An overview of Ofgem's latest electricity distribution price controls (RIIO-ED2)

February 2023

ECONOMIC
CONSULTING
ASSOCIATES

www.eca-uk.com

Contents and overview

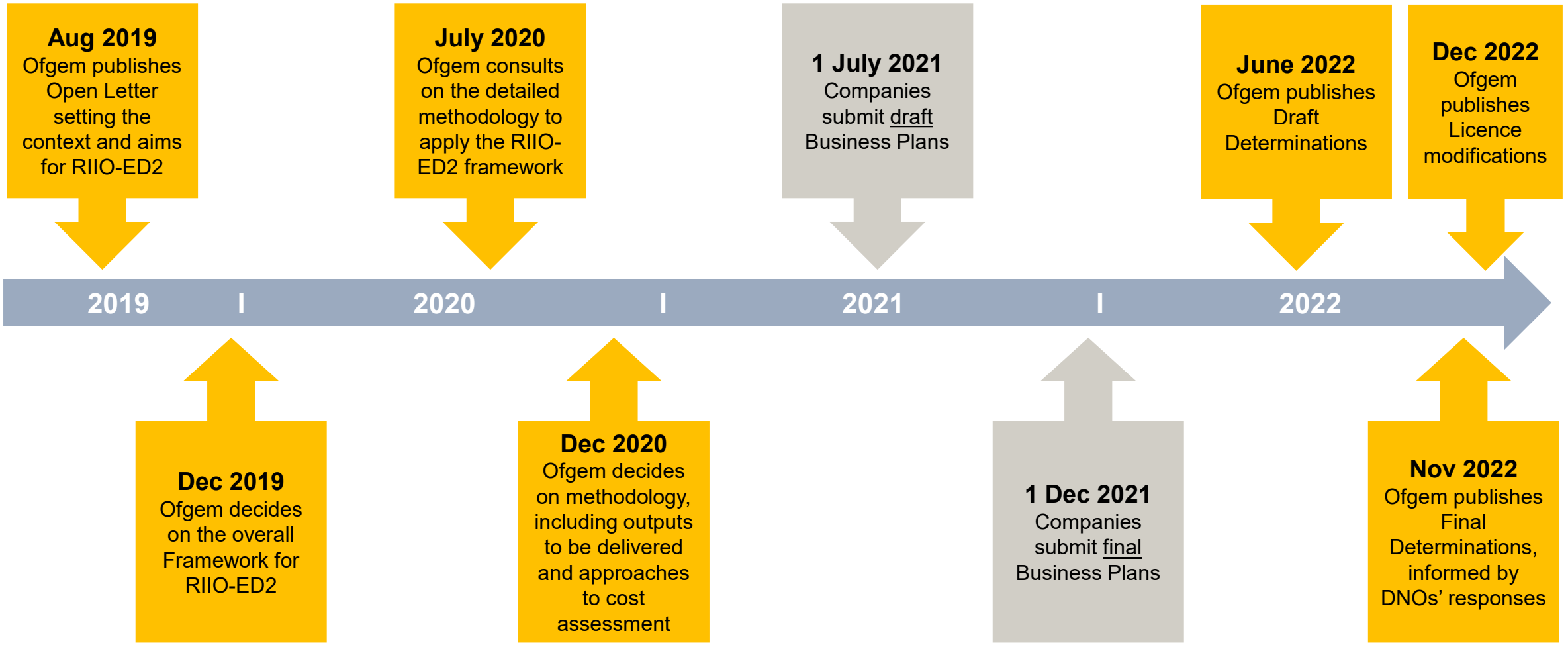
Introduction: Ofgem has set new price controls (RIIO-ED2) for Great Britain's electricity distribution network operators (DNOs) to take effect from 1 April 2023

- Scottish and Southern Energy
- SP Energy Networks
- Electricity North West Limited (ENWL)
- Northern Powergrid
- UK Power Networks
- National Grid Electricity Distribution (NGED)

Source: RIIO-ED2 Final Determinations Core Methodology Document, Ofgem, Nov 2022

- Great Britain has 14 DNOs in 6 ownership groups
- Ofgem sets price controls under its, so-called, RIIO framework (Revenue = Incentives + Innovation + Outputs)
- The first RIIO price controls were of an 8-year duration and were set by Ofgem in 2012 for gas networks and for electricity transmission (ET)
- The first RIIO electricity distribution (ED) price controls were set 2 years later, in 2014, incorporating lessons from the earlier RIIO controls
- In November 2022, Ofgem published the RIIO-ED2 controls, which are of five years duration (2023 to 2028) and build on the approach in gas and ET
- These RIIO-ED2 price controls were set against a backdrop of challenges, including:
  - Transition to net zero – driving more connections of low carbon technologies (LCTs), increased demand, and a requirement for more flexible networks
  - Economic uncertainty, with inflation at a 40-year high and rising interest rates
  - High returns achieved by DNOs in the RIIO-ED1 price control period
  - High energy bills in the wake of the war in Ukraine.

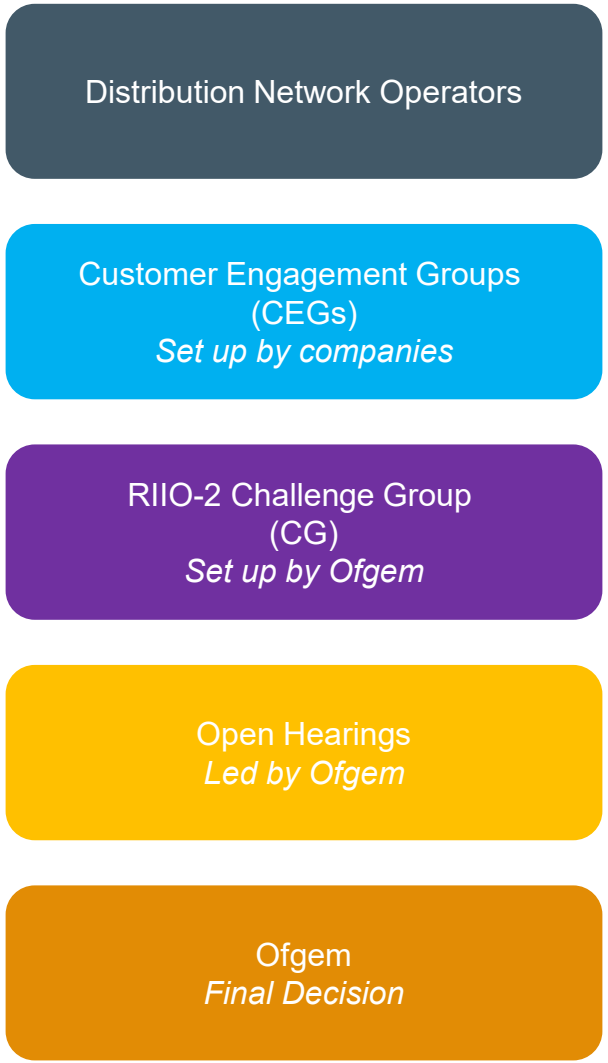
Process: Setting the RIIO-ED2 price controls took over three years and, in the event of an appeal, could take around four years



Note: The RIIO-ED2 price controls are due to take effect from 1 April 2023, subject to DNOs appealing Ofgem's Final Determination to the Competition and Markets Authority (CMA)

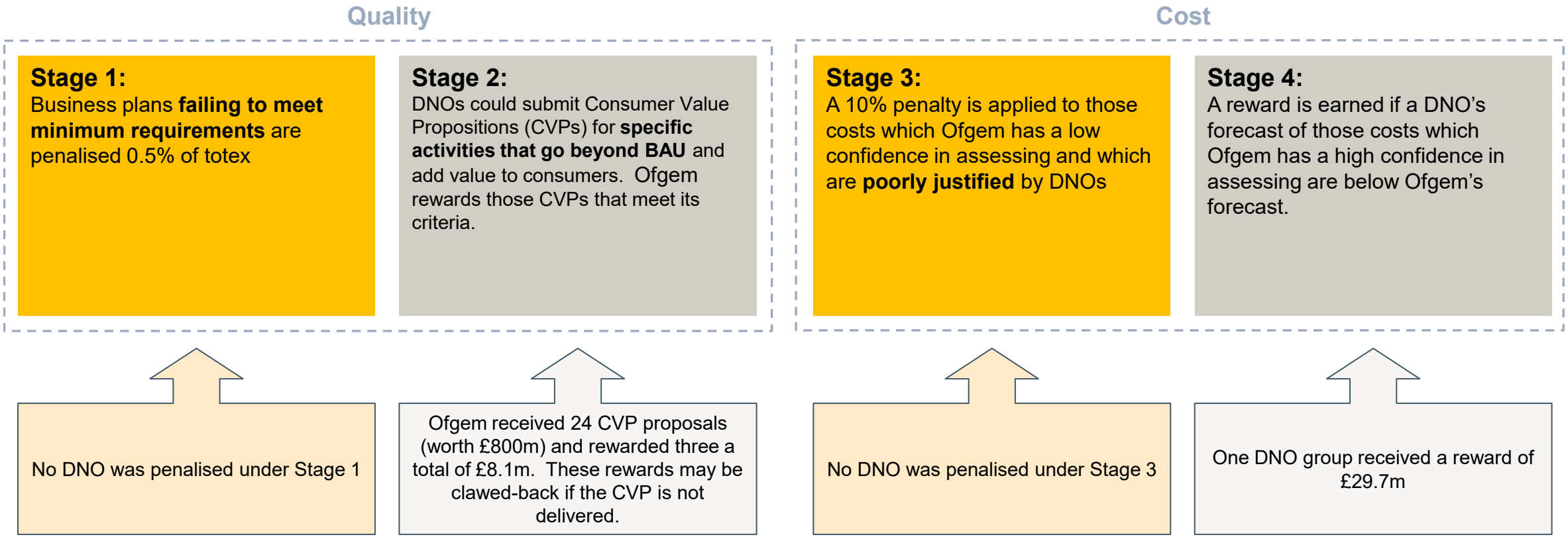
Stakeholder engagement: Ofgem sought to embed the consumer voice in RIIO-ED2 through an enhanced engagement process

- Ofgem expects companies to put customers at the heart of the way they run their businesses and identifies how the voice of consumers informed its RIIO-ED2 Final Determinations
- Ofgem used an "enhanced engagement process" for the RIIO-ED2 process which included:
  - Each DNO establishing an independently chaired **Customer Engagement Group** (CEG), to scrutinise the development of its business plan and to report to Ofgem on the final version (e.g. on whether the plans are grounded in consumer and stakeholder research, and address their key priorities)
  - Ofgem setting up an independently chaired **RIIO-ED2 Challenge Groups** (CG), to provide challenge and scrutiny of all DNOs' draft and final business plans from the perspective of current and future consumers
  - Ofgem issuing a **call for evidence**, seeking views from stakeholders on DNOs' final business plans
  - Ofgem holding six, virtual **open hearings** with a wide range of stakeholders and the DNOs to discuss final business plan proposals.
- All **DNOs intend to retain their CEGs** (or successor bodies with a similar remit and expertise) to monitor delivery of their business plans during the price control period.
  - In some previous price controls, Ofgem had included a financial incentive on stakeholder engagement (e.g. on the extent to which DNOs engage with stakeholders and understand their needs). However, this has been removed in ED2 as Ofgem is satisfied it has become a business-as-usual (BAU) activity.



Business Plan Incentive: DNOs may receive financial penalties or rewards depending on the quality and ambition of their business plans

- Ofgem applied a **Business Plan Incentive** (BPI) to encourage DNOs to produce high-quality, ambitious plans.
- Under the BPI, Ofgem determined financial penalties and rewards in the four stages shown below.



Outputs and incentives are key elements of the RIIO framework intended to drive companies to deliver what matters to current and future customers

- Ofgem's output framework for RIIO-ED2 comprises:
  - **Licence Obligations (LOs)** – these set minimum standards that DNOs must achieve. New LOs for RIIO-ED2 include requirements to: (a) consult on and publish a *Digitalisation Strategy* and Action Plans and (b) deliver a *smart optimisation platform* to support whole system and net zero planning.
  - **Price Control Deliverables (PCDs)** – these are specific deliverables with funding allocated and a refund mechanism should the output not be delivered (or not delivered to the required standard). For RIIO-ED2, there are three PCDs common to all DNOs and six company specific (or bespoke) PCDs.
  - **Output Delivery Incentives (ODIs)** – these are either financial (ODI-F) or reputational (ODI-R) incentives intended to drive service improvements
    - *Financial ODIs (ODI-F)* - The return at risk on financial incentives is in the range +2.65% to -4.0% of regulatory equity. The Interruption Incentive Scheme (IIS) is the single largest ODI-F, but there are six other common ODI-Fs relating to areas such as customer satisfaction, complaints, connections and the emergent Distribution System Operator (DSO) role.
    - *Reputational ODIs (ODI-R)* - there are 4 common ODI-Rs and 2 bespoke ones. Common ODI-Rs relate to areas such as DNOs annual environmental and annual vulnerability reports
  - Longer standing **Statutory Instruments (SIs)** – which place obligations on the DNOs, most notably in relation to Guaranteed Standards of Performance, which compensates consumers if minimum service levels (with respect to interruptions, voltage quality, and customer service) are not met.

Uncertainty Mechanisms: A range of mechanisms enable DNOs' revenues to adjust in period depending on changing circumstances

- Given the uncertainty (and risks to both consumers and companies) that exists at the time of setting a price control, Ofgem uses **uncertainty mechanisms** (UMs) to adjust DNOs' revenues in response to changing circumstances during the price control period.
- Ofgem uses **5 types of UM** and has put in place a total of **44 UMs**, including 37 that are common to all DNOs and 7 that are bespoke (i.e. specific to a DNO)

Type	Cost pass-through	Indexation	Volume driver	Use-it-or-lose-it (UIOLI) allowance	Re-opener
Used for	Uncertain costs, over which the DNO has limited control, are passed through to consumers.	Uncertain costs, over which the DNO has limited control, and which can be linked to an established index (e.g. price inflation)	Activities with uncertain volumes of work. (Allowances are adjusted for the actual volume of work, usually at a pre-defined unit cost.)	Work that is needed, but the specific nature and costs are uncertain. (Ex-ante allowances are typically provided but can be recovered.)	Activities and projects with uncertain need, scope and costs at the price review. (DNOs can apply, in period, for additional allowances once certainty improves.)
Examples	Business rates, Ofgem licence fee, severe weather 1-in-20, etc.	Indexation of RAV and revenues to price inflation, indexation of input prices ("real price effects"), cost of debt and equity indexation.	Low voltage services, secondary reinforcement, indirect scaler	Cyber resilience, worst served customers, visual amenity	Net Zero, High value projects, Distribution System Operator, tax review, rail electrification

Cost assessment: Ex-ante cost allowances are around 12% lower than requested, but higher than in the RIIO-ED1 price control

- Ofgem set ex-ante totex (total expenditure) allowances of £22.2bn (2020/21 prices)
  - This is **11.8% lower than DNOs had requested** (£25.2bn)
  - But around **17% higher (on an annual basis) than in RIIO-ED1** - reflecting the "*unprecedented challenges associated with the transition to net zero and a smarter, more flexible energy system"* (para 7.12, FD Core Methodology Document)
  - Some £3.1bn is for investment in network upgrades to support the roll-out of EVs, heat pumps, and low carbon distributed generation (solar and wind)
- Ex-ante allowances for 98% of DNOs' submitted costs were set as the average of results from:
  - Disaggregated benchmarking models (50% weight) – benchmarking of at an activity level (e.g. load, non-load, business support) using a range of methods (e.g. regression, unit costs)
  - Top-down totex regression models (50% weight) – three, equally weighted, regression models, with a post-modelling adjustment applied to standardise DNO's forecasts of LCT uptake:
    - Three models were used in recognition that there was no single definitive approach to assess comparative efficiency
    - All models included forecast data to take account of changes in the relationship between costs and cost drivers expected in RIIO-ED2, e.g. from DNOs taking on DSO responsibilities, an expected increase in LCT uptake, etc. Two of the models also included historical data (from 2016 onwards)
- A "catch-up" efficiency challenge is set by applying a 3-year glide path from the 75th percentile of the efficiency scores (the target benchmark at RIIO-ED1) in year 1 to the 85th percentile for the final two years. A further ongoing efficiency of 1% per annum was applied to allowed totex

Performance sharing: Under- and over-spends against allowances are shared with customers within the price control period

- Under the **Totex Incentive Mechanism (TIM)**, any over- or under-spend by DNOs against their totex allowances ('the performance') is shared with customers
- The proportion of performance shared with customers (known as the **TIM incentive rate**) can differ by DNO depending on Ofgem's confidence in independently assessing a DNO's costs.
- Ofgem has high confidence in those costs it can set allowances for independent of a DNO's forecasts, e.g. when cost allowances are set through benchmarking against other DNOs or unit costs derived from outturn costs
- Under the TIM, the proportion of performance that a DNO retains potentially ranges from 50% (where Ofgem has high confidence) down to 15% (where confidence is low)
  - This approach is deemed to **reward genuine efficiencies and better protect customers** from windfall risks – e.g., Ofgem believes it is more likely any underspend will be due to 'miscalibration' (error in setting allowance) rather than real efficiency when a company's plan has a higher proportion of lower confidence costs; hence these companies should receive a lower TIM incentive rate (which means more is returned to customers); and vice versa
- In practice, the range in the TIM incentive rate across DNOs in RIIO-ED2 was just 50% down to 49.3%
- The sharing of totex performance is included in Ofgem's annual process for adjusting allowed revenues within the price control period

Innovation: Ofgem provides funding for innovation, with the focus on projects that support the transition to net zero

- Ofgem awards funding for innovation projects that would not otherwise occur (either under the price control or from other funding mechanisms) because they are speculative in nature and commercial returns are uncertain
- Funding is awarded under two main schemes:
  - The **Strategic Innovation Fund (SIF)** is directed to larger scale projects that support the energy transition and achievement of net zero (in RIIO-ED1 the SIF had a broader scope which included cost and technical efficiency):
    - Ofgem identifies Innovation Challenges and invites applications (outside of price control review processes) for innovation projects to address them
    - Any network licensee (i.e transmission, distribution and system operation in both gas and electricity) can apply, not just electricity DNOs
    - Each project must include participation from a range of stakeholders (e.g. start-ups, consumer groups, SMEs, generators and suppliers, academia)
    - To mitigate risk associated with innovation, project funding is phased
    - The SIF is currently worth about £450m (although Ofgem can decide to increase it)
  - The **Network Innovation Allowance (NIA)** is directed to smaller innovation projects that support the energy transition *and / or* address consumer vulnerability (in RIIO-ED1 there was significant funding for innovation in network monitoring, automation and digital grids which are now expected to be deployed at scale in RIIO-ED2):
    - DNOs submitted proposals for NIA projects in their RIIO-ED2 Business Plans, as part of the price control review process
    - Ex-ante allowances are provided but on a “use it or lose it” basis
    - Initial RIIO-ED2 NIAs are worth around £68m and Ofgem will, by 2025, review whether more NIA funding is needed for the final two years of the price control

Cost of capital: Ofgem updates the cost of debt and risk-free rate in each year of the price control (along with the impact on allowed revenue)

Ofgem sets a "vanilla" WACC as a weighted average of the (pre-tax) cost of debt and (post-tax) cost of equity, with notional gearing being the weight. The cost equity is set using the CAPM framework (but with cross-checks)

#	Component	Value
A	Cost of debt index*	2.21%
B	Additional debt costs	0.80%
C	Infrequent issuer premium	0.06%
D	**Cost of debt = A + B [+ C]**	3.01% [3.07%]
E	Risk-free rate*	1.23%
F	Notional equity beta	0.759
G	Total Market Return (TMR)	6.50%
H	*Implied* Equity Risk Premium (ERP)	5.27%
I	**Cost of equity = E + F*H**	5.23%
J	Gearing	60%
K	**WACC = D*J + I*(1 - J)**	3.90% [3.93%]

Ofgem updates the cost of debt index annually, as a 17-yr trailing average of a reference index of Utility (10+ years) bonds

Companies that are expected to issue new debt infrequently or to issue smaller amounts receive an addition to the cost of debt of 0.06% (which applies to 11 out of the 14 DNOs)

Ofgem updates the risk free rate annually, as the average in October of (real) index linked British government bonds (gilts)

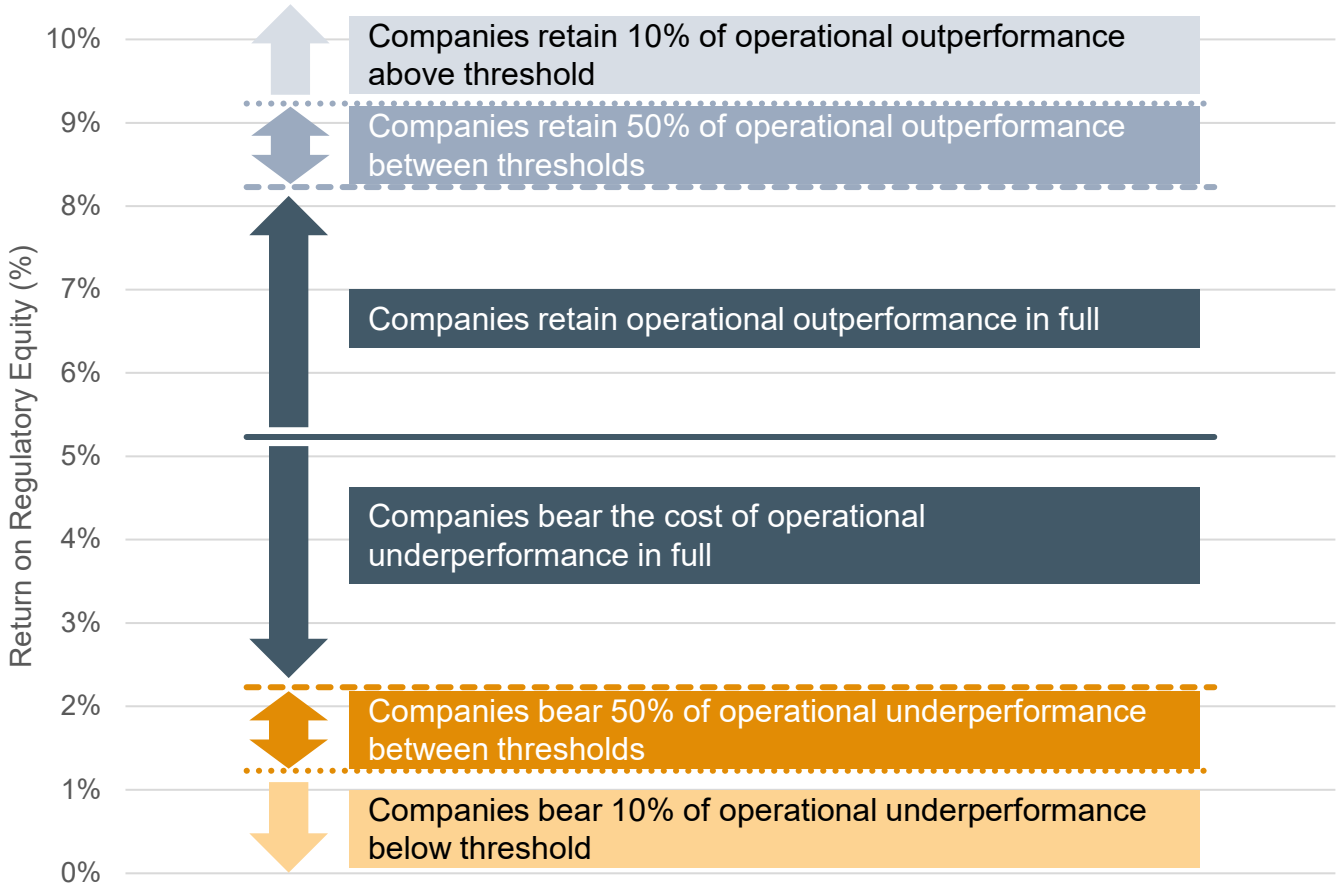
Ofgem assumes that the TMR is **fixed**, meaning that each year the risk free rate changes, the *implied* ERP also changes

Notes: * values shown for CoD index and RfR are forecast annual averages. Values in red denote those that change annually (for indexation of the CoD and/or RfR).

Return Adjustment Mechanism: At the end of RIIO-ED2, Ofgem will adjust DNOs' returns if they are significantly higher or lower than anticipated when setting the price control

Ofgem applies **Return Adjustment Mechanisms (RAMs)**:

- Returns from *operational performance* (i.e. totex over- / under-spend and incentive payments / penalties, but not from tax and financing performance) are assessed at the end of the price control period
- Two symmetrical thresholds of 300bps and 400bps apply around the baseline return on equity apply, with outturn operational performance returns adjusted by 50% and 90% respectively (see chart)
- Ofgem considers there is limited probability that either the upside or downside RAMs will be triggered, but that the RAMs provide protection for consumers and investors, including for any "miscalibration" when setting the price control. I.e. Ofgem considers RAMs a "failsafe" mechanism.



Nick Haralambopoulos ECA Director of economic regulation
Nick@eca-uk.com

Martin Siner ECA Technical Director for UK
Martin.Siner@eca-uk.com