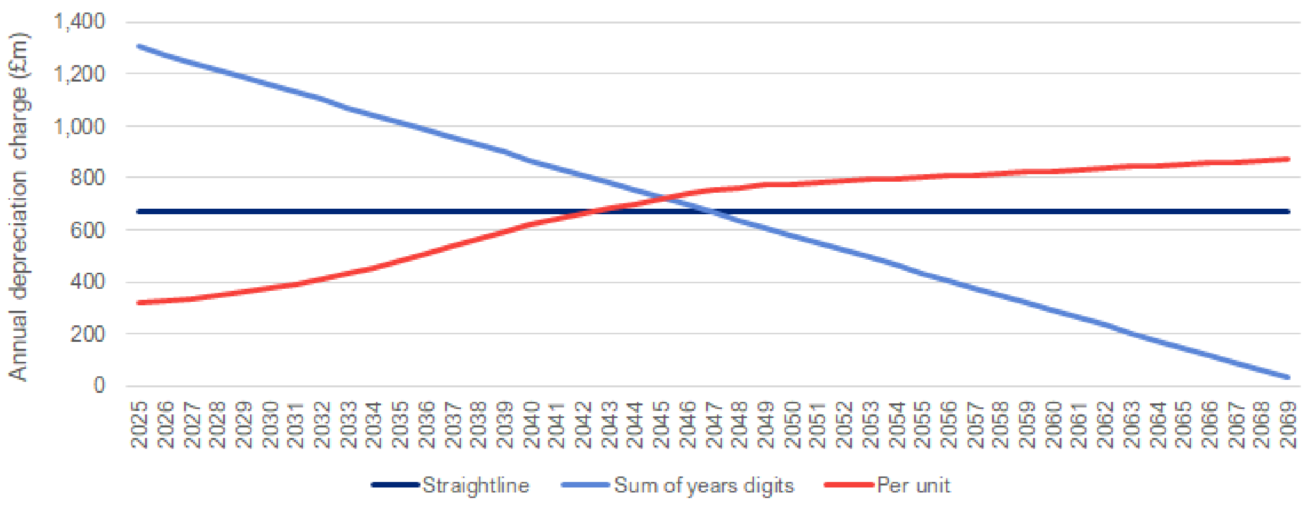
NERA's recent analysis for the ENA of Ofgem's current depreciation policy does not appear to contest the use of 45-year asset lives in principle. Indeed, it uses – as one of its "*reasonable depreciation benchmarks*" – the application of a 45-year asset life and straightline depreciation to all historical capex.

NERA describes this as "*the proxy for the economic depreciation charge*".[51] Moreover – similar to the stakeholder responses to Ofgem's ED1 Final Determinations – NERA's analysis focuses on the transitional (temporary) effects of the change in depreciation policy, including the impact on company financeability, rather than arguing against the economic principle that regulatory asset lives should be set equal to their useful lives.

The profile of depreciation should also reflect utilisation and demand for network assets over time

There are multiple possible profiles for depreciating assets, including: **straightline** (a constant annual depreciation value of the life of the asset); **sum-of-digits** (a more front-loaded approach); and **per-unit** (which is dependent on the forecast profile of usage over the asset life, and which could be backloaded if asset utilisation is expected to increase over time). CEPA's 2010 report for Ofgem on asset lives provides a fuller description of these potential options.[52] Figure 6 below provides an illustrative indication of annual depreciation (from a starting RAV of £30bn and no additional capex) under different depreciation approaches.

Figure 6: Illustration of depreciation policy on annual depreciation charge[53]



Source: CEPA analysis

If depreciation is to reflect the phasing of demand for network services over time, then the choice of depreciation profile needs to consider two key aspects: first, the profile of utilisation, because higher utilisation may imply greater benefits; and second, changes in costs over time.

Profile of usage

If assets have a higher value and/or usefulness to consumers in the future – either because the network is initially oversized to accommodate future growth (and utilisation and/or demand increases) and/or because the NPV of early rather than later investment is higher, then it is preferable to avoid frontloading depreciation. The CEPA 2010 paper for Ofgem also discouraged a front-loaded approach:

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[51] NERA (2025): Depreciation Policy for RIIO: A report for the ENA

[52] CEPA (2010): The Economic Lives of Energy Network Assets

[53] Assumes asset life of 45 years. Per unit depreciation is proportionate to utilisation in that year, based on 'Electric Engagement' demand forecast from Future Energy Scenarios (NESO). Illustratively, projected forward from 2050 to 2069 based on the absolute change from 2049 to 2050. For sum of years digits, share of total depreciation in *year n* = (45 + 1 – n) / $\sum_1^{45}$

> *"Given our expected profile of* [electricity network] *usage, if a non-straight-line approach were to be adopted a back-end loaded approach would appear to be appropriate*".[54]

However, even if assets are initially underused, there may be arguments for a straightline approach. For example, some anticipatory investment may be available for customers to use – even if they 'choose not to' (e.g. by not taking up EVs or HPs).

Across different potential depreciation profiles, it is important to recognise the distributional implications. For example, with backloaded depreciation, older customer groups may stand to benefit through slightly reduced bills in the short-term relative to the counterfactual of straightline depreciation. However, for most customer groups a backloaded schedule would average out payments over time. For younger cohorts, these changes will be NPV neutral under the 'building block' regulatory approach, as a more backloaded depreciation schedule will lead to a larger RAV and a higher allowed return.

Assets could also have a lower value to consumers in the future if utilisation and/or demand falls, e.g. the risk of stranding of oversized networks built to meet a possibly absent or delayed demand for low carbon technologies (LCTs).

The question of the uncertainty of future demands and their impact on network investment has been considered by Crawford (2015), who argues: "*Traditional monopoly regulation as applied to the Australian electricity and gas network sector effectively presumes future consumers will meet a substantial proportion of the capital costs of long-lived network investments made today. Yet changes in demand, technology and cost conditions make this presumption less certain than in the past. These changes are potentially putting current approaches, and effectively the traditional 'regulatory compact', under pressure*".[55]

This risk of stranded assets is primarily a problem of gas networks that might be stranded with a major move to electrification, rather than of customers disconnecting from the electricity grid. The latter case is unlikely in the UK. Ofgem has responded to the risks of economic standing of the gas network by moving to a policy of accelerated depreciation for new assets purchased by gas distribution network companies.[56]

National Grid has argued that increased uncertainty regarding the useful economic life of electricity distribution network assets justifies a change to Ofgem's depreciation policy. For example, it suggests that reinforcement costs from connecting solar farms could be at risk from farms returning to agricultural use, that climate change could shorter the lives of overhead lines, and that greater investment in (shorter lived) IT assets could bring down the weighted average asset life across the network. National Grid's conclusion is that Ofgem's current policy of 45-year straightline depreciation "*may not be the most appropriate approach going forwards*", and instead suggests a front-loaded, sum of digits approach, which would see "*higher depreciation charges in the period where the value is more certain and lower charges for the more uncertain time periods*".[57]

Some of these challenges were considered in CEPA's 2024 report on transmission asset lives for Ofgem ahead of the ET3 determinations. Overall, while it was acknowledged for electricity transmission that the asset stranding risk does (at least in principle) exist, the conclusion was that this was likely asset-specific and idiosyncratic, rather than being systematic and representative of the wider asset base. Moreover, a shift in the balance between expenditure on IT assets and more traditional core network assets is more appropriately considered through the treatment of capitalisation rates, rather than through adjustments to asset lives.

Overall, asset stranding appears less likely for electricity distribution network assets and the risks to stranding put forward by National Grid do not appear to be highly material. Uncertainty is less likely about whether electricity assets will be economically stranded, and more about the utilisation of anticipatory investment that is made by

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[54] CEPA (2010): The Economic Asset Lives of Energy Networks

[55] Crawford, G. 2015. Network depreciation and energy market disruption: Options to avoiding passing costs down the line, Economic Analysis and Policy, 48(C), pages 163-171. DOI: 10.1016/j.eap.2015.11.004

[56] Ofgem (2025): RIIO-3 Draft Determinations - Finance Annex

[57] NGET (2025): ED3 framework consultation response

DNOs over time – which will be a function of the level and the timing of uptake for technologies which impact network size and load factors, such as EVs and heat pumps.

Profile of costs over time

Accelerated depreciation is more attractive where technical progress is likely to lower future costs, and hence the optimal deprival value of assets. This is likely for any software-based equipment like smart meters which typically also have a relatively short asset life, e.g. 15 years. Buried cables would seem immune from much technical progress and the cost of replacement is more likely to increase over time (disruption, labour costs, cost of copper etc.) Overall, given that Ofgem sets asset lives as an average across the network, there does not appear to be strong evidence on the basis of cost changes to deviate from a straightline approach.

Stakeholder perspectives and international examples

NERA's analysis (for the ENA) of Ofgem's current depreciation policy uses – as one of its "*reasonable depreciation benchmarks*" – the application of a 45-year asset life **and straightline depreciation** to all historical capex. NERA describes this as "*the proxy for the economic depreciation charge*".[58] In addition, for Ofgem's ED1 Final Determinations, the majority of DNOs supported Ofgem's proposal of 45-year straightline depreciation.[59]

Where stakeholders have proposed alternative depreciation profiles to straightline, this has typically been done with reference to the adverse effects of straightline depreciation (e.g. within the context of lower company revenue during the transition to longer asset lives), rather than by contesting the economic merits or principles of straightline depreciation.

In terms of international regulatory precedent, CEER (2025) finds that "***almost all countries use the straightline approach** towards depreciation*".[60] This is set out in Appendix B.

In terms of anticipatory investments, ACER-CEER (2024) issued a joint position paper based on research across a number of European country electricity networks.[61] The paper finds that: "*Regulatory treatment does not differentiate anticipatory investments from other investments… Based on the NRAs' responses, the regulatory treatment, including cost-recognition process and regulatory incentives, does not distinguish between "anticipatory" investment and other investments into the grid, neither for transmission nor for distribution, in the reviewed national frameworks*". Given the CEER (2025) finding above, that almost all countries use straightline depreciation, **most countries therefore also apply straightline depreciation to anticipatory investments**.

Although straightline depreciation is the predominant approach, the ACER-CEER (2024) paper does provide some discussion and nuance, noting that different types of investments have different risk profiles, and that a lack of special regulatory treatment for anticipatory investment might disincentivise such investment: "*In case there is a high risk that the project will become stranded or underutilised… the system operators are more likely to refrain from investing in such projects".*

Internationally, there is some evidence of exceptional cases where regulatory frameworks have been adapted to mitigate system operators' risks of underutilised and/or stranded investments. These largely relate to stranded assets, rather than anticipatory investment. For example: *"In Germany, there is a special depreciation [policy] that*

[58] NERA (2025): Depreciation Policy for RIIO: A report for the ENA

[59] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex, Ch. 10

[60] CEER (2025): Regulatory Frameworks for European Energy Networks 2024

[61] ACER-CEER (2024): Position on Anticipatory Investments

can also be used to depreciate e.g. "stranded assets" and residual risks are compensated by the market risk premium within the imputed rate of return on equity".[62]

The New Zealand Commerce Commission (NZCC) has previously considered the issue of emerging technologies and the risk that some distribution networks might not be able to recover the cost of their investments in 'economically stranded' assets. NZCC identified greater uncertainty in relation to the risks of partial capital recovery faced by companies and stated it would "*reconsider our existing decision to primarily base asset lives on physical asset lives*". NZCC's solution was to allow companies to apply for a reduction in asset lives, of up to 15%.[63] One of the main reasons given was to support customers: if there were to be future stranding in the future, that could significantly increase the prices faced by customers at that time if the remaining asset life is rapidly depreciated.

Summary of analysis of depreciation profile

Overall, straightline depreciation for electricity network assets appears to be a reasonable basis. There are potential arguments for backloading: possibly because of anticipatory investment or to achieve a more stable profile of 'per unit' customer charges over time, given forecasts of rising demand on the electricity distribution system. The main rationale for frontloading would be if there is uncertainty around utilisation and network asset lives (e.g., from impacts of climate change on asset replacement). A further rationale would be to support financeability, but this is based on the effects of the depreciation profile, rather than economic principles.

The resulting profile of consumer prices should reflect changes in demand and utilisation over time

From an economic perspective, the primary means to judge the equity and intergenerational fairness of the impacts of depreciation policy is to consider its implications for prices over time, taking into account the expected profile of demand and utilisation.

As discussed in Section 2, depreciation and the RAV are effectively two sides of the same coin: a slowing of the rate of depreciation (under Ofgem's current policy) results in a larger RAV build-up and higher return 'on' capital over the long-term – which is NPV neutral assuming an appropriate cost of capital. Exchanging one for the other has intertemporal implications. For example, with a slower depreciation rate, in the short term the reduction in depreciation revenue outweighs the increase in allowed returns from gradual growth in the asset base; whereas in the long term there are higher revenues, due to the total depreciation charge returning to its steady state level plus a higher allowed return on the larger asset base.

Whether to tilt revenues towards the short-term or the long-term depends on the profile of demand. In Section 2, Figure 1 illustrates the forecast growth in demand (kWh) across the electricity distribution network over time. This can be applied to total electricity distribution charges to derive a price per kWh over time. Alternative measures could also be considered, with different denominators, such as cost per customer. In Section 4, below, we analyse the implications of this for Ofgem's depreciation policy.

This overall principle – that customer prices should reflect changes in demand and utilisation – can be thought of as having guided Ofgem's recent decision to accelerate depreciation for gas distribution in the GD3 price review. Ofgem has determined to accelerate depreciation for new network assets, on the basis that it will deliver a more

[62] The regulatory authority (BNetzA) has recently introduced a regulation, effective from 2025, authorising accelerated depreciation for gas infrastructure. This decision permits network operators to apply shorter depreciation periods, with components of gas networks depreciable by 2035 in exceptional cases, and generally until 2045. In specific instances, the depreciation profile is able to be front-loaded to align with declining gas sales, assisting operators in amortising investments and sustaining financial stability. Similar to the methodology employed in the Netherlands, the depreciation rate is calculated to optimise cost recovery taking into account forecast demand and the risk of disconnections from increased tariffs. This methodology complements the previous policy where any new investment was constrained to a depreciation period until 2045 to align with government target for achieving climate neutrality. Consultation paper - GRC0082 - Gas networks in transition

[63] Commerce Commission New Zealand (2016): Input methodologies review decisions, Topic paper 3: The future impact of emerging technologies in the energy sector

stable set of charges for current and future consumers, given the expected decline in demand on the gas distribution network, alongside concerns of asset stranding.

It is also important to recognise risk and uncertainty. For example, under a policy where the RAV is higher, future changes to interest rates would have a more material impact on DNO revenue via the cost of capital, and electricity consumers would face greater exposure to price fluctuations. Therefore, an assessment of consumer prices should consider not just their *level*, but also potentially their potential *variance* over time under alternative regulatory depreciation policies.

3.4. Financial capital maintenance

Financial Capital Maintenance (FCM) requires the present value of expected capital charges for an asset over its economic life to be equal to the initial asset value or purchase cost. The capital charge for all assets (i.e. the RAV) in a given year comprises both the return on capital (the allowed return, i.e. WACC) and the return of capital (i.e. depreciation charge). The FCM principle holds at any point in the asset's life: at that moment, the regulatory asset value in the RAV (initial value less allowed cumulative depreciation to date) should equal the present value of expected capital charges over the remaining life of that asset.

The Queensland Competition Authority defines this principle as follows:

> *"As long as the present value (PV) of future regulated returns, calculated on the basis of an appropriate opportunity cost discount rate, is equal to the value of the regulatory asset base (RAB), the FCM principle is achieved. The FCM principle in an exact sense is often referred to as the NPV=0 principle".*[64]

Biggar (2011)[65] quotes Baumol (1971), that "*there may be many alternative revenue streams, each of which can give investors their required returns*" and will over time, comply with FCM. Moreover, leveraging research from Schmalensee, Biggar states that the choice of depreciation profile is "*essentially arbitrary (from an NPV=0 perspective)*", provided that "*the regulator sets the allowed rate of return equal to the firm's true cost of capital*".[66]

However, the regulator may face imperfect information when seeking to set the appropriate cost of capital. Moreover, even where the regulator succeeds, different NPV-neutral depreciation schedules can have different implications for intergenerational equity, depending on the timing of charges.

An important point of debate regarding the theory of FCM is whether the cost of capital will in practice remain constant across different depreciation profiles with different durations of cashflows. Oxera's 2010 report for the ENA finds some evidence that longer term cash flows may in the context of regulated networks influence the cost of capital.[67] The implication of Oxera's analysis is that a change in depreciation policy that increases the duration of cash flows would need to be accompanied by an increase in the cost of capital in order for FCM to hold. However, as noted in CEPA's 2010 financeability report, companies operating in a competitive market environment utilise a range of options to manage variations in the durations of cash flows, and as discussed in CEPA's follow up note, the allowed WACC is arguably already predicated on a longer-term basis to start with (see Section 2.5).[68]

This is a point of debate but in theory at least for FCM to hold for a change in depreciation profile (such as Ofgem's ED1 decision), the regulator should ensure that the cost of capital remains appropriate following the change in regulatory policy.

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[64] Queensland Competition Authority (2014): Financial Capital Maintenance and Price Smoothing

[65] Darryl Biggar (2011): 'The Fifty Most Important Papers in the Economics of Regulation', ACCC/AER Working Paper Series, Working Paper No. 3

[66] Queensland Competition Authority (2014): Financial Capital Maintenance and Price Smoothing

[67] Oxera (2010): What is the impact of financeability on the cost of capital and gearing capacity?

[68] CEPA (2010): RPI-X@20: Providing Financeability In A Future Regulatory Framework

3.5. SPECIFIC OFGEM QUESTIONS ON DEPRECIATION POLICY

Is there any distinction between economic asset lives and the time periods over which the benefits of assets accrue to consumers?

There are several layers to this question.

First, the life of the asset in years should in principle align with the number of years for which it provides benefits to consumers. CEPA's 2010 report for Ofgem on asset lives sets out that an asset's 'depreciation life' is the minimum of the economic life and technical life. Economic life is referred to as its "useful asset life", when it provides "service", which aligns to the years for which an asset confers benefits for customers.

Second, even if the number of years align, the profile of benefits is not necessarily uniformly distributed over the course of the asset life. That is to say, straightline depreciation across the economic asset life is not automatically the most appropriate depreciation schedule in all cases. In economic terms, depreciation should reflect the share of benefits from capital derived by users, which might support a back-loaded depreciation profile if LCT uptake is expected to increase over time.

Third, there may be timing issues. The precise timing and/or profile of benefits to consumers may not be known at the point of investment, so the (ex post) useful asset life may deviate from the (ex ante) expectation. In addition, regulatory policy tends to be set at specific points in time (e.g. price control reviews), which reduces the frequency with which asset lives are adjusted. In practice, this increases the likelihood of a mismatch (between the economic asset life and the time period of benefits to customers).

As discussed above, there is regulatory precedent for managing this timing mismatch. The NZCC has allowed network companies to apply for a reduction of up to 15% in asset lives for assets that can be justified to be 'economically stranded'.[69]

Fourth, regulators often set asset lives on a weighted average basis across assets. Therefore, for a given asset, the economic asset life and the time period of benefits to customers are likely to be non-identical.

How might an asset life be apportioned to consumers if investment was anticipatory (i.e. incurred ahead of need)?

As Ofgem states in the context of ED2, the term 'anticipatory' is relative, rather than absolute, as it "*requires judgement on the levels of risk and the prospect of additional benefit to be applied on a case-by-case basis*".[70]

The guiding economic principle is that depreciation should reflect the share of the benefits that users derive from capital.

If anticipatory investment results in higher utilisation over time, this could present an argument for backloaded depreciation. Benefits may also be derived from 'access' to infrastructure, even if this does not necessarily translate into higher utilisation. For example, while growth of low carbon technologies may result in greater network utilisation eventually (e.g. due to greater EV uptake), households will increasingly have access to reinforced network infrastructure in advance of using it. If having access to the network is deemed to provide genuine customer benefits (such as options and/or flexibility) in advance of utilisation, that might reduce the rationale for backloading as opposed to using a straightline approach.

A slightly separate issue is around uncertainty of future network utilisation. For example, if the depreciation policy is set and then subsequently useful asset lives are reduced (e.g. due to asset stranding), this creates a risk for investors and/or that customer charges will spike to recover the costs of stranded assets. In this case, uncertainty over the asset life might create a case for frontloading of depreciation.

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[69] Commerce Commission New Zealand (2016): Input methodologies review decisions, Topic paper 3: The future impact of emerging technologies in the energy sector

[70] Ofgem (2019): RIIO-2 Sector Specific Methodology – Core document

However, not all uncertainty presents a case for frontloading. For example, while the potential for shorter asset lives creates a downside risk, there is also 'upside risk' for companies, that assets may turn out to have longer useful lives than anticipated at the point of investment. These bi-directional uncertainties present risks to both companies and consumers. They include a risk that the useful asset life could be longer or shorter than a priori expectations, or uncertainty around changes over time in the utilisation profile.

Overall, aside from the specific risk of asset stranding (which is significantly less likely for electricity than for gas), anticipatory investment appears to lend itself to a straightline or backloaded depreciation profile, rather than frontloaded. Moreover, depreciation policy (including asset lives) appears an overly blunt tool to managing these types of general uncertainties, and there would be merit in considering a wider set of regulatory tools.[71]

In addition to economic principles, there are pragmatic factors which could impact the choice of depreciation profile. Forecasts of rising electricity demand – and projections of falling 'per unit' electricity prices – create an opportunity to backload depreciation to smooth prices. While this is in one sense pragmatic in terms of minimising short term customer bills, smoother per unit electricity charges over time could also be perceived as supporting intergenerational equity, at least from an overall charging perspective.[72]

The need for a large capex programme of anticipatory investment creates an associated need for assurance around network companies' financeability. This could be supported by a more front-loaded depreciation schedule which reduces the duration of cashflows, or a regulatory commitment to a long-term price path.

Precedent from Europe is supportive of applying straightline depreciation (see Appendix B), both in general and specifically in relation to anticipatory investment: "*Almost all countries use the straight-line approach towards depreciation*" and most regulators do not distinguish anticipatory investment from other capex.[73] There are some exceptional instances of front-loaded depreciation for energy network assets, although this is used to deal with asset stranding risk, rather than anticipatory investment, and therefore applies largely to gas networks, rather than electricity. This means that overall – in practice – most countries adopt straightline depreciation policy to the types of investments that could be considered anticipatory.

Is it sufficient to set the cost of capital and asset lives to ensure costs are appropriately recovered?

Reflecting the guiding economic principle we have set out above, regulators should look to allocate and recover costs over time in a way that takes account of consumer demand, and how those demands are expected to change over time, i.e., the expected time pattern of usage.

As we have discussed above, in the context of expected anticipatory investment and growing demands on the electricity distribution network, the profile of depreciation is also relevant to whether the rate of depreciation and the resulting long-term level of RAV will allocate costs appropriately. Effective regulatory decision-making in this context, therefore, goes beyond just setting the cost of capital and asset lives. It requires consideration of the implications of the asset lives and profile of depreciation for the expected level of RAV, and the associated trajectory of prices over time, in the context of the changing use and demands on the network in question.

This question also considers whether FCM holds under a change in depreciation profile for a given allowed rate of return. As discussed above, in theory, any profile of depreciation achieves FCM, i.e. the present value of future cash flows is equal to the current asset value (net of any depreciation to date). However, in practice there are a range of considerations that affect whether regulatory policies are appropriate to ensure cost recovery.

First, prior analysis by Oxera has indicated that NPV-neutral cash flows with different durations could have different risk profiles, which impacts the cost of capital. If the profile of cashflows lengthens significantly, this has been argued to increase the risk of time inconsistency, whereby a regulator could be incentivised to reduce the cost of

[71] As the NZCC example helps to illustrate.

[72] See further discussion below in Section 4 in the context of the electricity distribution sector.

[73] CEER (2025): Regulatory Frameworks for European Energy Networks 2024

capital in the future, after sunk investment has been undertaken. However, in practice, the risk that the regulator abandons the regulatory framework is low.

Second, and related, any impact on the cost of capital is a function of the strength and credibility of the regulator's commitment to ensuring a return on investment. Where commitment is strong and credible, a change in the depreciation policy (e.g. frontloading or backloading, for a given set of asset lives) may be feasible without an expectation of a significant change in the cost of capital. It may also be argued that the risk is not necessarily systematic, and not relevant therefore in theory to the cost of capital. As discussed in Section 4, recent market transactions do not indicate investor concern about Ofgem's commitment to providing a long-term return on the RAV that is consistent with the opportunity cost of capital.

Third, even if a regulator is highly committed to remunerating investors in principle, it may be more challenging in a period of shrinking network utilisation. Such circumstances risk a network 'death spiral' from an iterative sequence of lower demand and higher 'per unit' charges. This reduces the feasibility of full cost recovery over time. Longer asset lives increase the risk of stranding (including via this 'death spiral'), which increases the cost of capital. However, this specific risk is lower for electricity networks: a more likely risk of lower utilisation for electricity networks is the reduction in net demand arising from distributed energy resources.

Fourth, even if different NPV-neutral cash flow profiles result in an identical cost of capital, some depreciation profiles may be more 'appropriate' than others from an intergenerational equity perspective. As noted above, Biggar quotes Baumol (1971): "*... there may be many alternative revenue streams, each of which can give investors their required returns... One set of inter-temporal patterns of product prices may yield a better allocation of resources … than another*".[74] The profile of cashflows may also have implications in the context of the type of financeability assessments that UK regulators, including Ofgem, typically undertake as part of their price review processes.

Fifth, clearly there are a raft of other regulatory parameters that impact 'appropriate cost recovery', including the RAV valuation approach, treatment of inflation, use of incentives, uncertainty mechanisms, etc. For example, there are regulatory levers to address any uncertainty regarding the future economic usefulness of some electricity distribution assets as suggested by National Grid. These include altering asset lives via a uniform policy, allowing companies to propose a capped reduction in asset lives (as per NZCC policy), altering the depreciation profile (e.g. front loading, as per the gas network), changing the capitalisation rate, etc.

As such, it is an over-simplification to condense 'appropriate cost recovery' to the cost of capital and asset lives. In particular, depreciation policy must be considered in the context of changing use and demands on the network.

[74] Darryl Biggar (2011): 'The Fifty Most Important Papers in the Economics of Regulation', ACCC/AER Working Paper Series, Working Paper No. 3

4. REVIEW OF OFGEM'S ED1 DECISION

In this section we assess Ofgem's current depreciation policy, focusing on the question of intertemporal cost allocation.

4.1. Strengths

The asset life and depreciation profile are likely to reflect the profile of utilisation and demand for network assets over time

First, regulatory asset lives are aligned more closely to their useful, economic lives. It is a reasonable principle to depreciate network assets over their expected economic life. Electricity distribution network assets are on average known to have a substantially longer useful life than 20 years. Therefore, Ofgem's move to 45-year asset lives helps to align the rate of depreciation (and, therefore, the long-term level of RAV and allocation of capital costs over time) to the period over which customers receive services from network assets. This supports intergenerational equity in the long term, by ensuring that current consumers do not pay too much relative to their fair share of the benefits derived from capital.

Second, the profile of depreciation reflects a reasonable and plausible intertemporal distribution of benefits across generations of consumers. A 45-year straightline profile, and the rate of return of capital it gives rise to, strikes a relatively pragmatic balance between the two competing positions.

On one hand, more backloaded depreciation might be supported in light of the more proactive, anticipatory investment that is expected from DNOs in forthcoming price controls. While anticipatory investment presents an argument for more backloaded depreciation – due to greater expected utilisation of network assets in future – it would further reinforce the reduction in the short-term depreciation rate caused by Ofgem's shift to 45-year asset lives. Given some uncertainty around when increases in demand and network utilisation will fully materialise and around technological uncertainty, this 'double effect' on short-term depreciation would magnify risks to company financeability, discussed further below. In addition, load-related capex is only responsible for a portion of the forecast growth in capex requirements, with non-load-related capex forecast to grow during ED3-ED5 by a similar proportion.

Alternatively, more frontloaded depreciation might be supported if there is uncertainty around utilisation and asset life on the network (e.g., from impacts of climate change on asset replacement).[75] In this respect, the arguments put forward by some DNOs for shorter electricity distribution network economic asset lives do not seem particularly well founded, particularly as a case can be made that the original (average) 45-year economic asset life was a relatively low-end assumption for electricity distribution assets to start with.[76]

Electricity network utilisation is more likely to increase than to decrease, so a front-loaded depreciation profile is unlikely to be appropriate on purely economic grounds. Straightline depreciation (including for investment considered 'anticipatory') aligns with regulatory precedent for electricity network regulation in the majority of European countries, as presented in Appendix B.

The current policy supports intergenerational equity by helping to levelise the per unit price of electricity over time

Perhaps most importantly, the change in depreciation policy, and the RAV that it gives rise to, can be considered to support intergenerationally fairer and equitable prices over time.

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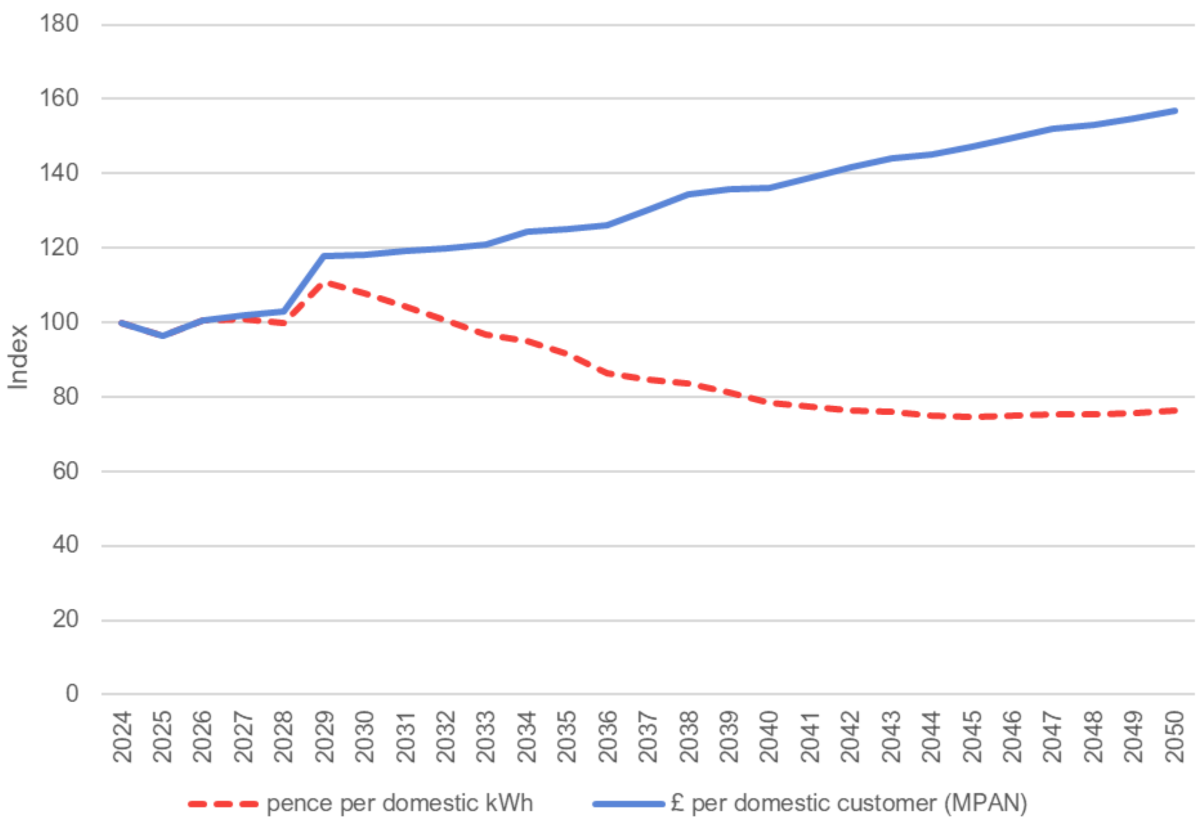
[75] As several DNOs have argued in their ED2 sector methodology consultation responses.

[76] See CEPA (2024): RIIO-ET3: Economic Lives of Electricity Transmission Network Assets, for a discussion of this issue in the context of the electricity transmission network.

As discussed in Section 3, the primary economic means to judge the equity and intergenerational fairness of Ofgem's current depreciation policy is to consider its implications for prices over time, in the context of current demands and the changing and uncertain demands on the electricity distribution network over time. In this respect, the 45-year asset lives depreciation policy – and the higher RAV level this will eventually give rise to – will help to levelise an expected declining real electricity distribution average unit price over time with growing demand, as illustrated in Figure 7 below. While the £ per domestic customer may increase under this policy, this can also be viewed as fair and equitable, as it is consistent with customers' increasing demands on the electricity distribution network over time, e.g. through greater uptake of electric vehicles.

Figure 7: *Index of ED per kWh and £ per customer unit prices for domestic customers, 2024 = 100*[77]



Source: CEPA analysis of Ofgem ED2 PCFM, and NESO FES domestic demand data

From this perspective, the transition to the 45-year asset lives policy can be viewed as intergenerationally fair and equitable for current and future consumers' over time. The 45-year asset lives policy – via the slower rate of depreciation and higher RAV that this eventually gives rise to - shifts the burden of electricity distribution costs to future consumers, when: a) demands on the distribution network are expected to be higher, and b) anticipatory investments that are expected of DNOs during the period of ED3-ED5 are expected to become better utilised.

Ofgem's depreciation policy for electricity distribution follows a similar set of principles to its decision to accelerate depreciation for gas distribution network assets. As noted in Section 3, in the gas distribution context, Ofgem has determined to accelerate depreciation for new network assets reflecting "*a balanced regulatory stance that aims to protect both current and future consumers".*[78] Ofgem's depreciation policy for gas distribution reduces the RAV,

[77] The £ per customer metric is estimated assuming a constant number of Meter Point Administration Numbers (MPANs). This is based on Elexon's quarterly summary of supplier MPAN counts, which reported a total of 33,345,331 MPANs in Q4 2025, available here.

[78] Ofgem (2025): RIIO-3 Draft Determinations - Finance Annex, p.128

and therefore economic stranding risks. It will deliver a set of charges for current and future consumers that are more stable over time, given the expected fall in demand on the gas distribution network.

In contrast, electricity demand is growing. On this basis there was – and remains – an objective case on economic and societal equity terms, for Ofgem's decision in ED1 to transition to a slower rate of depreciation. In contrast with gas distribution, ultimately this will result in a higher future RAV for electricity distribution.

Ofgem's current depreciation policy delivers wider benefits

Accelerated depreciation is not a financially resilient policy. Even if accelerated depreciation may appear to be financially sustainable (e.g. in the same way that debt can be re-financed), there is no absolute guarantee that the network will continue in perpetuity and that revenues can continue being brought forward. Ofgem's decision to increase asset lives to 45 years removes this potential source of financial instability and therefore improves financial resilience for companies and the sector over the long term.

A similar line of logic was also set out by a paper from the RPI-X@20 Finance Working Group, which stated the following:

> *"Is it an issue that the RAV may be substantially lower than accounting book value and replacement value? The impact of the former may result in an obligation to write down asset book values with a consequent detrimental impact on the network. The impact of the latter is that the capital that is funding the business is substantially less than the actual value of the assets. It could be argued that the difference between RAV and replacement value led to the demise of Railtrack – the low RAV meant that there was insufficient equity buffer to keep the business going when Railtrack's assets suffered substantial operational issues.".*[79]

4.2. Risks

The transition to a longer asset life means that some of the desired outcomes may not be achieved in the short term

Financeability

Ofgem has a duty to have regard to company financeability and targets company credit ratings that will support investment. As discussed in Section 2, the temporary reduction in depreciation during the transition to the new asset life gives rise to lower revenues and puts downward pressure on FFO based credit metrics (e.g. FFO/ND). Technically, in the context of assets having a useful life of 45 years, this is a transitional challenge, as depreciation charges will eventually increase to their steady state level. However, in practice, the transitional impacts will be felt over multiple price controls (and therefore decades) and may be a particular concern in light of the scale and strategic importance of DNO investment programmes in the next decade or more.

Such financial pressures could be viewed as problematic from a credit rating perspective at the current level of notional gearing in the electricity distribution sector (60%). It could require DNO owners to de-gear (via equity injections, effectively increasing the equity proportion of a growing level of capital employed).[80]

On one hand, theoretically, it could be argued that companies are able to manage changes to cashflows if the WACC is set correctly, e.g. through choices of capital structure. It may be possible for network companies to adjust their capital structures (including raising additional funding) in order to manage the cashflow implications of Ofgem's chosen depreciation policy.

On the other hand, Ofgem's current policy might be perceived to expose investors to increasing regulatory risks related to time inconsistency. Capital employed in the form of a larger RAV will be higher under the 45-year asset

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[79] Ofgem (2009): Paper from the RPI-X20 Finance Working Group, p. 8

[80] We discuss this option further in Section 5.

lives policy. To secure investment today, the regulator is incentivised to ensure that allowed returns are sufficient to cover the DNOs' true cost of capital. However, once sunk investments have been made and the capital is employed in the DNO business, a future regulator might be perceived to have fewer incentives to maintain allowed returns at the opportunity cost of capital.

In combination, the risk to investors is that: (1) there is an expectation that financing pressures during the forthcoming peak investment periods are expected to solely be managed via changes to capital structures, potentially reducing dividend yield, (2) they are unable to earn their cost of capital in the long-term – if they think Ofgem in the future could cut the allowed rate of return below their cost of capital[81]; and/or (3) their ability to exit the business (potentially because of point (1) and (2) or otherwise) is constrained, which would expose them to regulatory and financial risk. NERA's analysis raises this second point, by highlighting the risk of "*political acceptability*" of higher customer charges in the future (from 2050) which are driven by an increase in the allowed return for companies.[82]

There might be several factors to consider in assessing these risks to investors under Ofgem's current depreciation policy:

First, this concern does not appear consistent with market evidence, based on recent DNO acquisitions undertaken in the context of Ofgem's current depreciation policy. In 2026, Engie purchased the largest GB DNO (UKPN), at a 50% premium to the RAV (equivalent to *"a multiple of c.1.5x the estimated Regulated Asset Value (RAV) as of end-March 2026"),* according to Engie's press release.[83] While still feasible, it seems unlikely that Engie would have assumed a change to the depreciation rate, given no commitment from Ofgem to date that the depreciation policy will be changed in future. It may be reasonable, therefore, to assume that Engie bought the UKPN business with the expectation and confidence of realising a sufficient return on the purchase price over the expected holding period of their investment and Ofgem's current depreciation policy.[84] The CEOs of Engie and UKPN have both spoken positively about Ofgem's regulatory approach during 2026.[85] UKPN is not the only DNO to have been purchased at a premium: Iberdrola purchased ENWL at a 44% premium to the March 2025 RAV.[86]

Second, the concerns around regulatory stability and the predictability of Ofgem's regulatory policy do not appear fully substantiated, albeit they may be understandable investor concerns in principle.

The importance of regulatory commitment was clearly signposted and discussed in the papers around the time of the RPI-X@20 review. While ex-post expropriation is a risk – one that exists where you cannot tie the hands of future Ofgem decision makers and with network price controls set on 5-year cycles – Ofgem has a standard and stable approach to setting allowed rates of return, and moreover, the CMA provides a guardrail against such behaviour (i.e., to protect investor interests).

Ofgem also increasingly has a need to attract investment into other sectors – CCS networks, hydrogen networks, nuclear RAB etc. Opportunistic (short-term driven) actions to reduce allowed returns on the electricity RAV risk contagion to the cost of capital in other sectors. This effectively places a constraint on Ofgem setting price controls for DNOs that deliver a rate of return below the cost of capital.

Third, as noted above in relation to FCM, notes of the RPI-X@20 working group (2009) – with DNOs as members and Ofgem as chair – are clear that Ofgem's previous 20-year asset life policy was put in place to "*accelerate cost recovery and bring cash forward from the future*".[87] Ofgem implemented the shift to 45 years with considerable

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[81] Particularly once the peak in investment requirements to facilitate network expansion is completed.

[82] NERA (2025): Depreciation Policy for RIIO: A report for the ENA, p.28

[83] Engie (2026): Acquisition of UK Power Networks

[84] With price controls that appropriately reflect the opportunity cost of capital once employed in the DNO.

[85] Utility Week (2026): Engie CEO: I wish more regulators were like Ofgem - Utility Week

[86] Iberdrola (2024): Acquisition of Electricity North West Limited

[87] Ofgem (2009): Paper from the RPI-X20 Finance Working Group

signalling (from 2011) and an 8-year transition path for new assets (from 2015-2023). Therefore, DNOs were aware that they were in receipt of 'brought forward' revenues, and were given notice that Ofgem intended to unwind this policy gradually.

Overall, we are not aware of evidence to suggest that Ofgem is underestimating the economic return required for investing in electricity distribution networks or that there is an observable investor concern about Ofgem's commitment to providing a long-term return on the RAV that is consistent with the cost of capital. Nonetheless, in practice, the reduction in cashflow will generate additional financing pressures during a period of elevated investment requirements.

The need to attract more investment to finance rising capex requirements

With a rising capex programme required to support future electrification, Ofgem's current depreciation policy does carry some risks for consumers and companies.

First, for consumers, Ofgem's policy increases the impact on electricity customer bills from any future change in interest rates. This increased sensitivity arises because the long-term RAV is higher under a 45-year asset life (relative to Ofgem's previous depreciation policy), so a given change in interest rates will have a larger £m impact on the allowed return compared to a policy that (all else equal) would deliver a lower RAV.

Second, for DNOs, rising capital investment requirements place a strain on financial ratios and risk an increase in the cost of capital. In its April 2025 outlook for European regulated electricity and gas networks, Moody's downgraded its outlook for network companies from stable to negative, stating: "*We expect increasingly costly investment programmes for the energy transition to weaken the credit metrics of the energy networks*.".[88]

Intergenerational equity

Under the previous policy of accelerated depreciation, even though depreciation is technically being 'brought-forward' from the future, the actual level of depreciation paid by consumers remains broadly stable. In part, this is due to accelerated depreciation offsetting the discount on pre-privatisation assets. In contrast, the transition to longer asset lives causes variation in revenue between generations of customers, for the reasons that NERA sets out. It might appear unfair that – in comparison to the previous policy of accelerated depreciation – Ofgem's policy results in a temporary reduction in depreciation, which tilts costs away from current consumers and towards future consumers.

However, as we have discussed above, ultimately the depreciation policy has to be judged based on its longer-term implications for the level and trajectory of prices over time in the context of the changing demands and use of the electricity distribution system. As noted above, the transition to the 45-year asset lives policy can be viewed as intergenerationally fair and equitable for current and future consumers' over time, as it shifts the burden of electricity distribution costs to future consumers, when (a) demands are expected to be higher, and (b) anticipatory investments are expected to become better utilised.

4.3. Wider considerations

The challenge of a rising capex programme

Even if FCM holds under Ofgem's current depreciation policy, the need to increase capex in the short/medium term places additional pressure on financeability at a time when there is deterioration in financial ratios. If this creates a risk to the delivery of DNOs' strategically important investment programmes, there is merit in adopting a relatively cautious stance when considering the ability of companies to finance these future programmes.

[88] Moody's (2025): 'Regulated Electric & Gas Networks – Europe'

Regulatory stability

If Ofgem were to reverse or soften its ED1 policy by adopting a more accelerated rate of depreciation (and consequentially a lower RAV level), there is a risk that this could be seen to undermine prior regulatory commitments, and run against a stable and predictable regulatory regime, given that it would be Ofgem's second change in depreciation policy in three price review cycles.

Weaknesses of accelerated depreciation

First, historic arguments for accelerated depreciation are less applicable today. A rationale for why Ofgem implemented accelerated depreciation previously is to support company finances, by helping to offset the MEAV discount. However, as pre-vesting assets are replaced by (non-discounted) new assets, this rationale for accelerated depreciation arguably falls away over time. So, that rationale would not justify continuing with a policy of accelerated depreciation indefinitely.

Second, accelerated depreciation generates risks. Under Ofgem's previous policy (accelerated depreciation), current consumers were overpaying for their share of *current* assets, creating a mismatch between asset utilisation and depreciation payments. Nonetheless, it did keep customer bills fairly constant, as summarised in an excerpt from a paper from Ofgem's RPI-X20 Finance Working Group (2009):

> *"Current customers are paying for assets which future generations may get for free (however the same could be said for current generations who are using assets now 40 years old funded entirely by previous generations)".*[89]

This poses a pragmatic question: if the depreciation charge broadly remains stable over time, does it matter if (technically speaking) customer depreciation charges are perpetually being 'brought forward'? This question rests on the sustainability of the electricity network.

4.4. Overall assessment

It may be tempting to allow accelerated depreciation of the RAV to continue, to support stability and avoid risks to company financeability. However, an objective case can – and previously was – made on economic and societal equity terms, for Ofgem's decision to transition to a 45-year asset live policy, and the higher RAV that will ultimately give rise to. The ENA has highlighted risks around the 'political acceptability' of higher future allowed returns for companies, although it is debatable whether this argument presents a material risk.

Overall, rather than an issue of intergenerational inequity, the ENA has highlighted that the current depreciation policy may raise a financing challenge. The current policy puts pressures on the DNOs' cashflows and, in particular, FFO based credit metrics, during a peak period of investment by DNOs over the ED3-ED5 period. The increased capital expenditure (inflow to RAV) during ED3-ED5 coincides with the transition to a slower rate of depreciation (outflow from RAV). More evidence is required to confirm if Ofgem's depreciation policy has an unmanageable impact on DNOs' long-term financeability.

This potential financial challenge during the transition period raises several questions. For example, for companies and consumers, is the financeability issue and unevenness in charges sufficiently material to warrant further action? If these transitional issues are sufficiently material and remedial actions are justified, it is relevant to consider a wider set of options beyond the current policy. Section 5 sets out options for consideration.

[89] Ofgem (2009): Paper from the RPI-X20 Finance Working Group

5. OPTIONS

In this section we consider some possible options that Ofgem could consider for managing the impacts of the transition to the 45-year asset lives policy on DNO cashflows, RAV and finances. These include:

- Expecting the RAV in forthcoming price control periods to be financed at a lower level of gearing than has historically been assumed in Ofgem's recent electricity distribution price reviews (Option A).
- Reducing impacts on DNOs' cashflows during the peak ED3-ED5 investment period through temporary adjustments (reductions) to capitalisation rates (Option B).
- Implementing changes to depreciation policy to accelerate the rate of depreciation and to reduce the build-up of RAV projected for the electricity sector under the current distribution policy (Option C).

We also assess an option of Ofgem applying a reduction in capitalisation rates – temporary or permanent – supported by third-party financing (Option D) whereby a proportion of DNOs investment plans are funded as 'fast money' but paid for by consumers as 'slow money' (via a third-party financing solution[90]). This reduces the DNOs financing requirement, at least temporarily, while such a third-party financing scheme is in place.

This fourth option builds on a proposal that has been made by some industry stakeholders to securitise a proportion of electricity transmission and distribution revenues that are brought forward by Ofgem making temporary or permanent reductions in capitalisation rates. This would support network companies' financing during the expected step-up in investment levels in electricity networks to support energy decarbonisation.

It is important to note that these options are not exhaustive, nor are they mutually exclusive. For example, hybrid options could involve a combination of lower gearing and an amended depreciation profile. We consider them as independent options to aid with clarity of the assessment.

5.1. Option A: Retain the current depreciation policy with adjustments to gearing

Option A is for Ofgem to retain its policy of depreciating on a 45-year asset life straightline basis. Previous sections have discussed the implications that this has for DNO cashflows and RAV over forthcoming price controls. In particular, the transition to a higher RAV level puts pressures on the DNOs' cashflows and, in particular, FFO based credit metrics, during a critical peak period of investment by DNOs over ED3-ED5.

One possible rationale to Ofgem retaining its current depreciation policy would be if the financeability impacts of the policy (including impacts on credit metrics) are not sufficiently material to warrant concern. FFO/Net Debt is an important ratio for several rating agencies – e.g., Moody's and S&P. While the agencies have thresholds for FFO/Net Debt and other ratios, there is not a definitive level each ratio must be for Ofgem's price controls to be considered consistent with the objective that the efficient licensee can maintain a comfortable investment grade rating.[91] Given the forecast trajectory of several key credit metrics, in particular FFO/Net Debt, a no-change policy may need to be premised on a specific judgement. That is, provided Ofgem has measured the cost of capital (at notional gearing) appropriately, its financeability duty is met despite the decline in one or several ratios for several price review cycles.

Alternatively, even if Ofgem considers that credit metric forecasts give some cause for concern around financeability, Ofgem might deem this an issue for companies to address, without further regulatory intervention. Specifically, Ofgem might investigate the assumption that the notional company, and the DNOs in practice, can and would reduce the pressure on FFO based credit ratios and, therefore, pressures on company credit ratings, by reducing gearing. In RIIO-ED2, Ofgem has assumed a notional gearing level of 60%.

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[90] For example, via a privately financed securitisation.

[91] Ofgem (2025): ED3 Sector Specific Methodology Consultation – Finance Annex, para 5.8, p. 35

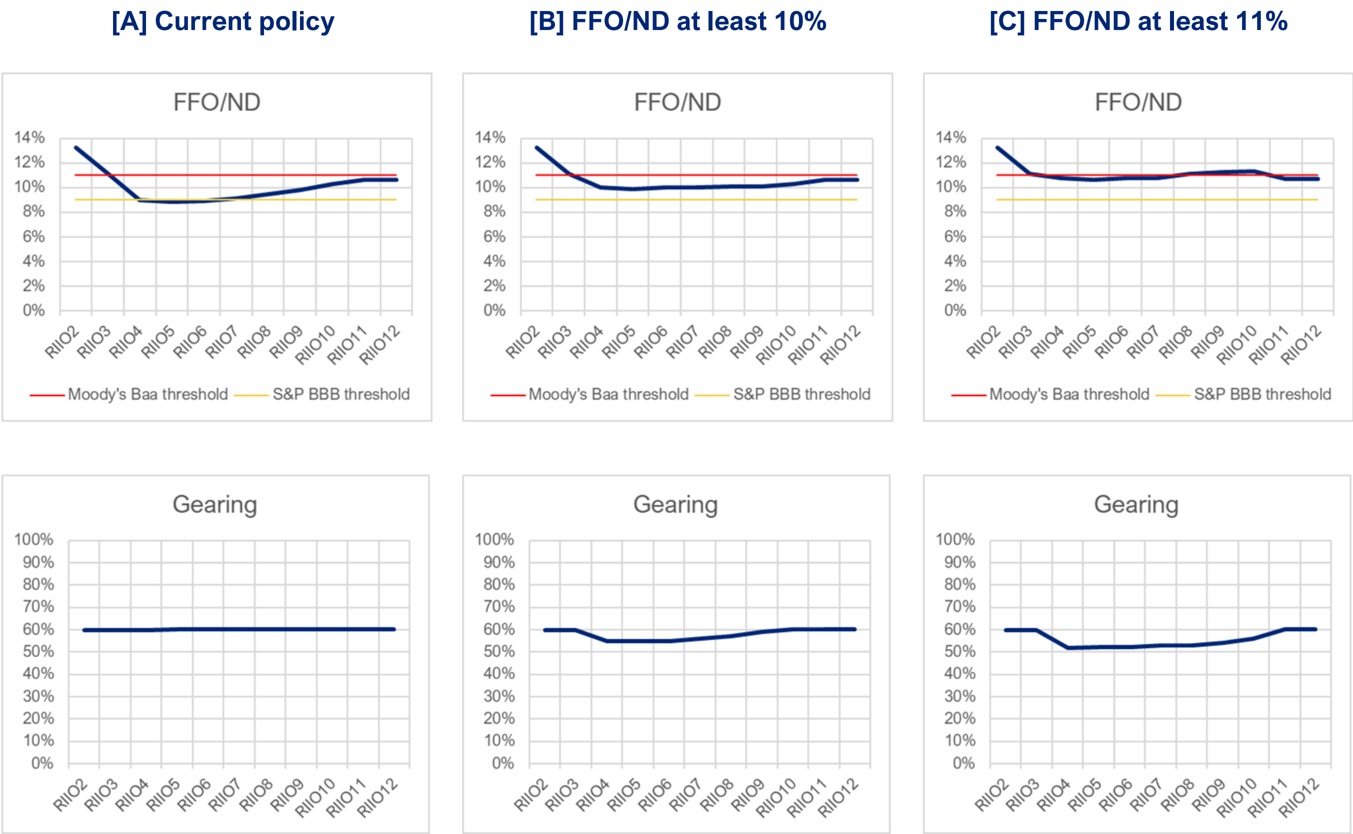
This is above the level that Ofgem has assumed in its most recent RIIO-T3 determination for the electricity transmission companies (55%).[92] This indicates that it might not be unreasonable to assume that DNOs could operate at this level, or possibly lower, during a period of high investment and expansion of the electricity distribution system.

Modelling by Ofgem's regulatory finance team suggest the following:[93]

- Under the current depreciation policy, all other things being equal, average FFO/Net Debt across DNOs will fall during the next 2-3 price controls, remaining close to 9% up to 2050, before rising subsequently. Average FFO/Net Debt is estimated to remain below 10% from the 2030s (ED4) until the 2060s.
- To maintain an FFO/Net Debt ratio above 10% under the current depreciation policy, notional gearing for the average DNO is estimated to need to fall (from 60%) to c. 55% from ED4 until at least the 2050s, followed by a gradual transition back to 60% by the 2060s.
- To maintain an FFO/Net Debt ratio above 11% under the current depreciation policy, notional gearing for the average DNO is estimated to need to fall (from 60%) to 52-53% from ED4 until at least the 2050s, followed by a gradual upwards transition.

This is illustrated in Figure 8 below.

Figure 8: FFO/Net Debt and notional gearing profiles (average DNO)



Source: CEPA analysis of Ofgem PCFM projections

Changes to financial metrics – while not the only consideration for financeability – can have real impacts and therefore merit full consideration. For example, in November 2025 Fitch downgraded its rating for Fingrid – Finland's transmission system operator – from A+ to A, making reference to a fall in FFO relative to net debt ("*Fitch*

[92] Ofgem (2025): RIIO-3 Final Determinations – Finance Annex

[93] Based on a range of input assumptions of capex, the allowed cost of capital and inflation.

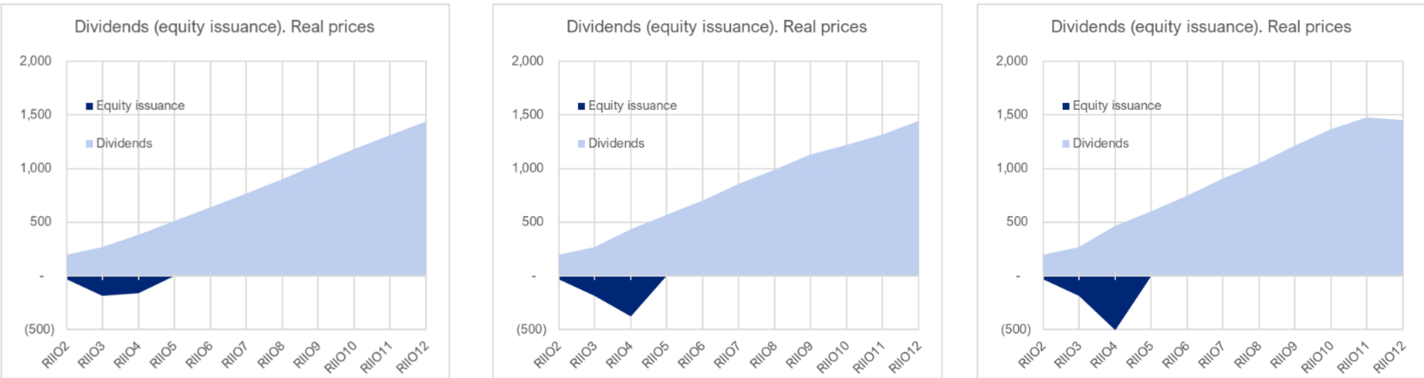
expects Fingrid's FFO net leverage … to be consistently above the previous rating sensitivities… in 2025-2029”).[94] Similarly, S&P downgraded Redeia – Spain’s electricity transmission operator – noting a forecast fall in FFO to net debt.[95]

To achieve a 10% FFO/Net Debt on average is estimated to require additional equity injections (over and above Ofgem’s existing modelling assumptions) of approximately £214m (on average per DNO, 2020/21 real prices) over the course of ED4. If the target is increased to 11% FFO/Net Debt on average, this increases to £340m on average per DNO over the course of ED4.[96]

These notional equity injections may also have implications for the implied dividend yields of the DNOs over the period of ED3-ED6. Figure 9 below shows the equity issuance and dividends in Ofgem’s modelling for the three scenarios illustrated in Figure 8 above.

Figure 9: Modelled equity issuance and implied dividend yields

[A] Current policy **[B] FFO/ND at least 10%** **[C] FFO/ND at least 11%**



Source: CEPA analysis of Ofgem PCFM projections

In addition to ‘average’ modelling (for an average notional DNO), Ofgem’s modelling provides DNO-specific estimates. While the modelling keeps FFO/Net Debt at least 10% or 11% for the average DNO via reductions to notional gearing (see Figure 8), there is variation by company. For example:

- SSEH’s FFO/Net Debt would fall to (an average of) 9.49% during ED4 (2034-2038).
- WMID’s FFO/Net Debt is (an average of) 10.36% during ED4.

This demonstrates that notional gearing adjustments which maintain the FFO/Net Debt ratio above a certain threshold (e.g. 10%) for the average DNO may not be sufficient to maintain this ratio for every DNO.

As such, lower gearing assumptions may be needed to reduce financeability risks for all DNOs. For example, if the desirable ratio for FFO/Net Debt is seen to be in the region of 11%, gearing could need to fall close to 50% to achieve this ratio for all DNOs in all years.

This could be viewed as a more ‘market-led’ (financing) solution to the financing pressures the current depreciation policy gives rise to – as was signalled at the time the RIIO model was originally introduced. Ofgem sets the WACC and assesses financeability at a level of notional gearing it considers is consistent with a comfortable investment grade rating and associated credit ratio levels, including FFO/Net Debt. As discussed in CEPA (2021):

> *“In a period of investment and expansion, gearing below the benchmark level might be needed to maintain the benchmark credit rating. In less capital-intensive periods, revenues may support the*

[94] Fitch (2025): ‘Fitch Downgrades Fingrid Oyj to 'A'; Stable Outlook’

[95] S&P Global Ratings (2026): Spain-Based Power Grid Company Redeia Rating Lowe

[96] This is based on an estimated total sector level equity issuance of £7,043m.

> *benchmark credit rating under a more highly geared structure. Changes to capital structure of this nature can be considered consistent with a competitive market".*[97]

There may be several challenges to this approach:

- Based on the analysis above, the required reduction in gearing may be to 50-55% and, therefore, requires a level of notional gearing at the lower end of recent UK regulatory precedent.
- There will be a cost to consumers that would need to be reflected in Ofgem's future allowed revenues for the DNOs in assuming further injection of equity.
- The 'solution' is premised on equity investors being willing to make additional equity injections into the DNOs during ED4 – that is, the regulatory package is viewed as 'investable' for them.
- Figure 9 would suggest that despite the 3% dividend yield on notional equity, the implied *net* dividend yield for some price controls (e.g., ED4) could be low or even negative.

Importantly, this is not a single price control period issue. A financing solution to the weakness in FFO/Net Debt would need to be premised on equity injections to maintain a lower gearing level over multiple price control cycles. Ofgem's modelling indicates that equity injections during ED4 would be sufficient to meet certain FFO/Net Debt thresholds, but while the injections themselves may be 'one off' (during ED4), it takes several decades before gearing can return to the previous 60% level if FFO/Net Debt is expected to exceed 10% or 11% over time.

We have observed in other jurisdictions that network companies and their investors can suggest that a lower level of gearing, and associated lower return on equity, would not be consistent with expectations of existing and potential shareholders. In those circumstances, shareholders may be of the view that it is not reasonable and 'investable' for them to finance at materially lower levels of gearing.[98] However, there are several reasons to consider that companies may be able to manage financeability pressures to some extent via changes to gearing:

- A range of capital structures for regulated energy networks in the UK can and have been observed over time since privatisation.
- Broader market evidence of gearing levels of European energy network businesses – albeit for listed companies – indicates investors can accept gearing levels below 50% (see Figure 10).

A case can potentially be made that the expectation DNOs would take a more 'market led' solution to financing pressures under RIIO, such as via equity injections, was signalled by Ofgem at the time of the introduction of the regime.[99] It is also not unprecedented for regulators internationally to adopt notional gearing levels in their WACC assessments below 50% (e.g., ACM).[100] However, those decisions have been taken in different regulatory contexts that may not have considered debt and equity financeability implications of the level of gearing at which the WACC is measured for revenue determination.

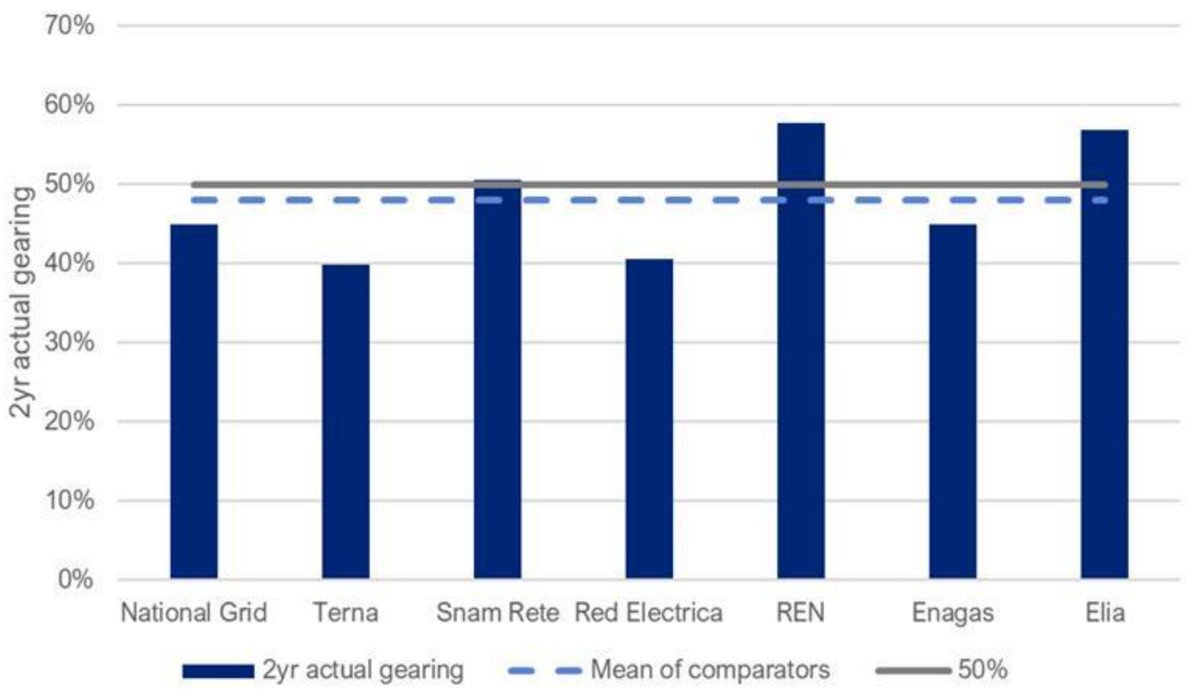
[97] CEPA (2021): Financeability of ISP Projects – Australian Energy Market Commission, p. 8

[98] Ibid.

[99] Ofgem (2010), RIIO Handbook

[100] Brattle (2025): '[Beta, ERP and Gearing for the Dutch Network Operators]'

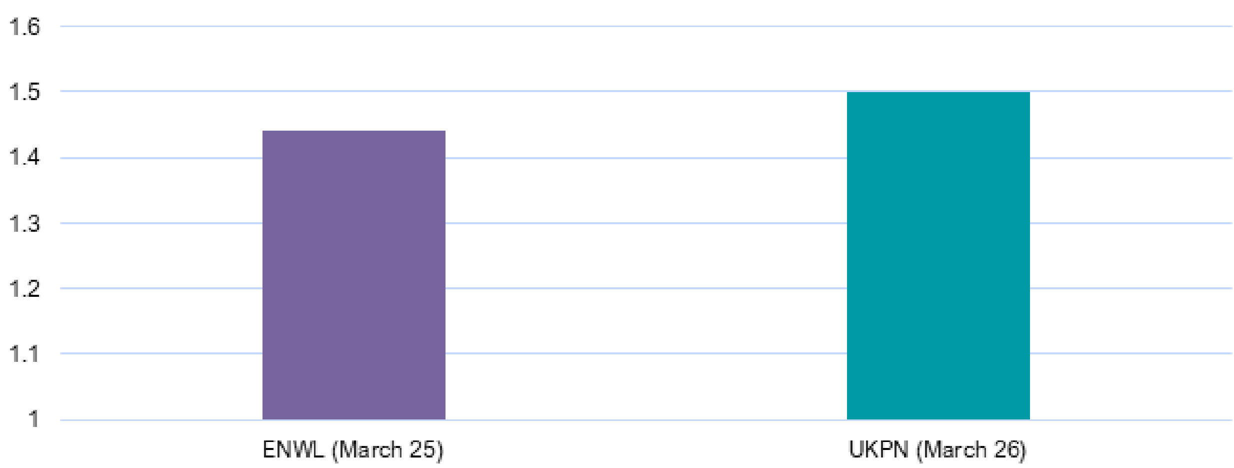
Figure 10: 2-year actual gearing ratios for a sample of 'pure play' European energy network companies[101]



Source: CEPA analysis of Bloomberg data

As discussed above in Section 4, recent DNO transactions - and the multiples of those transaction values relative to RAV (see Figure 11 below) – might also suggest there are equity investors who are willing to finance the investment programme required in the electricity distribution sector under Ofgem's current depreciation policy and the profile of cashflows that this gives rise too. National Grid's 2024 equity issuance – highlighted by Moody's in its April 2025 outlook for European regulated electricity and gas networks – also provides some recent evidence of investor appetite for investment in UK electricity networks.

Figure 11: Market-to-Asset Ratios (MAR) for recent DNO transactions



Source: CEPA analysis of company press releases[102]

[101] Net Debt to Net Debt + current market cap.

[102] See Engie (2026): Acquisition of UK Power Networks and Iberdrola (2024): Acquisition of Electricity North West

An approach that seeks to be supportive of DNO investment, might however require that core ratios such as FFO/Net Debt are above broad rating agency thresholds. It would require the proposed reduction in gearing levels to be defendable relative to market evidence (including relevant international benchmarks) and would require the associated equity issuance costs to be reflected in the DNOs' allowed revenues.

The regulatory package also has to be viewed as investable from the perspective of sufficient long term regulatory commitment to future allowed returns at the opportunity cost of capital to underpin this shift in capital structure. In this respect, recent DNO acquisitions might again indicate that there is not a fundamental concern by investors of expected allowed returns in the electricity distribution sector, nor Ofgem's long term regulatory commitment to providing a return on the RAV that is consistent with the opportunity cost of capital over time.

FFO based metrics are one of several factors and financial ratios that rating agencies consider. For example, the FFO/Net Debt ratio is given 12.5% weight in Moody's scorecard assessment framework. Under Ofgem's proposed move to a semi-nominal returns framework, another key ratio (AICR) will likely strengthen relative to RIIO-ED2. If an overall scorecard approach is adopted – and only one financial metric (out of many) is in decline – then the impact on the credit profile of the notional entity could be diluted and therefore softened.

5.2. Option B: Adjust (reduce) capitalisation rates

An alternative option – or potentially complementary approach to Option A – would be to reduce the capitalisation rate in DNO price controls for several price review cycles – with the effect of increasing the rate of 'fast money' over 'slow money'. This is an approach that Ofgem has adopted to advance revenues in its recent RIIO-T3 decision.

Reducing capitalisation has the impact of reducing the level of the RAV – albeit a temporary change in capitalisation rates will only have a temporary impact on the RAV. Relative to the current depreciation rate, customers would pay more in the short term under a lower capitalisation rate. From a consumer perspective, this provides a similar set of outcomes compared to a scenario with accelerated depreciation.

Temporarily reducing capitalisation rates will reduce DNOs' financing requirement and will improve cash ratios over the period that capitalisation rates are reduced. They are therefore – in principle at least – a relatively flexible option for providing revenue advancement within Ofgem's existing regulatory framework.

Ofgem's RIIO-T3 decision highlighted several positive characteristics of using a capitalisation rate adjustment as a revenue advancement approach to support financeability:

- Reducing the capitalisation rates reduces the required capital by increasing the proportion of investment that is directly funded by consumers in period.
- Adjusting capitalisation rates is one of the few levers that can significantly improve the FFO/Net Debt and RCF/Net Debt metrics without undermining other aspects of the financial package.
- It is likely to put upwards pressures on consumer bills in the short term by accelerating revenue, but this is offset for an interim period of lower bills due to a reduced RAV.
- If used as an alternative to equity injections to reduce gearing (see discussion of Option A above) it results in a corresponding lower equity issuance cost allowance.[103]

In the context of T3, Ofgem also commented that adjustments to capitalisation rates can be used as a regulatory tool to secure timely delivery of critical network investment. Capitalisation rates provide a simple approach to revenue advancement that strengthens broader regulatory mitigations in place to help manage the credit impacts of the large capital programmes regulated electricity networks are expected to deliver in coming price controls.

[103] In the context of RIIO-T3, Ofgem stated in its Draft Determinations that its proposed reduction to the capitalisation rate for bucket 2 Totex, resulted in a corresponding lower equity issuance cost allowance of approximately £200m (real, 23/24 prices), representing an absolute bill saving. See Ofgem (2025): RIIO-3 Draft Determinations - Finance Annex, para, 5.39, p. 87-88

On the other hand, the use of capitalisation rates to manage FFO metrics has some downsides:

- It mirrors the impact of accelerated depreciation and therefore dilutes Ofgem's policy decision to move to a 45-year life for new assets.
- If lower capitalisation rates are introduced, future policy to reverse this change would itself generate a transition period with lower cashflows for DNOs. (Albeit, capitalisation rates are more straightforward to adjust than more 'structural' depreciation policy parameters such as asset lives.)
- DNO capitalisation rates vary (for ex ante allowances), making amendments to capitalisation rates a less transparent tool for managing financeability.[104]

NERA – for the ENA – has considered reducing capitalisation rates as an option for the electricity distribution sector.[105] They conclude a temporary adjustment to the regulatory capitalisation rate (relative to the 'natural rate') would not represent a long-term solution to the problems they consider exist with the 45-year asset lives policy.

NERA considered two scenarios:

- adjusting capitalisation rates to close the depreciation gap in ED3 and ED4, which they say is analogous to Ofgem's T3 Draft Determination modelling which adjusts capitalisation rates in T3 &T4; and
- adjusting capitalisation rates in ED3 up to 2068 to close the whole depreciation 'gap' that NERA has stated exists under the current depreciation policy.

They conclude:

> *"A temporary adjustment to the cap rate reprofiles depreciation under the current RIIO-ED1 rules into the period where the cap rate adjustment is applied at the expense of subsequent periods, but does not increase depreciation overall. As a result, the depreciation gap is closed over the period when the cap rate adjustment is applied, but once we return to natural cap rates, a new depreciation gap re-opens, leading to similar intergenerational equity, investability and financeability issues that exist under the existing RIIO-ED1 depreciation policy in the long-run.".*[106]

RAV growth is moderated during ED3 and ED4, if capitalisation rates are adjusted from the natural rate for two or more price control periods. But this reverses from the point at which capitalisation rates return to the natural rate. This places pressure on FFO based credit metrics in future periods. This is illustrated below in a table (Figure 12) produced by NERA within its supplementary report on a capitalisation rate adjustment to the ENA. Applying a capitalisation rate adjustment of 10% in ED3 and 16% in ED4 (on average) for the notional DNO, NERA's analysis shows that cash ratios improve during ED3 and ED4 due to the additional fast money but ratios then deteriorate as revenues return to natural rates from ED5 onwards.

As well as debt financeability issues, NERA also concludes that temporary adjustments to capitalisation rates continue to create "*risk around political acceptability of charges in the long-run, undermining investability due to potential stranding risk*" under the 45-year depreciation policy. A policy of temporary adjustments to capitalisation rates, does not, in NERA's view, address this risk with the current 45-year depreciation policy.

[104] Ofgem (2022): RIIO-ED2 Final Determinations Finance Annex (p.107-108)

[105] NERA (2025): 'Depreciation Policy Solutions for RIIO-ED3 – capitalisation rate adjustment solution: a report for the ENA'

[106] Ibid., p.3

Figure 12: Impact of temporarily reducing capitalisation rates on DNO FFO/Net Debt

	ED3 (2029-33)	ED4 (2034-38)	ED5 (2039-43)	ED6 (2044-48)	ED7 (2049-53)	ED8 (2054-58)	ED9 (2059-63)	ED10 (2064-68)	ED11 (2069-73)
FFO/ND (S&P)	13.6%	12.5%	8.4%	8.4%	8.6%	8.9%	9.3%	9.7%	10.0%
ND/EBITDA (S&P)	5.3	5.3	6.7	6.7	6.6	6.4	6.3	6.1	6.0
S&P rating based on FFO/ND	**A+/A**	**BBB+**	**BBB**	**BBB**	**BBB**	**BBB**	**BBB+**	**BBB+**	**BBB+**
Capex / RAV	11.9%	10.6%	8.0%	6.1%	5.4%	5.2%	5.0%	4.9%	4.9%
AICR	1.75	1.64	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Gearing	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%
FFO/ND	14.1%	13.0%	8.9%	8.9%	9.11%	9.4%	9.8%	10.2%	10.5%
RCF/ND	12.1%	11.0%	6.9%	6.9%	7.1%	7.4%	7.8%	8.2%	8.5%
Moody's scorecard rating	**A3**	**A3**	**Baa1**	**Baa1**	**A3**	**A3**	**A3**	**A3**	**A3**

Below BBB+/Baa sub-rating | <100bps headroom

Source: NERA analysis

While we agree with the impacts that NERA identify from a policy of *temporary* adjustment to the capitalisation rates, as discussed previously it is debatable whether the 'political acceptability' argument is indeed a material risk, in the context of Ofgem's regulatory framework and market evidence.

First, there does not appear to be a risk of economic stranding of the RAV in electricity distribution given the expected growth in future demand. While a larger RAV – and the higher allowed returns on the RAV this gives rise to in future – might be perceived to increase time inconsistency risks for investors as regards the allowed return *on* capital, as discussed previously, recent acquisitions of DNOs would indicate this is not a fundamental concern for investors.

Second, arguments in principle might also be made for why the risk that is identified by NERA is either not applicable to the cost of capital (potentially being a diversifiable risk) or is already accounted for in the cost of equity and market valuations, as the implications of current depreciation policy are already known to investors.

The implications and/or the materiality of the 'political risk' that NERA has stated apply under the current depreciation policy - and where capitalisation rates are reduced for a period to support DNO investment – do not appear fully clear or sufficiently substantiated.

We agree with NERA that eventually, the 45-year asset lives policy – once a temporary period of reduced capitalisation rates is reversed – will eventually result in the same steady level RAV that is forecast to occur under the current 45-year depreciation policy. As a result, unless the temporary reduction in capitalisation is retained in perpetuity – which would in effect be a form of accelerated depreciation – this option may only be viewed as temporary solution to the financing challenges identified under the 45-year asset lives policy.

Overall, temporary adjustments to capitalisation rates may provide a flexible and pragmatic tool for helping to support DNO cashflows temporarily during forthcoming price control periods. But as a regulatory tool it seems to have limitations in the long term. We also note Moody's commentary on the RIIO-T3 decision that "*these 'speed of money' adjustments affect the timing of when cash flow is received but, as they are NPV-neutral, they do not improve our view of underlying credit quality.*".[107]

5.3. Option C: Alternative depreciation options

Alternative depreciation options could in principle, frontload or backload the profile of depreciation charges. NERA – in their report for the ENA[108] – proposes several options for changing the depreciation policy at ED3. All these options reflect a return to more accelerated depreciation than the current policy and a lower level of RAV than will be achieved under Ofgem's current policy.

Table 1 below provides an assessment of some high level pros, cons and considerations with each of these options, both from a principles and more practical impact perspective.

[107] Moody's (March 2026): 'Moody's Ratings affirms ratings for National Grid plc and UK subsidiaries; stable outlook'

[108] NERA (2025): Depreciation Policy Solutions for RIIO-ED3, A report for the ENA

Table 1: Assessment of NERA options for ED3 depreciation policy changes

Option	Pros	Cons
35-year asset life	Eases financing pressures on the DNOs by introducing an accelerated depreciation profile If 35 years were a justifiable average economic asset life for distribution, then it would not change the objective of Ofgem's depreciation policy in principle[109]	Accelerates depreciation when there are several reasons to consider this may not lead to a fair and equitable price profile as discussed in prior sections It has not been established that 35 years is a reasonable assumption of the average economic life of distribution assets Introducing a new policy at ED3 creates the risk of regulatory instability by shifting the policy and creating a new transition
Sum of Digits (SODs) & 45-year asset life	Enshrines the 45-year asset life assumption Eases financing pressures on the DNOs by introducing a more front-loaded depreciation profile than straightline depreciation, and ultimately a lower RAV level Applied by Ofgem in the gas distribution sector so there is precedent of using a SODs depreciation profile in a Great Britain energy network context	May appear counter intuitive for Ofgem to introduce a more front end loaded depreciation profile than straightline given the expansion of investment and demand on the electricity distribution network (compared to gas) As an accelerated depreciation policy, there are several reasons to consider this may not result in a fair and equitable price profile, as discussed in prior sections As with other options, introducing a new depreciation policy at ED3 creates the risk of regulatory unpredictability by shifting the policy and creating a new transition
Run-off rate (depreciation is set as a percentage of the opening RAV, independent of asset lives)	Eases financing pressures on the DNOs if used to achieve an accelerated rate of depreciation A relatively flexible regulatory tool to increase or reduce the rate of depreciation over time that can also be tailored to individual DNO requirements Precedent of use in the water sector[110]	It delinks the rate of depreciation of RAV from Ofgem's current economic asset life policy Could be less transparent as a regulatory policy as a result, particularly if individual companies are permitted to propose individual RAV run-off rates Same issues as above options if used to accelerate depreciation
Depreciation adder[111] (an additional depreciation allowance & reduction in the RAV)	Eases financing pressures on the DNOs if used to achieve an accelerated rate of depreciation Flexible regulatory tool to increase or reduce cost recovery over time	NERA's proposal is based on setting the adder to achieve an 'economic rate of depreciation' – which they suggest should be based on a measure of long run investment levels But depreciation will eventually align with the long-run level of investment by DNOs independent of Ofgem's policy on asset lives and depreciation. So, this option is ultimately a

[109] Of course, this would need to be supported by an evidence-based review similar to the work that CEPA undertook for Ofgem at the start of RIIO-T3. We are not aware of any evidence to suggest that a 35-year economic life (on average) for electricity distribution assets is appropriate.

[110] Ofwat (2019): PR19 Final Determinations: Glossary

[111] This option is NPV neutral, if applied to the continuing opening book value of the RAV.

Option	Pros	Cons
		proposal to accelerate depreciation and reduce RAV For these reasons, it is not abundantly clear what would be the appropriate accelerated rate of depreciation – and by extension, lower RAV level – that Ofgem might look to transition to, or target under this policy particularly in a context of an expanding network While these issues could be addressed by clear regulatory policy signalling and supporting analysis, the policy may be viewed by some as less transparent and mechanical than other approaches – therefore, with less regulatory predictability and stability over time Same issues as above options if used to accelerate depreciation

Source: CEPA analysis

Not surprisingly, the implementation of these options all come with their pros and cons. The more fundamental question is under what conditions would Ofgem wish to consider these options, which in general achieve a higher rate of depreciation and a lower RAV level compared to the current policy?

We consider that Ofgem might consider these options if:

- The level of depreciation and price profile that the options give rise to are viewed as being fundamentally fairer compared to the current policy – for example, if they are considered to give rise to a trajectory of prices (comprising DNOs return on and of capital) over time that may be considered to be intergenerationally fairer and more equitable (see discussion in sections 3 and 4); and/or
- The financeability pressures on DNOs as identified in Ofgem and NERA's modelling for the ENA (primarily on FFO/Net Debt) cannot be expected to be resolved at the level of gearing required and/or temporary reductions to capitalisation rates during a period of peak investment.

As we have discussed in prior sections, the current policy puts pressures on the DNOs cashflows and, in particular, FFO based credit metrics, during a peak period of investment by DNOs over the ED3-ED5 period. More evidence is required to confirm if Ofgem's current depreciation policy has an overly material and unmanageable impact on DNOs' long-term financeability when viewed through several key FFO based credit ratios.

Further, as the option assessment above highlights there would be an important issue of regulatory stability and predictability to consider in the context of Ofgem transitioning to a new policy:

- Putting to one side the relative merits of the above options compared to the current policy, a change in policy in ED3 would result in a second major shift in depreciation within three price review cycles.
- Changing the basis and principle of depreciation policy – leading into a peak period of investment – could be argued to run against regulatory stability.

We might expect DNOs and their shareholders to argue that regulatory stability and predictability are strengthened if a change in depreciation policy is applied with the objective of putting the sector on a more sustainable and justifiable level of revenue and RAV than the current transition to the 45-year asset lives policy. Nevertheless, the signal that any change may have on perceived stability of Ofgem policy over time is, in our view, a relevant consideration in assessing the merits for any change at ED3 in the round.

5.4. Option D: Third party financing solution

An alternative option to existing tools under the current regulatory framework would be to support reductions in capitalisation rates for the DNOs – either for a temporary period or the longer term – by financing a portion of the required capital investment through an off-balance sheet financing solution. Some industry stakeholders have proposed such a concept based on a securitisation financing structure.

The approach would likely be structured as follows:

- Network companies will continue to receive the fast money on the same basis as determined by Ofgem with capitalisation rates in principle reduced to increase DNO funding of investment.
- This money plus accrued interest would be recovered from customer bills at a suitable later date – potentially when remaining electricity system costs are falling and demand has increased to spread the cost over a larger demand base.
- Ofgem would bring this into effect through network company licence changes, providing the contractual 'regulatory commitment' to underpin the securitised financing.

There are examples of schemes that are similar in objective internationally. For hydrogen networks, Germany has for example recently introduced a policy of 'amortisationkonto' as an intertemporal cost allocation mechanism of hydrogen network costs. An associated 'amortization account' plays an interim financing role for the sector, while the users connected to the hydrogen network grows over time (see Box 7 below).

Box 7 – Hydrogen 'Amortisationkonto' in Germany
A hydrogen infrastructure is to be created in Germany. In the first stage, the development of this hydrogen infrastructure will begin with the construction of a hydrogen core network that will reach the currently known hydrogen consumption and production regions in Germany. As part of the so-called intertemporal cost allocation mechanism, the amortization account will play an interim financing role. The company H2 Amortisationskonto GmbH was founded to manage the amortization account. Due to the cap on the ramp-up fee, there is a difference between high investment costs and low income from grid fees in the early ramp-up phase in view of the small number of initial users. This difference is temporarily financed from the amortization account. As soon as more grid users are connected to the grid at a later date and the income from grid fees exceeds the costs, the shortfall in the amortization account is compensated. If the amortization account is not balanced by 2055, a subsidiary state guarantee will take effect. In this case, the shortfall will be compensated by the Government, and the hydrogen core network operators will contribute a deductible of up to 24% sharing the underutilisation risk with investors.

Source: H2AMK: Start

The proposed scheme by some industry stakeholders also has some parallels with the role that competitively appointed network owners (e.g. CATOs) are envisaged to play in helping to finance the expansion of onshore and offshore electricity transmission networks, alongside electricity transmission owners in future.

The are several potential attractions of such an approach:

- If the underlying issue with Ofgem's current depreciation policy is a financing one,[112] then this option might potentially provide a means to bring in new third-party finance to bridge a financing 'gap'.

[112] The lower level of gearing that that may be required to achieve target credit ratios is either viewed as not acceptable or reasonable for the DNOs existing or future shareholders.

- It would provide a means for *further* allocating capital costs to future consumers, if the recovery of the securitised proportion of DNO's 'fast money' during ED3 and future control periods, is delayed to a future date, rather than being amortised from day 1 on a 45-year asset lives policy.

Assuming such an approach is feasible to begin with, a third-party financing solution would still likely come with practical challenges and would raise other issues which Ofgem would need to carefully consider before such a scheme could be considered in the interests of current and future consumers. For example:

- If used to achieve a temporary reduction in the rate of return *of* capital to investors – i.e., more backloaded depreciation, then a case for why more backloading is needed on top of the impacts that the transition to 45-year regulatory asset lives already achieves for consumers, would need to be articulated.
- We would expect a range of external stakeholders – including but not limited to, rating agencies and investors in DNOs – would expect Ofgem to establish a clear set of rules or principles of on what basis Ofgem would use, or seek to rely on, a third-party financing route between price reviews.[113]
    - What – for example – are the limits on Ofgem using such a third-party financing solution to push out investment cost recovery over time? Once such a scheme is in place, it can be envisaged there will be continued pressure from various stakeholders – including consumers – to press for more delayed cost recovery outside the core 45-year depreciation policy of RAV.
    - How will the long term liabilities created by a third-party financing scheme be viewed by financing markets and rating agencies? What will be the implications (if any) for how the rating agencies assess the credit quality of the DNOs and the sector in general going forward?
- There may be risks of locking in a cost of capital for a significant time period – via the third-party financing solution – that in several years' time to the decision, is considered high cost and poor value for money for consumers, relative to prevailing interest rates.

Unless a scheme remains in place for a long period of time, the impact of unwinding the third party financing at a future date would also need to be considered, in particular the implications that this will have on DNOs and their ongoing financing of the RAV.[114] This is similar to the impact that temporary reductions in capitalisation rates have on DNO RAV and finances: both interventions would temporarily increase cashflows for the DNOs, but once they are unwound, eventually the DNO RAV will transition to the steady state level that it would have reached without the intervention.

More fundamentally, such a scheme may over time reduce the transparency of the DNOs finances and the accounting in the electricity distribution sector. Our expectation is that any third-party financing scheme would also need to demonstrate that it can deliver a true long-term financing benefit for consumers compared to DNO financing of investment underpinned by the RAV.

The submissions that have been made by some industry stakeholders:

- Assert, but do not evidence, that the long term cost of financing under a privately financed securitisation approach would be equivalent, or cheaper, compared to DNOs financing their own investment programmes underpinned by RAV.[115]
- Assume a long-term regulatory commitment by Ofgem – which forms the basis on which the securitisation is ultimately financed. If equivalent long-term commitments were also offered to DNOs and their investors could some of the financing challenges they identify be at least partially addressed without incurring the transaction costs of a complex securitisation scheme?

[113] Similar in principle, but admittedly not equivalent to, fiscal rules that are adopted by bodies such as HM Treasury.

[114] We expect a third-party financing scheme cannot be looked at fully independently of long term DNO finances.

[115] The suggestion is that a lower nominal rate might be achieved relative to the RIIO-3 allowed cost of capital.

An Ofgem led financing intervention of this kind would begin to blur the boundary between Ofgem's responsibility for ensuring an *ability* for companies to finance their activities under price controls, and the licensee's responsibility for actual financing of regulated businesses.

Overall, the appeal of a third-party financing option is that it may be perceived to 'solve' a conflict in objectives in other options between consumers and DNOs in the short-term: it can be used to support – bring forward – DNO cashflows during DNOs peak period of their investment, while retaining the tilt of costs away from current consumers and towards future consumers. But it has a set of practical challenges and implications that would need to be carefully considered and evaluated before considerate could be adopted.

5.5. Summary

The subsections above provide an initial outline and assessment of relevant considerations regarding possible options that Ofgem could consider. Given the discussion in Section 4, Ofgem may wish to explore options which help to manage the impacts that the current depreciation policy give rise to as regards DNO RAV, allowed revenues and projected credit ratios, and Figure 13 below provides a summary of these options. However, as noted further above, these options are not exhaustive, nor are they mutually exclusive.

Figure 13: Summary of options

Options	Depreciation policy	Levers to address a financeability challenge..	Precedent
A. Retain the status quo policy with adjustments to gearing	Depreciation based on economic asset lives with: • 45-year asset life • Straight line depreciation	Where required to support financeability, lower DNO gearing supported by equity injections	RIIO-2
B. Temporary adjustment to 'natural' capitalisation rates during the period of peak network investment	As per A.	Where required, lower DNO gearing supported by equity injections, or Temporary adjustments (reductions) to capitalisation rates, e.g., applied during ED3-ED4	RIIO-T3
C. Accelerate the rate of depreciation and reduce build up of RAV either permanently or temporarily	Transition – either permanently or temporarily – to a more accelerated depreciation rate (faster rate of return of capital), targeted to achieve a targeted level of depreciation *	Higher revenues during ED2-ED5 with the transition to a more accelerated depreciation rate - either enduring or temporary - than the current policy, and Where required, lower DNO gearing supported by equity injections	Policy prior ED1
D. Facilitate a third-party financing solution that allows DNO investment to be funded as 'fast money' but paid for by consumers as 'slow money'	For DNO RAV additions, as per the status quo. Where required, a regulatory mechanism would allow either: a proportion of DNO fast money to be paid by consumers as slow money consistent with a 45-year straightline depreciation rate, or a slower rate of return of capital than applied to DNO RAV additions**	Where required to support financeability, lower DNO gearing supported by equity injections, and/or Third-party financing is used to reduce DNO balance sheet financing requirements with investment funded as fast money to DNOs, but paid for by consumers as slow money (via the third-party financing)	Germany - Hydrogen 'Amortisationkonto'

* As the ENA has proposed, this could be achieved by a more front-loaded depreciation profile (e.g., Sum of Digits), or a depreciation adder to 45-yr depreciation that reflects a desired higher (accelerated) rate of depreciation of RAV.

** In simple terms, this would require the build up of an investment balance that must be financed prior to its amortization at a later date.

6. CONCLUSIONS

ED3 preparations come at a time of elevated customer bills, growing electricity demand and an ambitious network investment programme ahead. In this context, the ENA has stated the Ofgem's depreciation policy is intergenerationally unfair for customers and creates a financeability challenge for DNOs. As such, Ofgem is rightly giving careful consideration to its depreciation policy ahead of ED3.

Ofgem's decision to increase asset lives from 20 years to 45 years, which 'unwinds' its previous policy of accelerated depreciation, leads to several regulatory dynamics.

In the transition period – while existing '20 year' assets fall out of the RAV and new '45 year' assets are added – it will result in temporarily lower total depreciation charges for customers, and an associated reduction in DNO revenue. In the long run, the level of depreciation will converge to the level of investment, regardless of the depreciation policy, but the RAV will increase under Ofgem's current policy (due to assets having longer lives), and the associated increase in the allowed return leads to higher customer charges, all other things being equal, i.e. before the impacts of the growing capex programme.

Our assessment of Ofgem's depreciation policy is based on the premise that depreciation is primarily an intertemporal cost allocation problem. Framed within Ofgem's statutory duties, depreciation policy is a question of how to effectively balance current and future consumers' interests within the context of changing use and demands on the network, while needing to ensure that the desired profile of cost allocation and prices over time (and the resulting cashflow for the network companies) is capable of being financed by the licensees and their investors.

Overall, an objective case can – and previously was – made on economic and societal equity terms, for Ofgem's decision to transition to a 45-year asset live policy. It is a reasonable economic principle to depreciate network assets over their expected economic life. Although arguments could be made for more front-loaded or back-loaded depreciation profiles than the 45-year straightline profile, the current policy can be viewed as striking a relatively pragmatic balance between these two competing positions.

Moreover, the upward trend in the '£ per domestic customer' charge implied by the current policy can be viewed as fair and equitable in the context of rising customer demand and usage of the electricity distribution network over time. It helps to levelise the '£ per kWh' charge over time, compared to what the profile would have been under Ofgem's previous policy. In effect, the current 45-year asset lives policy shifts the burden of electricity distribution costs to future consumers, when demands on the distribution network are expected to be higher and anticipatory investments in the network (expected during ED3-ED5) are expected to become better utilised. Overall, the current depreciation policy can be considered logical and justifiable from an intergenerational equity perspective.

The main challenge from Ofgem's current depreciation policy appears to be around company financeability during the transition period. Modelling results suggest that impacts to DNOs' depreciation allowances and total revenues will last for multiple price controls. However, more evidence is required to confirm if Ofgem's depreciation policy has an overly material and unmanageable impact on DNOs' long-term financeability.

Given that Ofgem's current depreciation policy can be considered logical and justifiable, the best way forward may be to focus regulatory efforts in ED3 around identifying the most appropriate and proportionate tool for helping to manage the DNOs' financing pressures during a peak period in investment and a transition to a higher sector RAV – as opposed to a fundamental reversal of depreciation policy, which does not appear justified on intergenerational equity grounds.

Appendix A NERA'S ANALYSIS FOR THE ENA

A.1. Overall observations

We have reviewed NERA's report on depreciation policy for ED3 that it prepared for the ENA. This includes a critique of Ofgem's current depreciation policy.[116] While we have not had access to the underlying modelling that is presented in NERA's report, their results broadly align with our expectations, as well as with Ofgem's internal modelling using the electricity distribution PCFM.

As noted in Section 2, NERA's report for ENA (2025) characterises Ofgem's current depreciation policy as "*undermining intergenerational equity" and "creating… a risk to financeability"*.[117]

NERA's modelling highlights how for a given level of investment, different regulatory depreciation policies imply different levels of RAV in steady state. This occurs not just for different asset life assumptions, but also for different depreciation schedules (e.g. frontloaded versus straightline versus backloaded). This effect arises due to differences in the build-up of the RAV over time, for the reasons discussed in Section 3.

We concur with NERA that there is a transition period when the depreciation charge will fall – as existing assets (under a 20-year asset lives) fall out of the RAV more quickly than new assets (with a 45-year asset life) are added to the RAV. This leads to financeability pressures in the medium term and higher consumer charges in the long term.

Notwithstanding this analysis, as we discuss in the main report, there are reasons why the overall conclusions that NERA reach, particularly regarding the intergenerational equity of Ofgem's ED1 policy, are debatable.

Conceptually, NERA's argument is based on a comparison of Ofgem's policy to a series of 'reasonable benchmarks'. These benchmarks are helpful in approximating the level of depreciation required in steady state to allow DNOs to fund replacement capex and maintain their asset base over time. If depreciation were to deviate materially from these benchmarks, this can create a financeability challenge for DNOs in funding their investment programmes, and therefore NERA is justified in raising this issue as it pertains to the transition period.

However, as discussed below, these benchmarks have some weaknesses as a point of reference for judging the rationale and long run intergenerational equity of Ofgem's depreciation policy.

More broadly, as NERA's analysis is concerned with highlighting the challenges associated with the transition period, it does not appear to give weight to the potential longer term advantages and justification for the move to the 45-year asset lives policy, many of which were debated at the time the current policy was first introduced, as discussed in Section 2. For example, even though Ofgem's current policy may appear to be inequitable (because the depreciation charge is rebalanced towards future consumers), from a long-term perspective it can be seen to improve equity by aligning customer charges with useful asset lives. Lower short-term charges are the consequence of unwinding the previous policy of accelerated depreciation, while higher long-term charges are the result of a RAV built up from assets with longer lives.

For the reasons that we discuss in the main report, in judging the overall intergenerational equity of Ofgem's depreciation policy, it is also important to consider the impact of the policy on customer prices over time, taking into account the expected profile of demand and utilisation. As discussed in Section 4, the expected increase in the £ cost per domestic customer that will arise under Ofgem's current policy is aligned with an expected increase in the use of the electricity distribution network over time, and Ofgem's policy can be considered to help levelise an expected declining real electricity distribution average unit price over time. Other measures of demand, such as peak demand, may also provide a valid basis for assessing this issue. The impact of the current policy on prices, as well as the level of allowed revenue over time, is important to an assessment of its intergenerational equity.

[116] NERA (2025): Depreciation Policy for RIIO: A report for the ENA

[117] Ibid., p. 5

In terms of financeability impacts, we concur with NERA's analysis that additional financeability pressures arise for the DNOs, specifically, in relation to FFO based credit ratios, from the transition to 45-year asset lives under the current policy in the forthcoming ED price controls. However, as we discuss in in Section 5, there are a range of options that could, in principle, be considered to help manage this financing challenge.

NERA also highlights the risk to "*political acceptability*" of higher future customer charges (from 2050) that are driven by an increase in the allowed return for companies.[118] As discussed in Section 4, this is effectively a time inconsistency risk for investors: that a future regulator could be perceived to have less incentive to maintain allowed returns at the opportunity cost of capital after investments in RAV have been made, heightened by the increase of allowed returns on the RAV within DNO revenues which the ED1 depreciation policy gives rise to because of the transition (all else being equal) to a higher steady state RAV.

As discussed in Section 4.2, these may be understandable investor concerns in principle, but there are also some objections to this reasoning.

A.2. Discussion of NERA's benchmarks

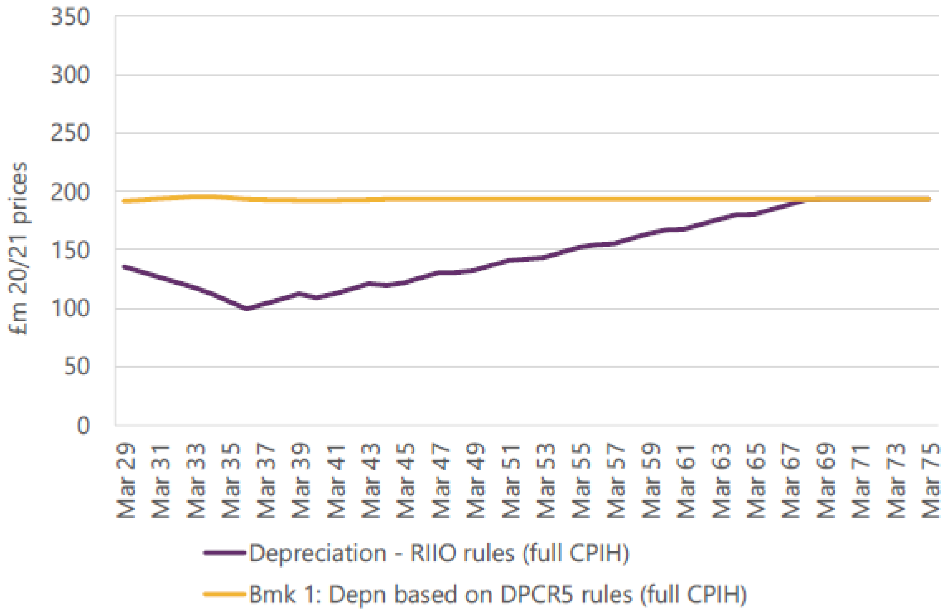
In terms of NERA's 'reasonable benchmarks', we highlight the following:

Benchmark 1: 'DPCR policy': This implies a policy of perpetual accelerated depreciation (i.e. the state before Ofgem's policy decision at ED1), which risks being unsustainable and/or intergenerationally inequitable, e.g. during a period of network expansion, current customers risk 'overpaying' for their share of the benefits from capital. For example, were Ofgem to have continued with this policy, we may have expected a steeper a decline in the '£ per kWh' over time compared to Ofgem's current policy. NERA's graphical analysis also omits certain time periods, which may be helpful for understanding the question of intergenerational fairness: for example, it does not show the history of accelerated depreciation in prior years (to the left of the dates shown), or a comparison of future years (to the right of the dates shown) if, hypothetically, the electricity network were ever to decline.

As a benchmark to assess Ofgem's policy, it will also, by definition, show a temporary depreciation 'gap' compared to the benchmark. Ofgem's ED1 depreciation policy – and the transition this gives rise to – will temporarily reduce depreciation allowances compared to if the DPCR policy had been retained. In contrast, the benchmark will – after removing the impact of totex growth post-ED1 – lead to depreciation allowances that are stable and more closely approximating of long-run levels of investment (see Figure 14) for the reasons discussed in Section 3.1.

118 Ibid., p.28

Figure 14: NERA modelling of depreciation after removing totex growth post-ED1.



Source: NERA, Depreciation Policy for RIIO: A report for the ENA, January 2025, p.14

<u>Benchmark 2: '45 year life for all historic capex'</u>. This schedule applies the new depreciation rate to all assets (including existing assets). NERA states: "*Applying a 45-year asset life to all historical capex, including to capex that has "already been depreciated", would not lead to the notional DNO over-recovering depreciation (or over-recovering twice)*". Like with Benchmark 1, this benchmark is effectively also a measure of depreciation in steady state and so, by definition, will show a temporary depreciation 'gap' compared to the benchmark. In this sense, similar to the other benchmarks, it is not seeking to provide an assessment of the relative merits of a transitional depreciation path.

<u>Benchmark 3: 'Capex (RAV additions)'</u>. This benchmark seeks to compare depreciation with long run asset replacement costs, noting that this has occurred historically. While a 'replacement cost' approach to depreciation has some merit in principle, the historic profile of depreciation may not necessarily be representative of the future replacement cost. In addition, as investment and depreciation will align in a network 'steady state', benchmark 3 appears similar to benchmark 1 and 2.

As the above discussion highlights, the benchmarks that NERA propose may appear a reasonable basis for helping to judge the impact of Ofgem's ED1 policy on the level of depreciation allowances faced by current and future consumers over time. However, there is a challenge with all the benchmarks – based on comparing forecast depreciation in ED3-ED6 to an 'economic' level of depreciation[119] – as an objective basis to judge the longer term intergenerational equity of Ofgem's depreciation policy for consumers. This is because:

- Any depreciation policy adopted by Ofgem will eventually align DNO depreciation charges with the long-run level of investment by DNOs.
- *Any* change that is made to depreciation will temporarily increase or decrease depreciation away from the long-run level of investment.

Overall, NERA's three benchmarks are substantially similar in showing depreciation for a policy in a position that resembles a steady state. In contrast, the modelled depreciation allowances under the ED1 policy reflect the transition to a new steady state, including the level of RAV and depreciation allowance that will approximate long run investment. As noted previously, a change in depreciation policy will necessitate a transition period, so the impacts of the ED1 policy will deviate somewhat from NERA's 'steady state' benchmarks. However, it is the

[119] Which are based on depreciation aligning with the long-run level of investment by DNOs.

significance of this deviation – in terms of materiality and/or longevity – which determines the impact on DNO financeability.

However, the benchmarks are not able to guide whether the level of RAV (that Ofgem's policy eventually gives rise to) can be viewed as more or less intergenerationally equitable than any alternative RAV level.

A.3. SUMMARY

Overall, while NERA's modelling results appear plausible – including the temporary fall in depreciation and adverse implications for company financeability during this transition period – we have identified some potential issues regarding their characterisation of Ofgem's policy and their choice of benchmarks, both of which affect NERA's conclusions, and which merit further analysis.

Appendix B REGULATORY PRECEDENT

The Council of European Energy Regulators (CEER) publishes an annual report on Regulatory Frameworks for European Energy Networks. Their latest report sets out the depreciation profile used for depreciation of network assets in each country surveyed.[120] The vast majority of countries adopt straightline depreciation. For electricity distribution, the only exception appears to be Estonia, which adopts different approaches for some assets.[121]

Country	Code	Depreciation method
Austria	AT	Straight line
Belgium	BE	Straight line
Cyprus*	CY	Straight line
Czech Republic	CZ	Straight line
Germany	DE	Straight line
Denmark	DK	Straight line
Estonia	EE	Differential approaches
Spain	ES	Straight line.
Finland	FI	Straight line.
France	FR	Straight line
Great Britain**	GB	Straight line
Greece	GR	Straight line
Croatia	HR	Straight line
Hungary	HU	Straight line
Ireland	IE	Straight line
Iceland	IS	Straight line
Italy	IT	Straight line
Lithuania	LT	Straight line
Luxembourg	LU	Straight line
Latvia	LV	Straight line
Netherlands*	NL	Straight line
Norway	NO	Straight line
Poland	PL	Straight line
Portugal	PT	Straight line
Romania	RO	Straight line
Sweden	SE	Straight line
Slovenia	SI	Straight line
Slovakia*	SK	Straight line
Albania	AL	Straight line
Georgia	GE	Straight line
Montenegro	ME	Straight line
North Macedonia	MK	Straight line
Ukraine	UA	Straight line

Notes: *2024 data. **2022 data. All other countries are based on 2025 data.

[120] CEER (2025): Regulatory Frameworks Report
[121] CEER (2019): Regulatory Frameworks Report

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