

Network regulation in Great Britain

Indian delegation visit

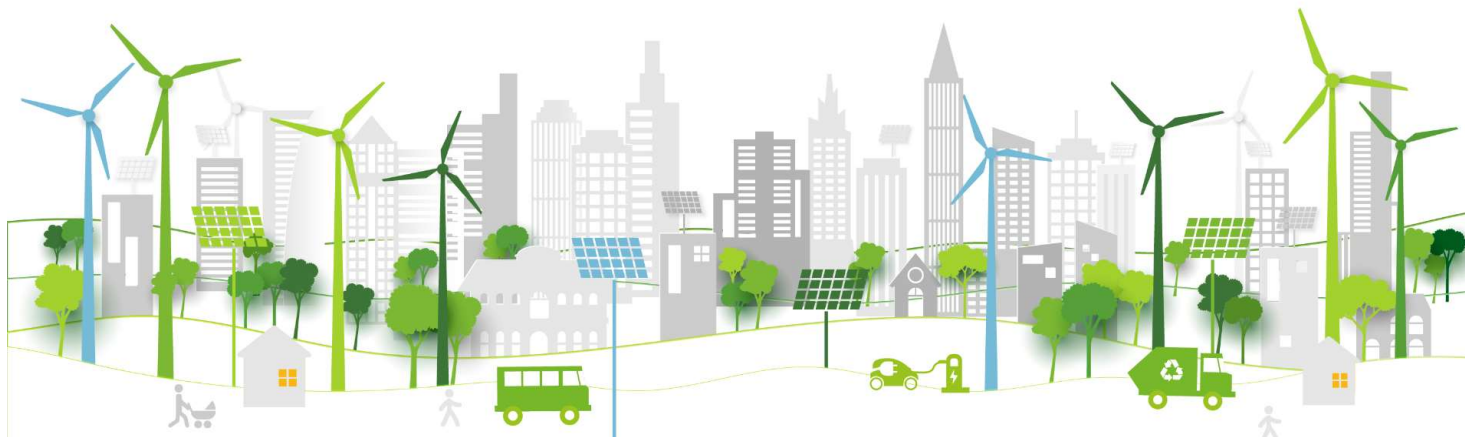


21 October 2024

The evolution of the regulatory framework from RPI-X to RIIO

What are price controls and why do we set them?

- Energy networks are privately owned and funded through energy bills. They are natural monopolies meaning there's no competition to drive better service, greater efficiency or more investment in energy networks – this is why they need to be regulated.
- Price controls are a method of setting the amount of money (allowed revenue) that can be earned by the network companies over a defined length of time (a price control period). These companies recover their allowed revenues from their charges (from maintaining and operating the networks) who in turn pass these costs through to consumers via energy bills.
- Price controls ensure network companies can earn a fair return on their activities while controlling the end cost to consumers. Ofgem also sets performance targets for the areas network companies impact or deliver on that matter to consumers and network users (e.g. customer service, network reliability and environmental performance).
- At fixed periods we conduct a price control review to set the revenues for the next period.



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Gas Transmission (GT)

- High pressure gas network which transports gas from entry terminals to gas distribution networks, or directly to power stations and large industrial users

Gas Distribution (GD)

- Underground gas pipes that take gas, at a lower pressure, from the transmission system to homes and businesses

Electricity Transmission (ET)

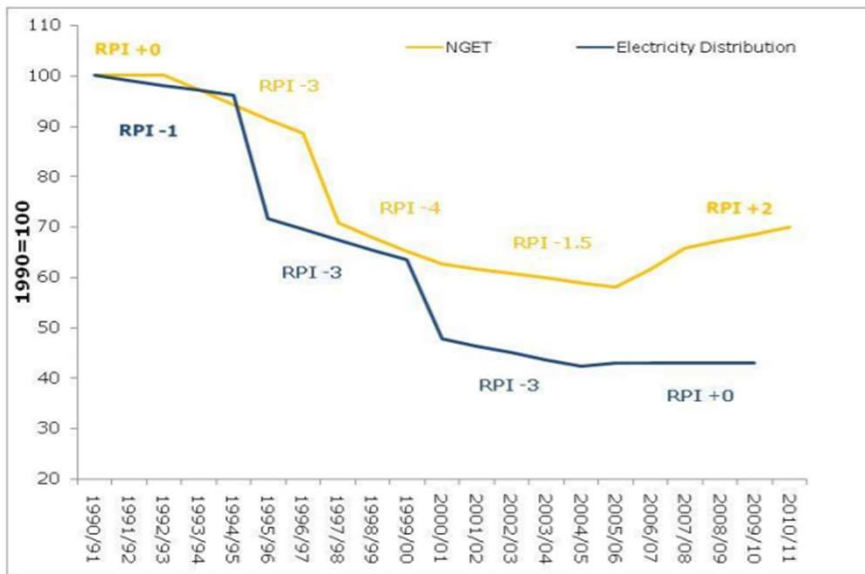
- High-voltage cables, usually strung between pylons, but in some places underground moving electricity from generators to the distribution network

Electricity Distribution (ED)

- Power lines that take electricity, at a lower voltage, from the transmission system to homes and businesses

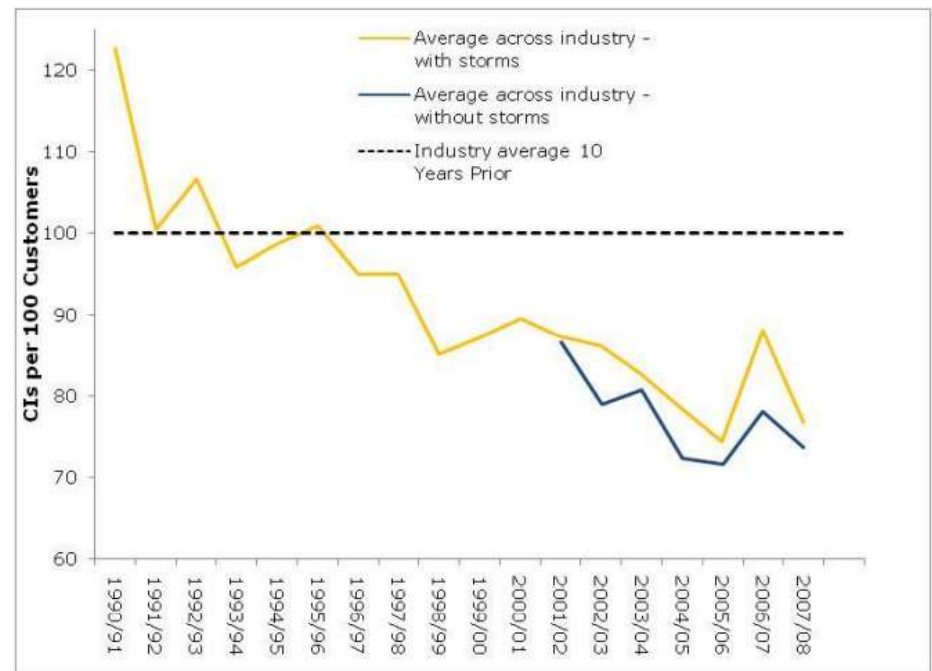
The network companies manage the **transportation** of energy, not the actual supply or production.

Prices came down



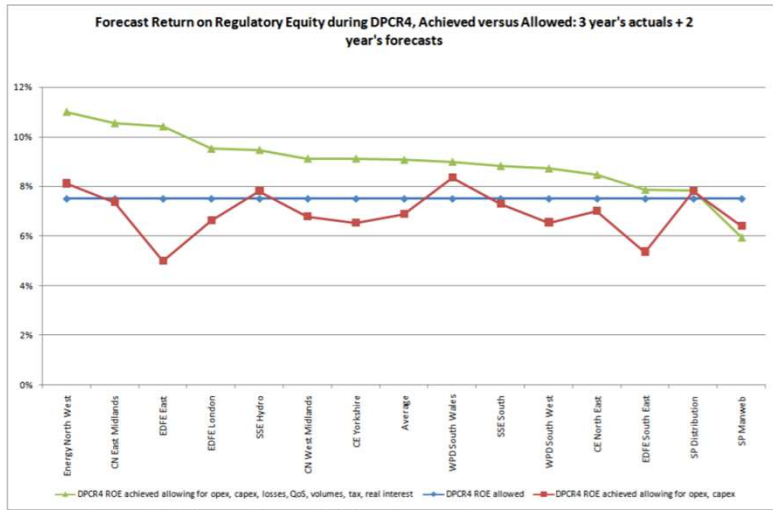
Source: Ofgem and Offer, various price control decision documents.

Performance improved



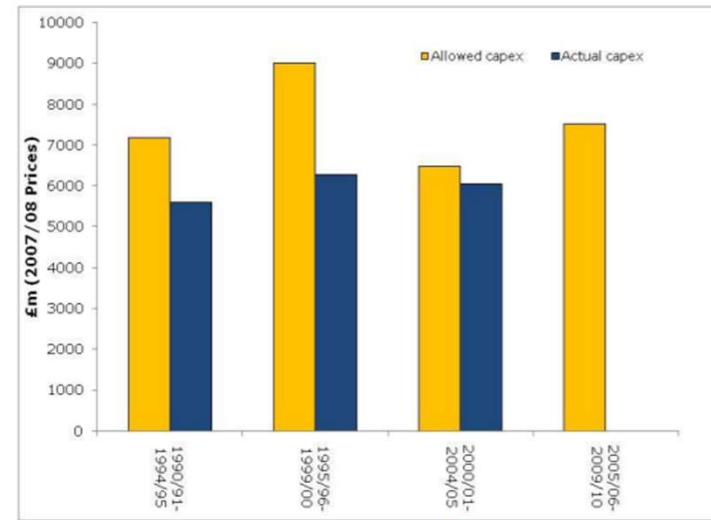
Source: Ofgem and Offer, various sources²⁸.

Companies outperformed their settlement.....



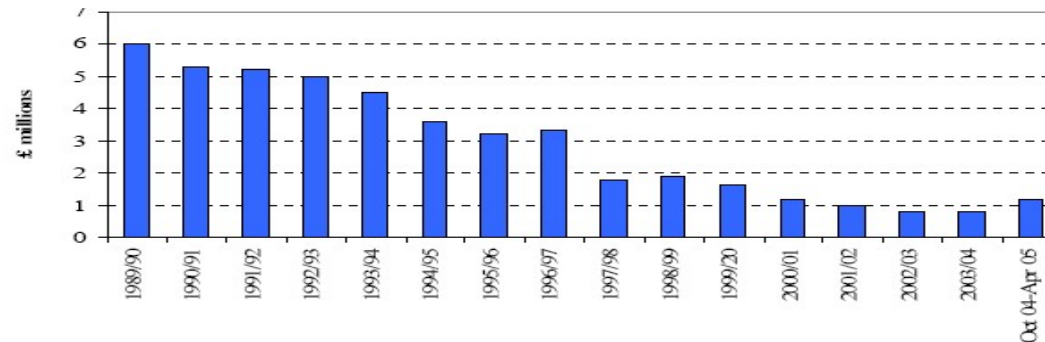
Source: Ofgem, DPCR5 December 2008 Policy Document.

At least partly through underspending capex allowances



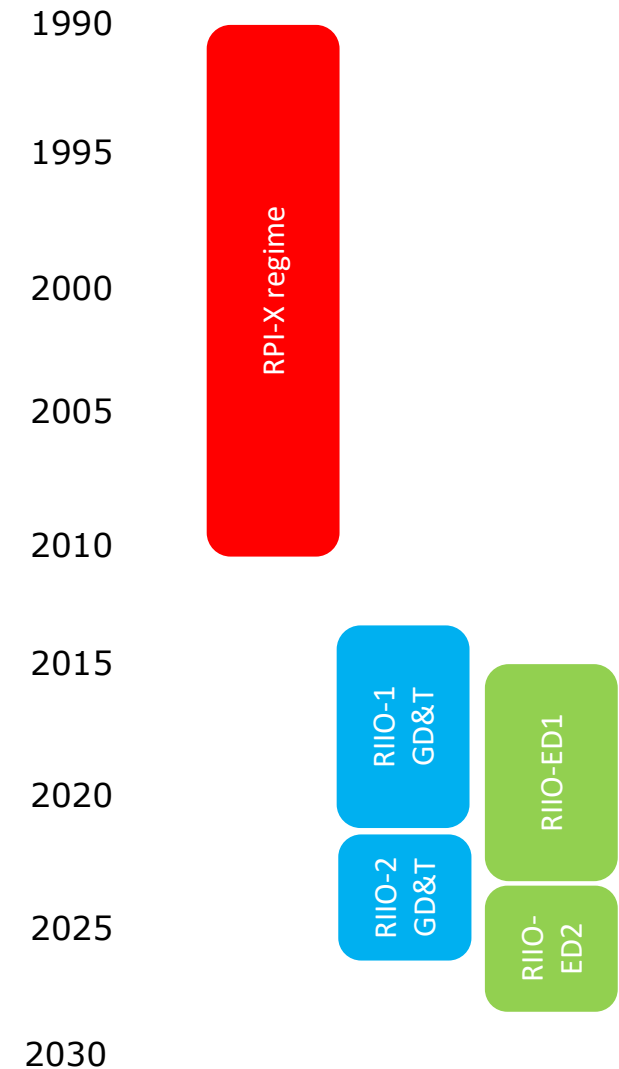
Source: Ofgem, various price control documents

Spending on R&D declined to virtually zero



The RIIO framework has been the basis for setting price controls since 2013

- The **RPI-X** regime was in place for 20 years, following the privatisation of the energy industry.
- In 2010, Ofgem announced its decision to use the **RIIO** model for the four network sectors: Gas Transmission (GT), Gas Distribution (GD), Electricity Transmission (ET) and Electricity Distribution (ED).
- RIIO stands for **Revenue = Incentives + Innovation + Outputs**.
- RIIO builds on the previous RPI-X regime, but places much more emphasis on incentives to drive the outputs and innovation needed to deliver a sustainable energy system in way that provides value for money to existing and future consumers.
- **RIIO-1** was the first set of price controls implemented under the RIIO model.
 - 2013 - 2021 for the ET, GT and GD sectors
 - 2015 - 2023 for the ED sector
- **RIIO-2** runs between:
 - 2021 - 2026 for the ET, GT and GD sectors
 - 2023 - 2028 for the ED sector
- **RIIO-3** will run between:
 - 2026 - 2031 for the ET, GT and GD sectors
 - 2028 - 2033 for the ED sector



In the early design process for RIIO-2, we reviewed the RIIO-1 outcomes as well as studies and assessments of RIIO-1 and other price controls. These are the key changes we made to the design of RIIO-2, to embed learnings:



The 8-year price control was deemed to be too long as it delayed adaptation of regulation, so the decision was taken to **move to 5-year price controls** in RIIO-2



We **introduced Price Control Deliverables (PCDs)** to link allowances to the delivery of outputs. This ensures that consumers are refunded if these are not carried out.



We **calibrated incentives** to reward companies for going beyond BAU. We also introduced new outputs that were not incentivised as part of RIIO-1.



A **more demanding totex efficiency challenge** was put in place for RIIO-2 (1% up from an average of 0.8% a year in RIIO-1) to reflect productivity advances



We **lowered the totex cost sharing factors** to more closely align with the level of confidence we have in our cost benchmarks



Greater emphasis was placed on the **use of uncertainty mechanisms** to flex totex as the need and cost of work becomes clearer during the price control period, rather than risk awarding inflated ex ante allowances.



A symmetrical **return adjustment mechanism** was introduced to control returns in light of double digit returns for several companies in RIIO-1



We made **greater use of indexation to observable indices** for both input prices (such as wages) and risk free interest rates, so allowances reflect company costs as they vary over RIIO-2. We also decided to **annually index the two main components of WACC allowances** (debt and equity allowances), with allowances changing as market rates change.



We **reduced the cost of equity allowance** from 7.8% in RIIO-1 to 4.25% (at 55% gearing) in ET2 and 4.55% GT2 and GD2 (at 60% gearing), and 5.23% in ED2 (at 60% gearing).



Need to apply simplification where possible, removing duplication between price control mechanisms or where they are deemed to offer little value



More focus is required on resilience of all types to ensure networks are well placed to withstand the challenges of the future



In the ET sector, RIIO-3 needs to build on the ASTI framework so that agile funding mechanisms are in place to deliver timely funding of new network capacity

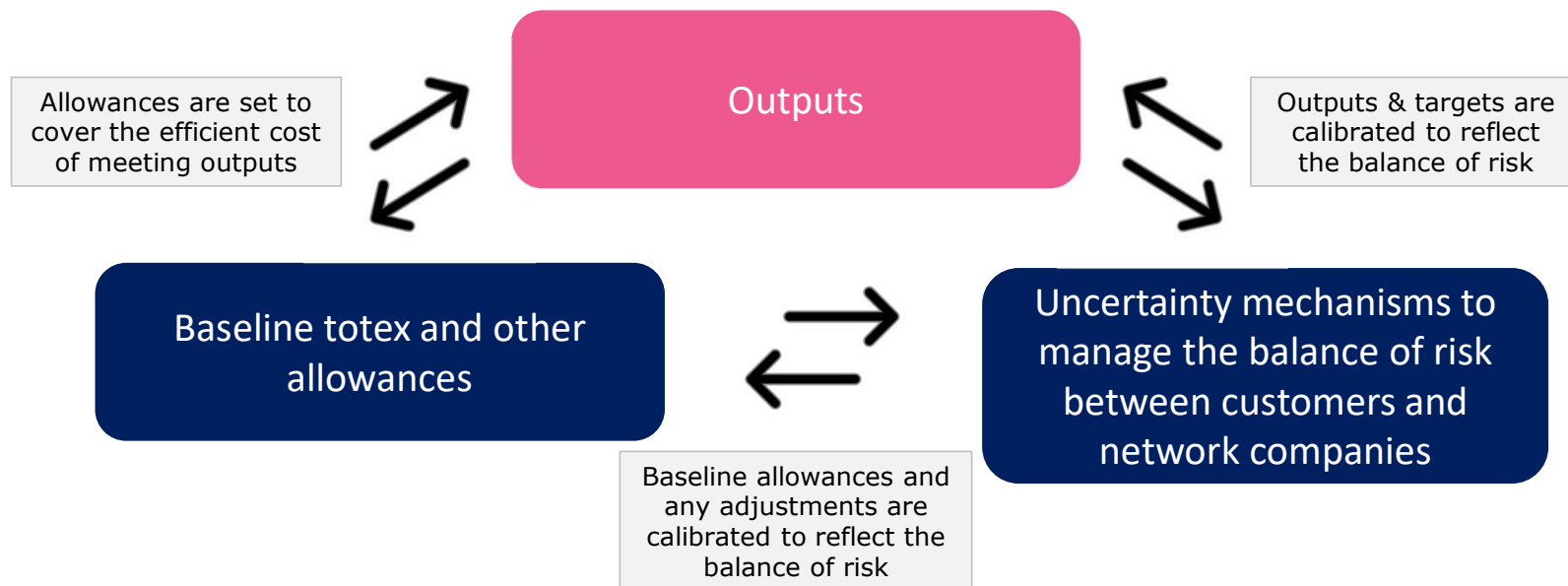


There is scope to streamline elements of the stakeholder engagement and business planning process to reduce the regulatory burden on both companies and Ofgem

The building blocks of the RIIO price control and the role of incentives in the regulatory framework

RIIO is a complex price control framework made up of interlocking decisions that come together to create an integrated price control package that delivers for consumers now and in the future, users of the distribution networks and network companies.

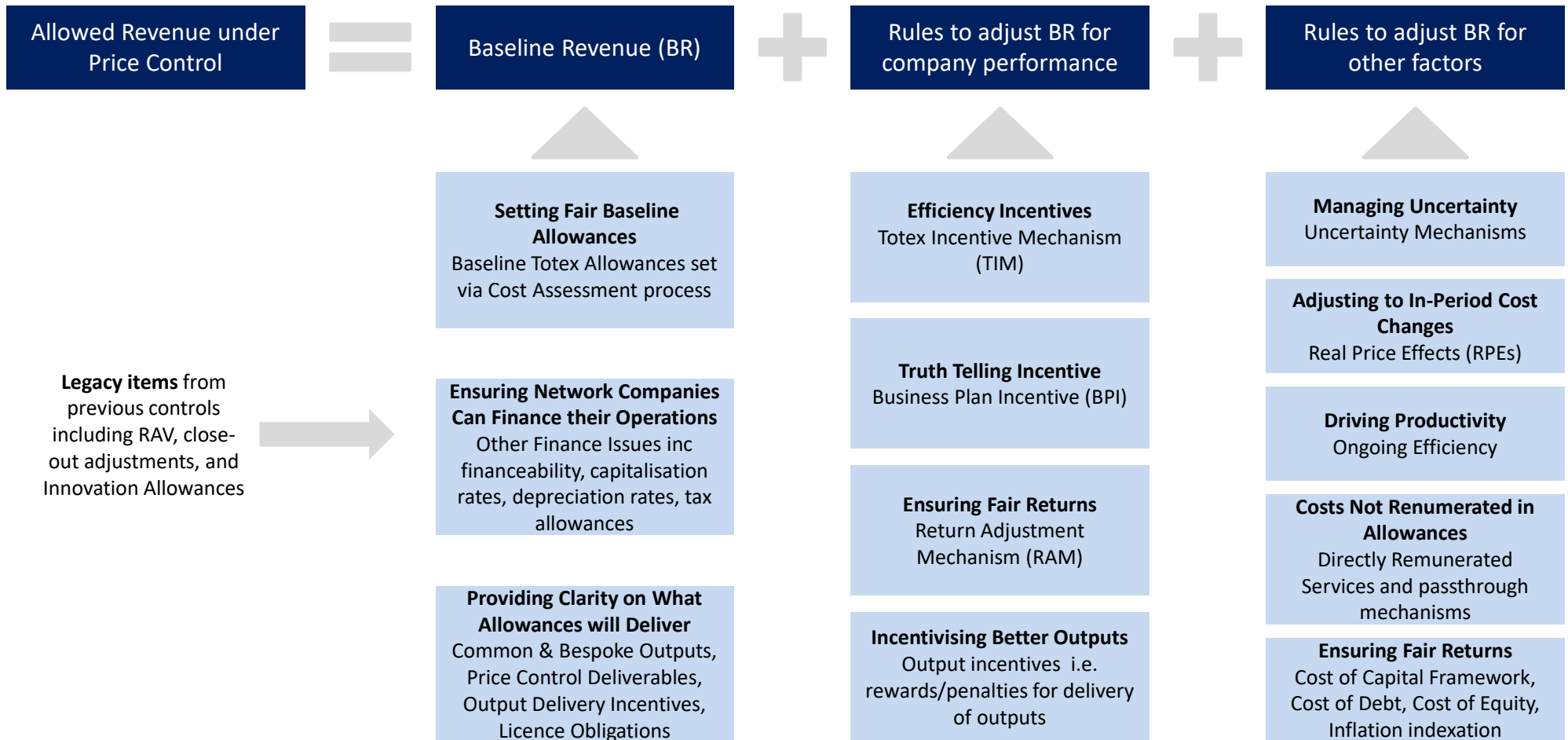
The price control package is a system made up of three distinct but closely linked pillars. The intrinsic links between these three pillars mean that each of them affects and is affected by decisions taken in relation to the other two pillars.



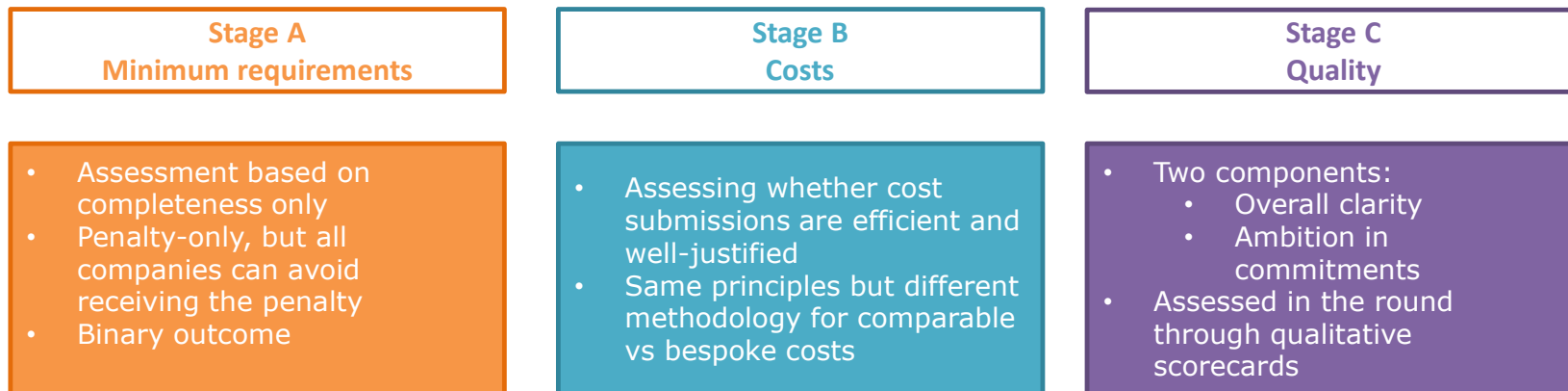
- Under RIIO, Ofgem asks network companies to submit well-justified **business plans** detailing how they intend to meet the RIIO framework objectives.
- RIIO places a strong emphasis on stakeholder engagement and companies must obtain stakeholder input and demonstrate how this has been used to develop their plans.
- In their business plans the network companies submit their forecasts on the costs for operating the core parts of their business. Ofgem then assesses these costs and sets a baseline revenue.
- A company's baseline revenue can be adjusted during the price control period either based on its performance e.g. by earning rewards or penalties for specific incentives, or based on other factors e.g. uncertainty mechanisms.
- Network companies are allowed to recover this revenue from consumer bills, through the duration of the price control.



The high-level framework is underpinned by a number of price control building blocks



- We use a Business Plan Incentive (BPI) to encourage the submission of high quality and ambitious business plans.
- Business plan guidance has evolved from RIIO-2
 - Introduction of a single net zero FES pathway for all networks
 - Evolution of 'challenge' and 'user' groups to Independent Stakeholder Groups (ISGs)
 - Introduction of specific requirements in respect of Climate Resilience strategies
 - Significant changes to Engineering Justification Paper (EJP) guidance
 - New requirement for an overarching Network Asset Management Strategy
 - Simplified, clearer submission guidance (e.g. list of annexes with page limits)
 - Simplified and more in the round assessment of plans for the purposes of the BPI



Our Business Plan Guidance outlines the areas in which companies need to set out their proposed outputs and related expenditure (eg load, environment, asset resilience, cyber, innovation, IT). Where Ofgem deems it important to stipulate that a specific output is delivered we use three types of output mechanisms:

- **Licence Obligations** – set minimum standards that network companies must achieve
- **Price Control Deliverables (PCDs)** – specify the deliverable(s) for the funding allocated, and the mechanism(s) to refund consumers if an output is not delivered (or not delivered to a specified standard)
- **Output Delivery Incentives (ODIs)** – drive service improvement through reputational and financial incentives.

Outputs are further categorised as either '**common**' or '**bespoke**'.

- **Common outputs** apply to all sectors or all companies within a sector (eg all Gas Distribution Networks or all Transmission Owners). We use common outputs for areas of service quality that are relevant to all consumers in a sector or multiple sectors.
- Example cross-sector output:
 - Environmental action plans and annual environmental report
- **Bespoke outputs** are specific to individual companies and they seek to reflect their local needs.
- Example bespoke output:
 - Collaborative streetworks output delivery incentive – Cadent London and SGN Southern

Note: PCDs and ODIs are also covered by licence conditions.

Totex

- We fund network companies with totex allowances to deliver their outputs.
- Totex includes both capital expenditure ('capex') and operating expenditure ('opex'). It also includes replacement expenditure ('repex') in gas distribution.
- Totex is made up of **fast money** and **slow money**. Fast money allows network companies to recover a percentage of total expenditure within a one-year period, with the rest being capitalised into the regulated asset value (slow money).

Cost Assessment

- Cost assessment is the process by which we determine the ex ante totex allowances to be set. The approach may vary by sector but typically involves:
 - Assessment of **regional and company specific factors** which drive differentiation in cost
 - Regional - eg labour costs
 - Company – eg network-specific factors
 - Top-down totex and/or bottom-up disaggregated **benchmarking** to compare costs between companies within a sector
 - Technically assessed costs where costs cannot be benchmarked to assess whether they are value for money
- Allowances will typically be allocated to cost categories (load, network operating costs) but fungibility will be allowed unless controls have been put in place so spend is limited to a specific requirement.

- Financial **Output Delivery Incentives** (ODI-Fs) are put in place to signal to companies areas in which we want to drive improved output performance for consumers
 - We calibrate incentives to reward companies for going beyond business as usual, using historical performance to set targets.
- In RIIO-2 there are common 7 ODI-Fs in both ET and ED, 7 in GT and 3 common and 3 bespoke in GD.
- The common ODI RoRE ranges for RIIO-2 are:
 - **ET:** +0.22-0.47%/-0.67-0.74 RoRE depending on the company (this excludes ASTI incentives)
 - **GT:** +0.59%/-0.69%
 - **GD:** + 0.24-0.26/-0.55-0.69% RoRE depending on company
 - **ED2:** +2.65%/-4%
- There is also an ODI-F component to NARM, an output measure designed for the purpose of setting outputs and allowances associated with certain asset management activities. The NARM Funding Adjustment and Penalty Mechanism applies in all sectors.
 - We want to ensure that network companies continue to be incentivised to deliver their NARM outputs efficiently. This includes clawing back funding and issuing penalties for unjustified under-delivery, as well as routes to additional funding for justified over-delivery.

Example: the RIIO-ED2 Output Delivery Incentive Package

ODI-F name	Purpose	New or existing ED1 incentive	Incentive Rate as % RoRE
Customer Satisfaction Survey	Encourage DNOs to improve the quality of customer service	Existing	+0.40% / -0.40%
Complaints Metric	Ensure good performance from DNOs when handling complaints	Existing	0% / -0.20%
Time to Connect	Incentivise DNOs to reduce the time it takes to connect minor connection customers to the network	Existing	+0.15% / -0.15%
Major Connections	Ensure DNOs provide quality service to major customers seeking to connect to the network	New	0% / -0.35%
Interruptions Incentive Scheme (IIS)	Incentivise DNOs to improve network reliability and reduce outages	Existing	+1.50% / -2.50%
Vulnerability	Incentivise the provision of appropriate support services to consumers in vulnerable situations	New	+0.20% / -0.20%
DSO	Drive DNOs to more efficiently develop and use their networks, considering flexible and smart alternatives to network reinforcement	New	+0.40% / -0.20%

Uncertainty mechanisms allow Ofgem to adjust a licensee's allowances (either up or down) in response to changing circumstances during the price control period. There are five main types of licence-based uncertainty mechanisms that we use in RIIO-2 and which we will continue using in the RIIO-3 price control:

Pass-through

to adjust allowances for costs incurred by the network companies over which they have limited control, e.g. business rates

Indexation

to provide network companies and consumers with protection against the risk that outturn prices are different to those that were forecasted when setting the price control, e.g. general price inflation or sector specific cost pressures

Volume drivers

to adjust allowances in line with actual volumes where the volume of work required over the price control is uncertain (but where the cost of each unit is stable)

Use-it-or-lose-it allowance

to adjust allowances where the need for work has been identified, but the specific nature of work or costs are uncertain.

Re-opener mechanism

to decide whether changes in allowances are needed, e.g. to deliver a project or activity once there is more certainty on the needs case and costs

Financial Framework

- In the RIIO framework, we allow companies to recover efficiently incurred costs - and this includes the cost of the financial capital required to build and sustain the networks.
- This investment is funded upfront by equity and debt capital and is repaid to investors slowly over time via the 'regulatory depreciation' charge in customer bills (typically over a 45-year period).
- Returns are set in 'real' or inflation-stripped terms. Investors earn the inflationary element of their return via the annual indexation of the RAV value to outturn inflation.

Weighted Average Cost of Capital (WACC)

Cost of Equity:

- The cost of equity cannot be observed in advance, and so must be estimated. Regulators use the Capital Asset Pricing Model (CAPM) to do this, but may 'cross check' this estimate with other information to ensure that their allowed return is appropriate.
- We generally assume that the allowed return = cost of equity. However, if there is skew in the overall package, we may adjust allowed return up or down so that expected return = cost of equity.

Cost of Debt

- The cost of debt can be observed directly, but choices remain as to what costs to take into consideration (eg, we generally do not count derivative costs), how to factor in future debt needs and how to assess a reasonable allowance across the sector(s).
- The treatment of inflation is a key topic for Ofgem in this price control as GEMA previously agreed that we should look to remove the 'inflation leverage effect' (the benefit that can be received by companies/equity investors if they have fixed rate debt and inflation is higher than expected). This may involve splitting the indexation of the RAV in future years – a major change.

Gearing

- Gearing is the weight of debt within the capital structure. In the price controls we set a 'notional' capital structure and apply this to all relevant companies when setting returns and testing financeability.
- Doing this helps to ensure that consumers are not directly exposed to the financing decisions of individual networks.

- **Capitalisation rates:** the proportion of costs added to the **Regulatory Asset Value (RAV)** and paid by consumers over time (**slow money**), rather than paid within the year incurred (**fast money**).
 - In general, the regulatory capitalisation rate broadly reflects the split of capital expenditure (capex) and operating expenditure (opex) expected over the price control. Setting this rate accurately ensures that charges over time are fair to both existing and future consumers.
- **Depreciation rates:** Regulatory depreciation is comprised of an assumed asset life (or lives) and an assumption of the profile(s) of usage across the asset life (or lives). The regulatory depreciation assumptions determine the speed that RAV additions are paid for by consumers as part of the return of capital to investors.
 - In all sectors the current assumption is 45 years.
- **Tax allowances:** A financial model is used to calculate a tax allowance on the basis of an efficient company with a notional capital structure, as a proxy for efficient corporation tax costs for each of the relevant licensees. Uncertainty mechanisms are also put in place to adjust to changes in tax rates, legislation and accounting standards.
- **Financeability** Ofgem has a **statutory duty** to have regard to the need to secure that companies are able to finance the activities which are the subject of obligations imposed by or under the relevant legislation. The assessments we perform to discharge this duty are known as assessments of 'financeability'.
 - We assess the financeability of energy networks on the basis of an efficient licensee adopting the notional capital structure. This approach is critical to ensuring that consumers are protected from risk associated with actual financing decisions that licensees and their shareholders have made. We consider it appropriate that the risks and rewards arising from financing decisions reside with equity investors.