Economic regulation in Abu Dhabi and Great Britain with insights for electricity distribution regulators elsewhere

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Agenda

A	Economic regulation in Abu Dhabi
B	Economic regulation in GB
C	Abu Dhabi vs GB
D	Key insights for global regulators

A

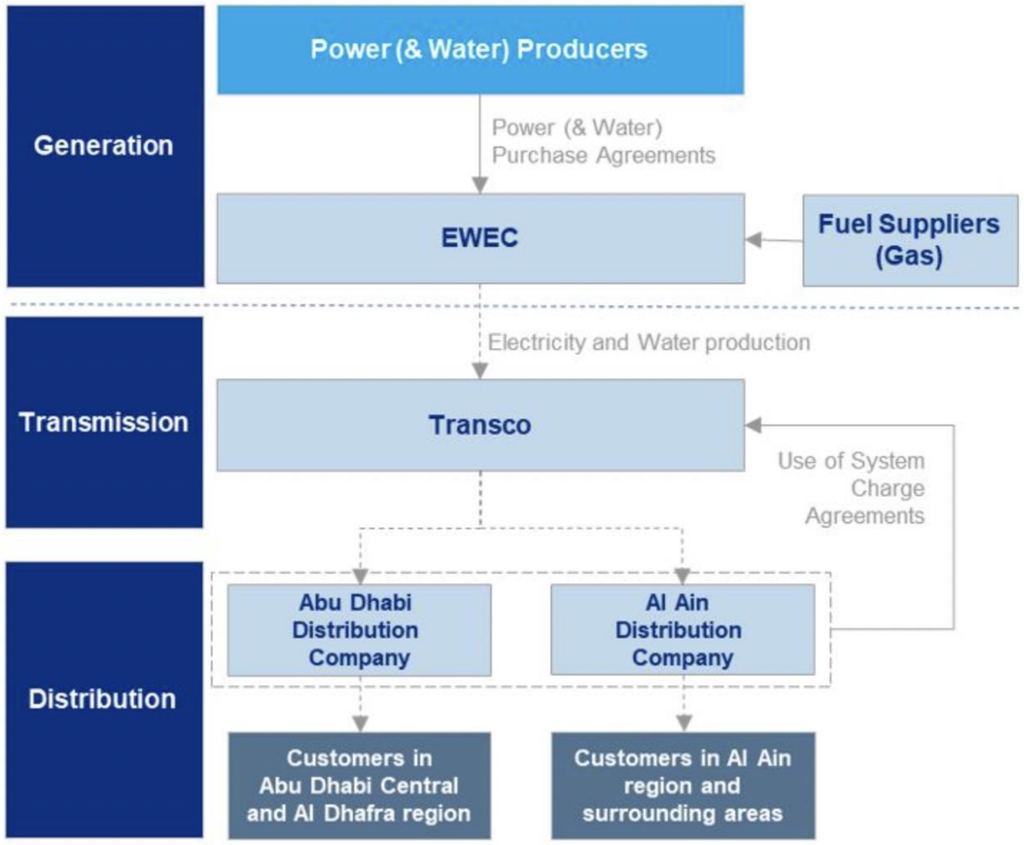
Economic regulation in Abu Dhabi

Background

SECTOR STRUCTURE

- The Law No. 2 of 1998 established a new structure for the Abu Dhabi water and electricity sector, which came into existence and went into effect on 1 January 1999.
- The sector is:
    - privatised and adopted a 'single-buyer' model with Al Ain Distribution Company (AADC), Abu Dhabi Transmission and Despatch Company (TRANSCO), Abu Dhabi Distribution Company (ADDC) and Al Ain Distribution Company (AADC) as monopoly companies.
    - regulated by the Department of Energy (DoE) who implements price controls by which capping the monopoly companies' revenues.
- The current regulatory control (RC) operates for a four year period from January 2023 to December 2026 (RC2).
- Prior to RC, DoE typically set price controls for four-year periods, aside from PC2 (Price Control 2), which was set for a three-year period, as shown below.

PC1	PC2	PC3	PC4	PC5	RC1	RC2
1999-2002	2003-2005	2006-2009	2010-2013	2014-2017	2018-2022	2023-2026



Source: EWEC

Background

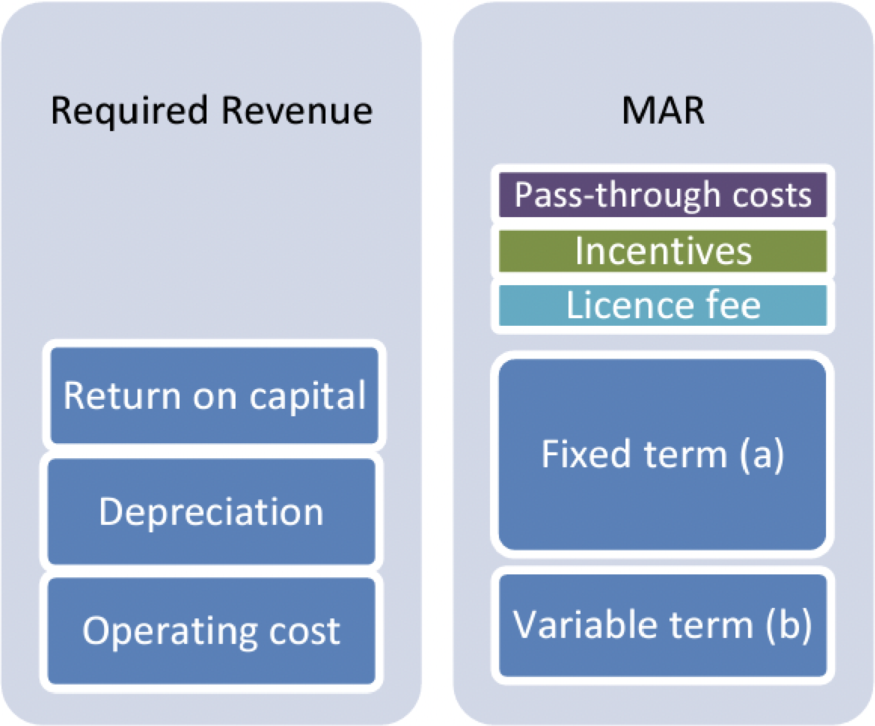
FIRST REGULATORY CONTROL (RC1)

- DoE reviewed the price controls of the monopoly companies and RC1 took effect from 1 January 2018
  - RC1 imposed a CPI-X revenue cap for all companies
  - RC1 utilised a “building-block” approach to determine the **maximum allowed revenue** (MAR)

Required revenue = Opex + Depreciation + Return on capital + PC4 and PC5 additional efficient capex financing costs foregone

Where:

- Operating expenditure (Opex) refers to operating costs excluding depreciation.
- Depreciation is calculated using a straight-line method and an assumed average asset life separately in respect of the initial RAV (at the time of first control setting) and each year’s Capex during PC1 to PC5 and extended life for Capex during RC1.
- Return on capital in any year is calculated by multiplying the mid-year average of opening and closing RAVs in that year by the cost of capital. For each year, the closing RAV is determined by adding the efficient Capex incurred in that year to, and subtracting the depreciation from, the opening RAV.
- NPV of the foregone financing costs in respect of the additional efficient PC4 and PC5 Capex, are applied to the NPV of the required revenue over the RC1 period.
- The projected MAR for each year of the control period is calculated using the revenue driver projections, appropriate weightings for the fixed and variable terms, and an appropriate ‘X’ factor. The values of ‘a’ and ‘b’ are then calculated by setting the NPV of the projected MARs equal to the NPV of required revenues over the control period using the estimated cost of capital as (sic) the discount rate.



Source: RC1

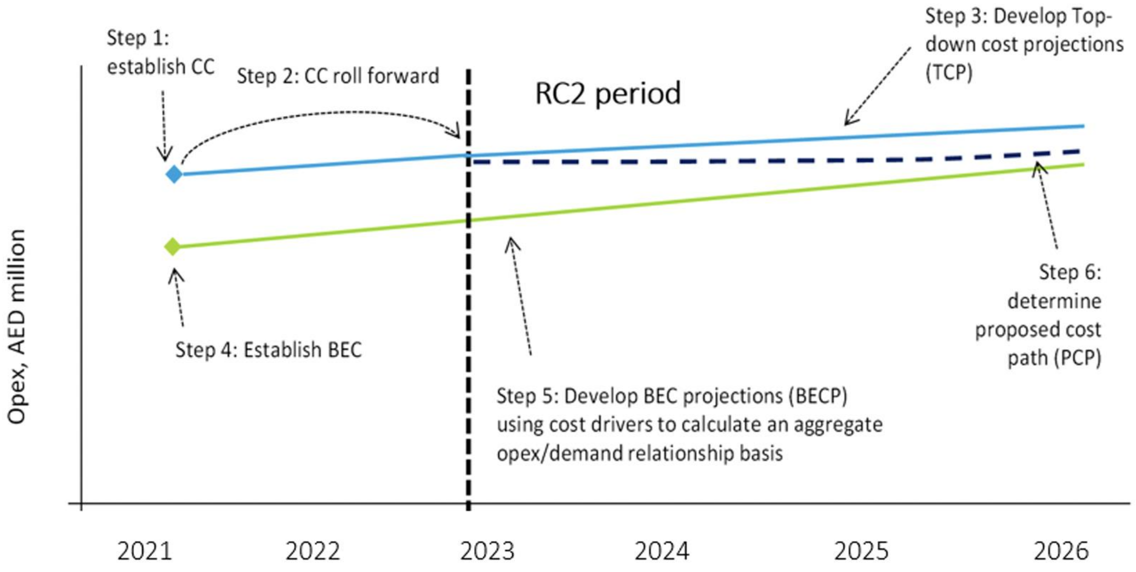
Regulatory Controls for 2023 to 2026

SECOND REGULATORY CONTROL (RC2)

RC2 final decisions is to:

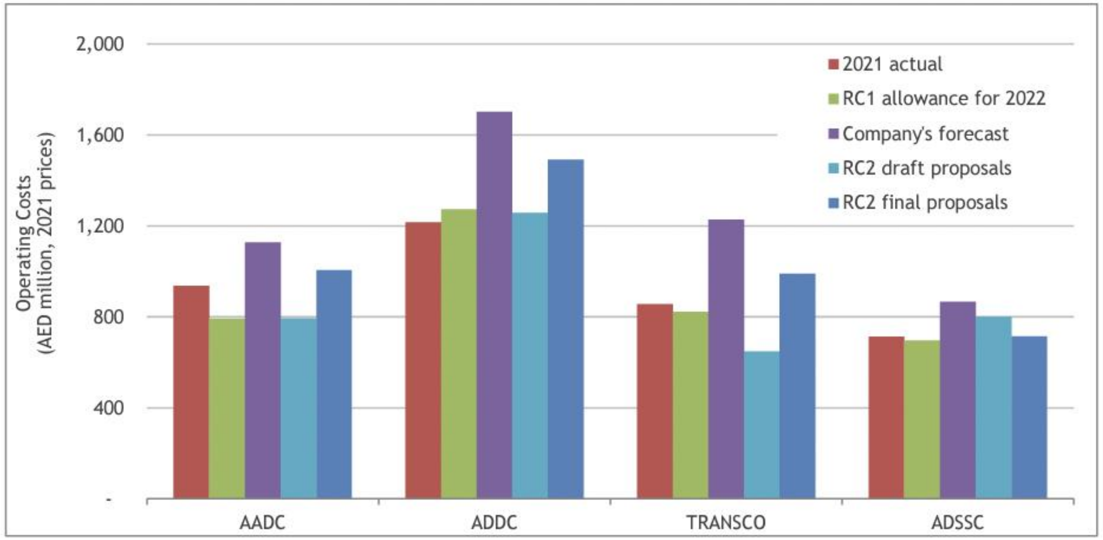
- continue to use CPI-X revenue cap form of controls for all companies;
- retaining the current scope and separation of price controls for all companies but removing the SO function and related cost allowances from TRANSCO's price controls;
- use zero X factor for all businesses;
- not introducing OBR or totex;
- retaining the existing cost pass-through arrangements for all businesses;
- structuring the MAR formula for each company with a fixed element and a variable element linked to the output-based revenue driver

Consultant's approach to RC2 opex projections



Source: Deloitte's final Report, November 2022

RC2 average annual opex projections - final decision's comparison



Source: RC2

Incentives in Abu Dhabi

Annex 4A - Performance reporting	Type	AADC (E)	ADDC (E)	TRANSCO (E)
SBAs/PCRs - timeliness and compliance	Financial	✓	✓	✓
Financial performance ratios	Reporting	✓	✓	✓
Total demand forecasting accuracy	Reporting	☑	☑	
Annex 4B - Quality of supply				
System Average Interruption Duration Index	Financial	✓	✓	
System Average Interruption Frequency Index	Financial	✓	✓	
Transmission system availability	Reporting			✓
Unsupplied energy	Financial			✓
Annex 4C - Network performance				
Interface metering (electricity & water)	Financial	✓	✓	
Distribution loss reduction	Financial	✓	✓	
Annex 4D - Customer service				
Customer complaints	Financial	✓	✓	
Customer satisfaction	Financial	☑	☑	
Annex 4E - Sustainability				
Demand side management	Financial	☑	☑	
Total number of incentives for RC2	**All**	**10**	**10**	**4**

"✓" represents an incentive introduced prior to RC2; "☑" represents a new incentive proposed for RC2

Source: [RC2]

B

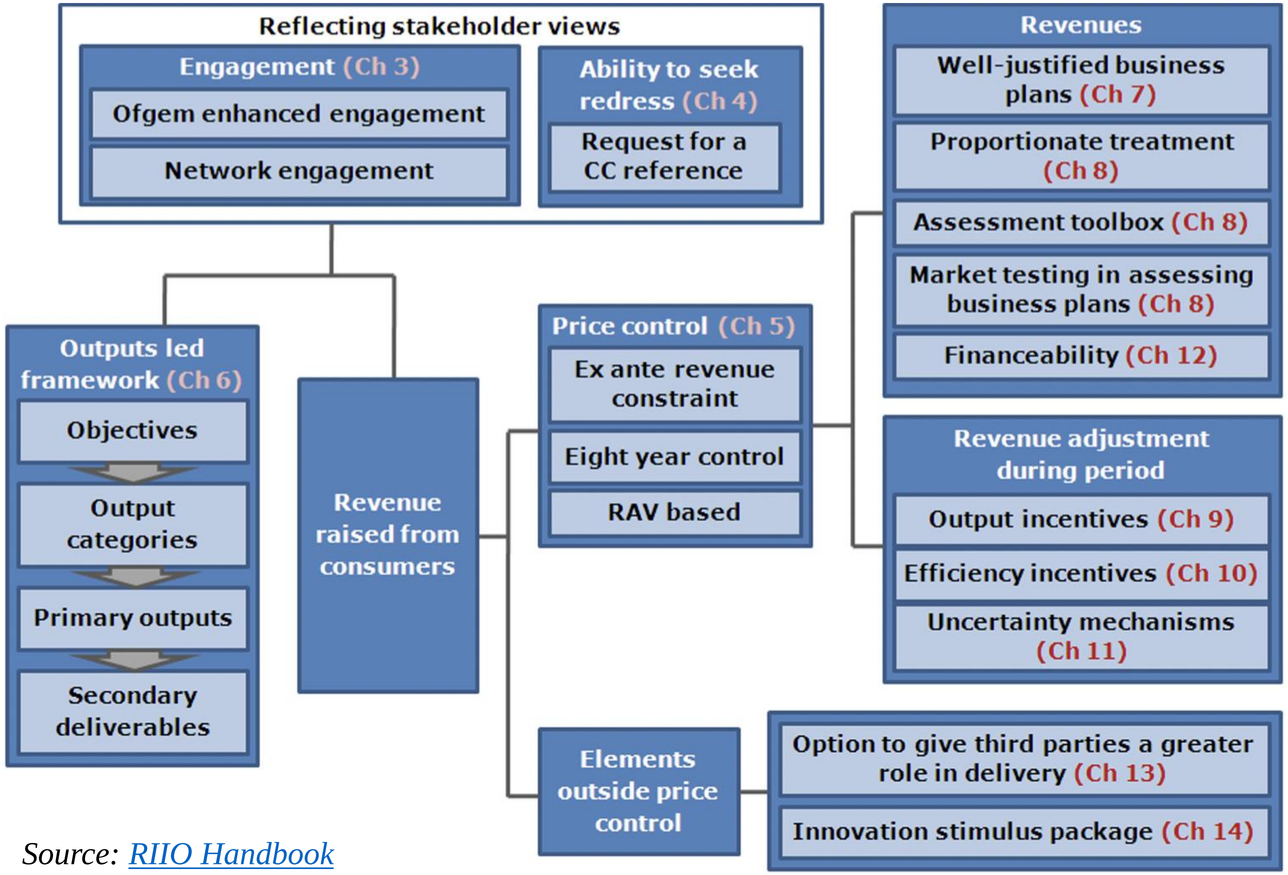
Economic regulation in GB

Background

RIIO-1

- **RIIO**: Ofgem sets **R**evenues using **I**ncentives to deliver **I**nnovation and **O**utputs
- **Control period:** Ofgem set an 8-year price controls for gas and electricity network companies in GB
- **Price control**: Ofgem cap network companies' revenues to strike a balance between consumers and suppliers' funds
- **Periodic reviews**: Ofgem conduct a mid-period review of output requirements for RIIO-T1 and look at certain outputs for National Grid Electricity Transmission and National Grid Gas Transmission.
- **Network innovation funding**: Ofgem provide funding for innovative projects which aim to help make the energy networks smarter, accelerate the development of a low carbon energy sector and deliver financial benefits to consumers
- **Environmental objectives**: RIIO model offers network companies incentives for innovation and securing investment, so they can develop sustainable energy networks at the lowest cost for current and future customers

RIIO model outlines the key elements that were used to determine the price controls



Source: *RIIO Handbook*

RIIO-2

FRAMEWORK

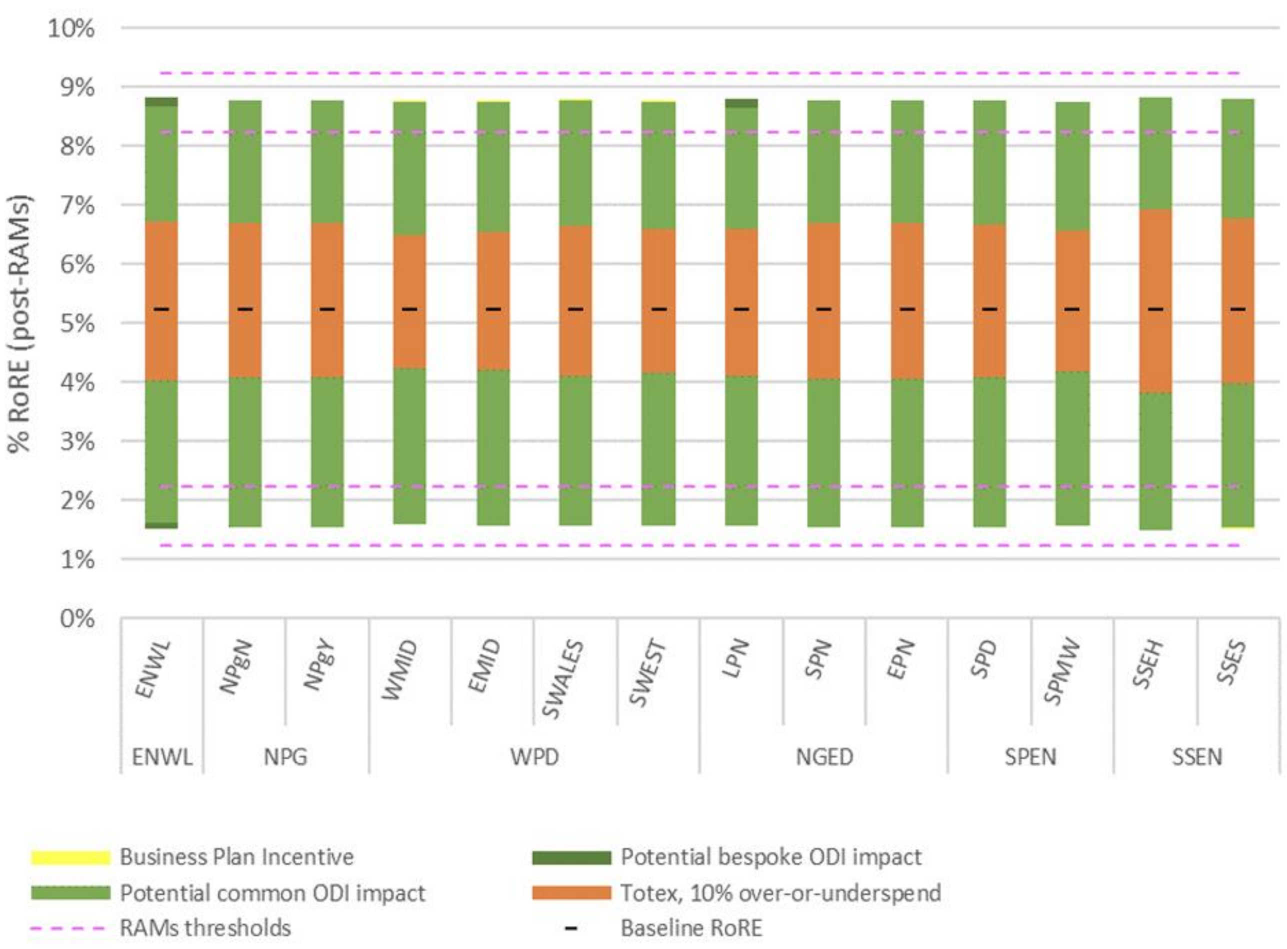
- **Shorter** (5-year) price control period for each sector
- Utilises **lower** totex sharing factor
- Uses **new** three-step process for cost of equity.
  - Step 1: CAPM
  - Step 2: cross checks
  - Step 3: expected performance
- Now **explicit** debt beta
- Decided **not to use a nominal** RAV (or return) for financeability
- Electricity distribution sector **did not appeal** financial aspects
- *Risk-free rate is updated each year to reflect outturn rates (**lowering forecasting risk**)

Parameter	Final determination
Risk-free rate forecast*	-1.58%
Total Market Returns	6.5%
Debt beta	0.075
Asset beta	0.349
Unlevered beta	0.311
Notional equity beta	0.759
CAPM implied cost of equity	4.55%

Source: RIIO-2 Final Determinations – Finance Annex

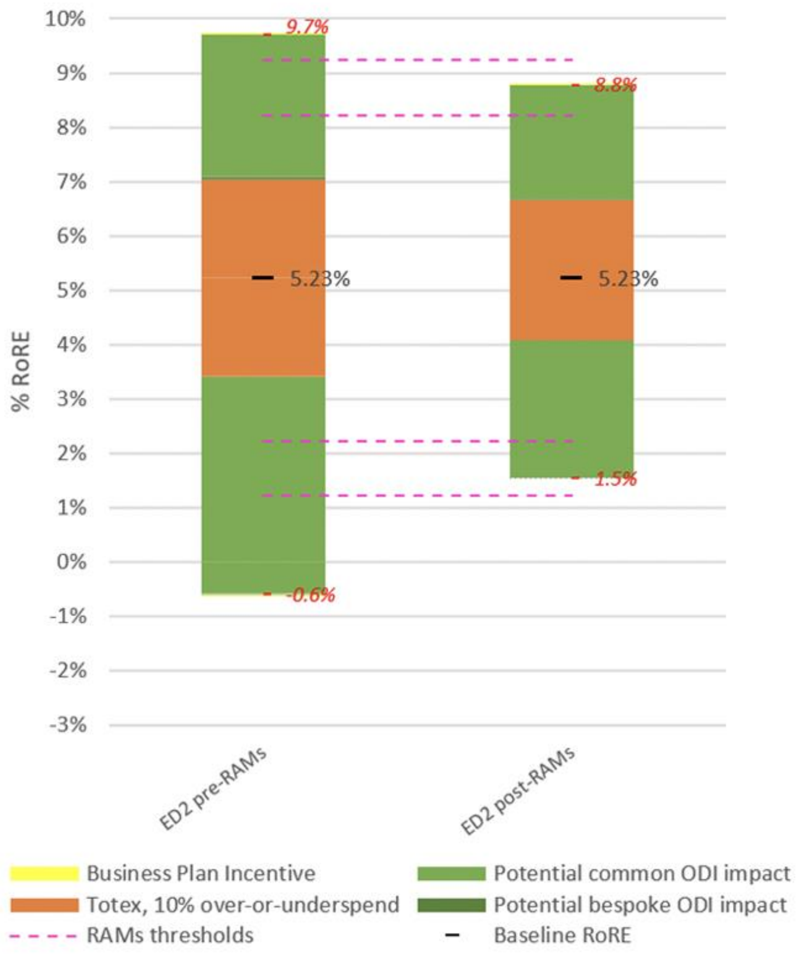
RIIO-ED2

RIIO-ED2 ex ante RoRE ranges (Post RAMs)



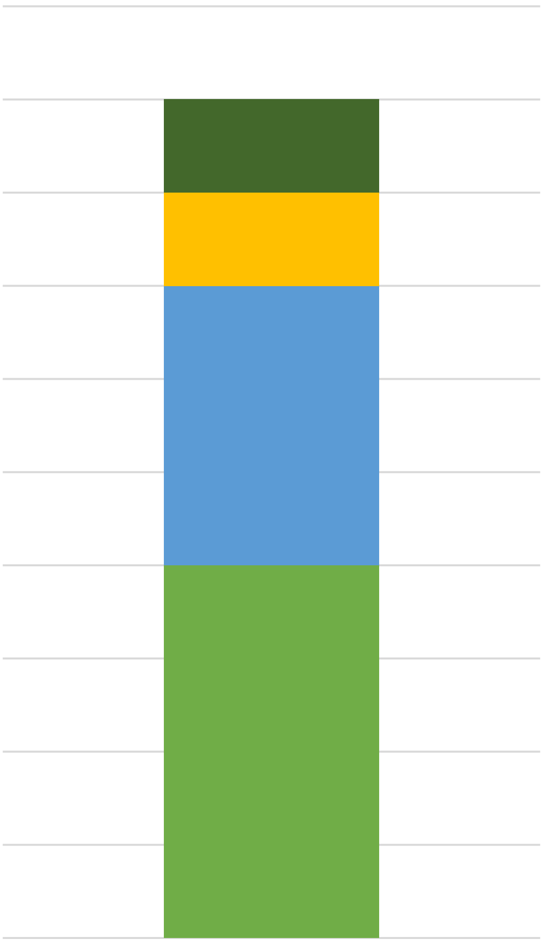
Source: [RIIO-2 Final Determinations – Finance Annex]

RoRE ranges, RIIO-ED2



Source: [RIIO-2 Final Determinations – Finance Annex]

RIIO-ED2: interruptions incentive(s)



Interruptions Incentive Scheme = Customer Interruptions + Customer Minutes Lost

IIS = CI + CML

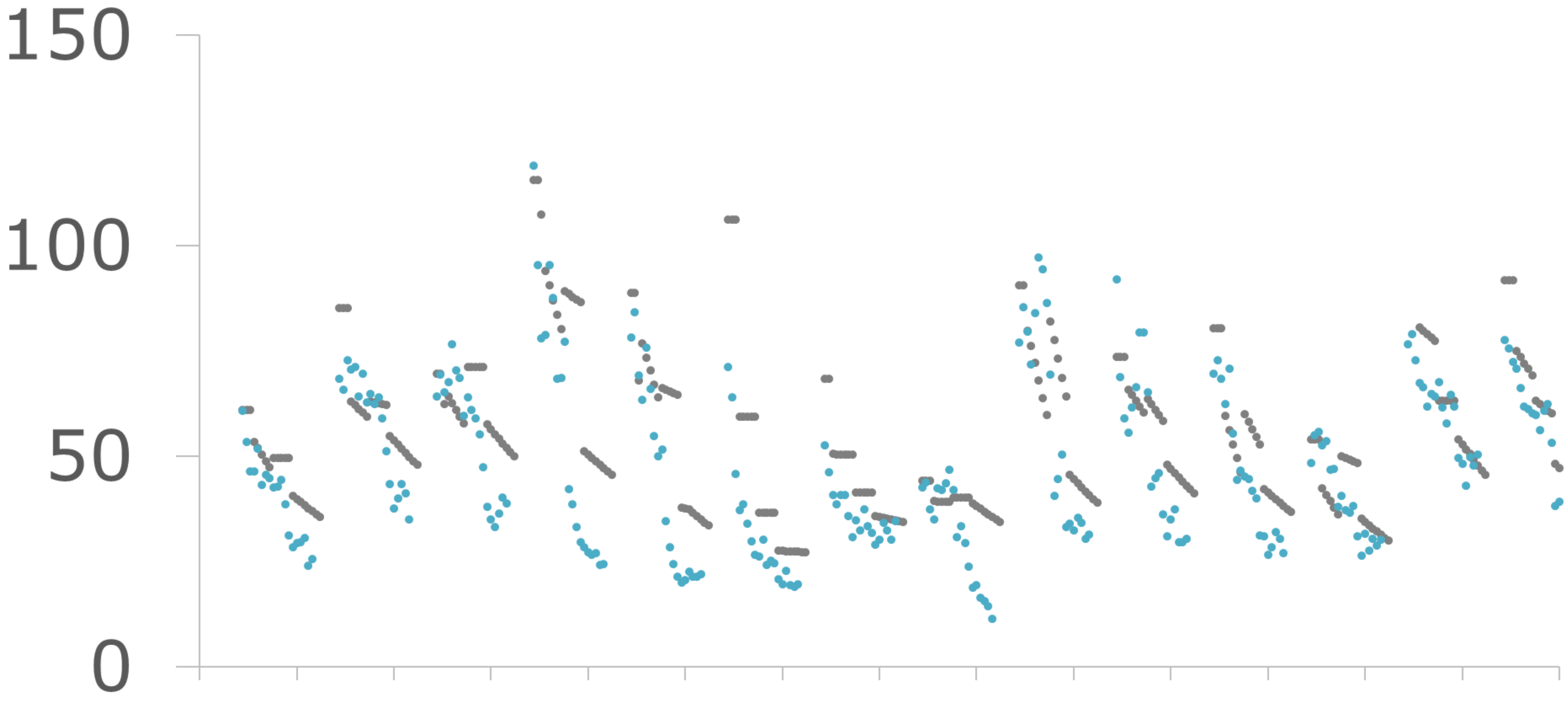
CI = Planned + Unplanned

CML = Planned + Unplanned

IIS = Planned CI + Unplanned CI + Planned CML + Unplanned CML

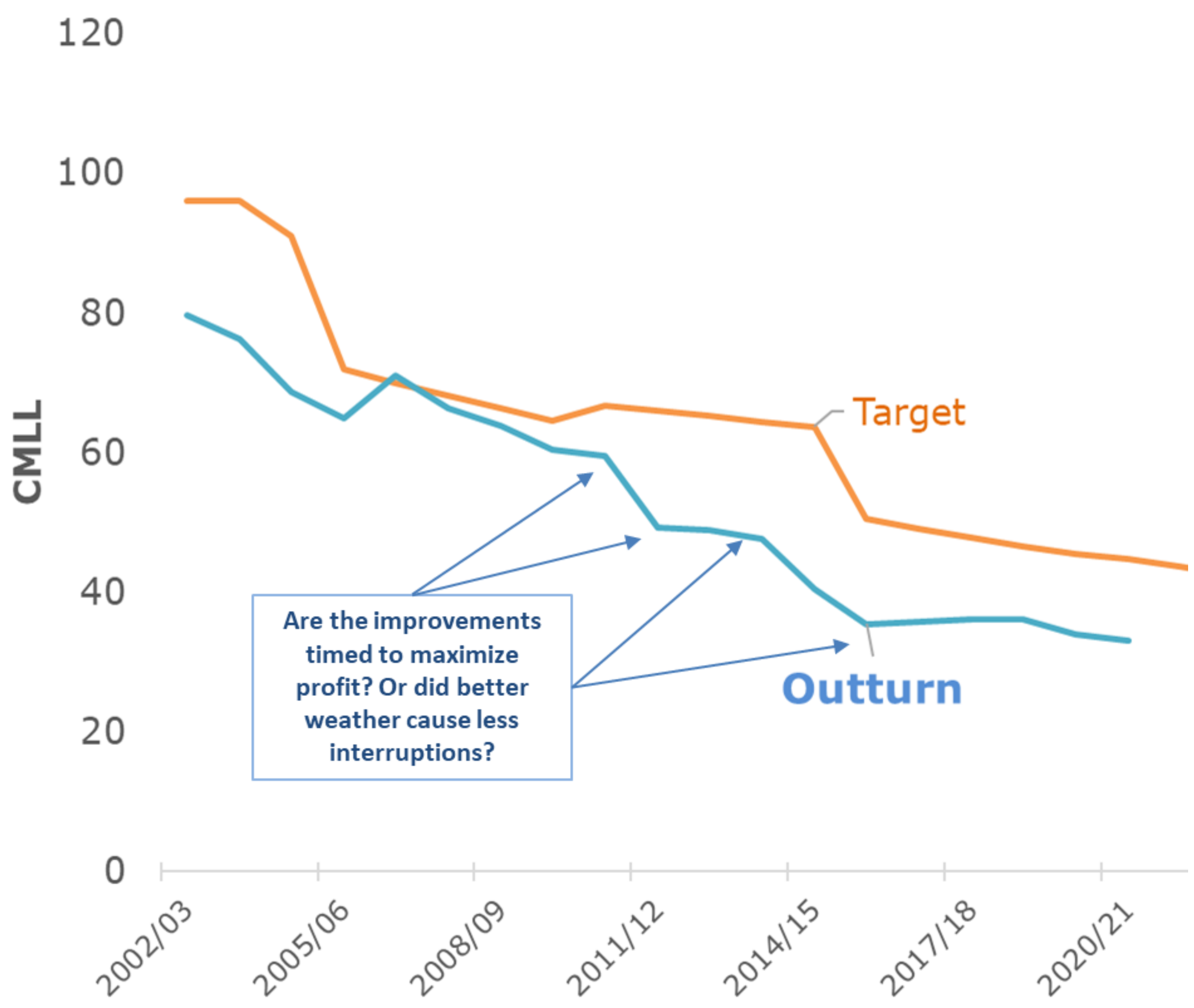
Source: Ofgem and MCC analysis

RIIO-ED2: 20 years of targets & outturns



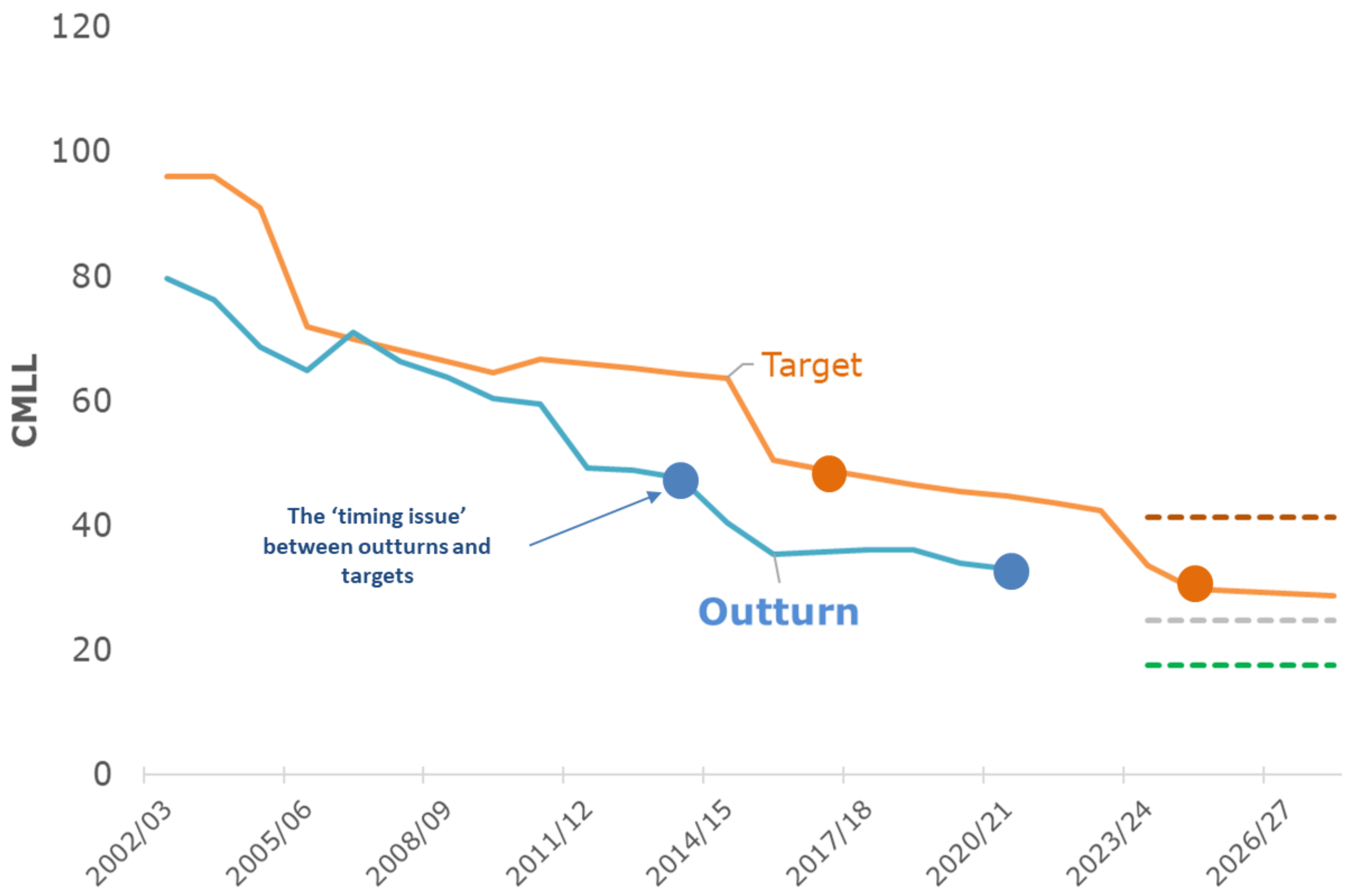
Source: *Ofgem and MCC analysis, company names intentionally removed from x-axis.*

RIIO-ED2: Delayed improvements?



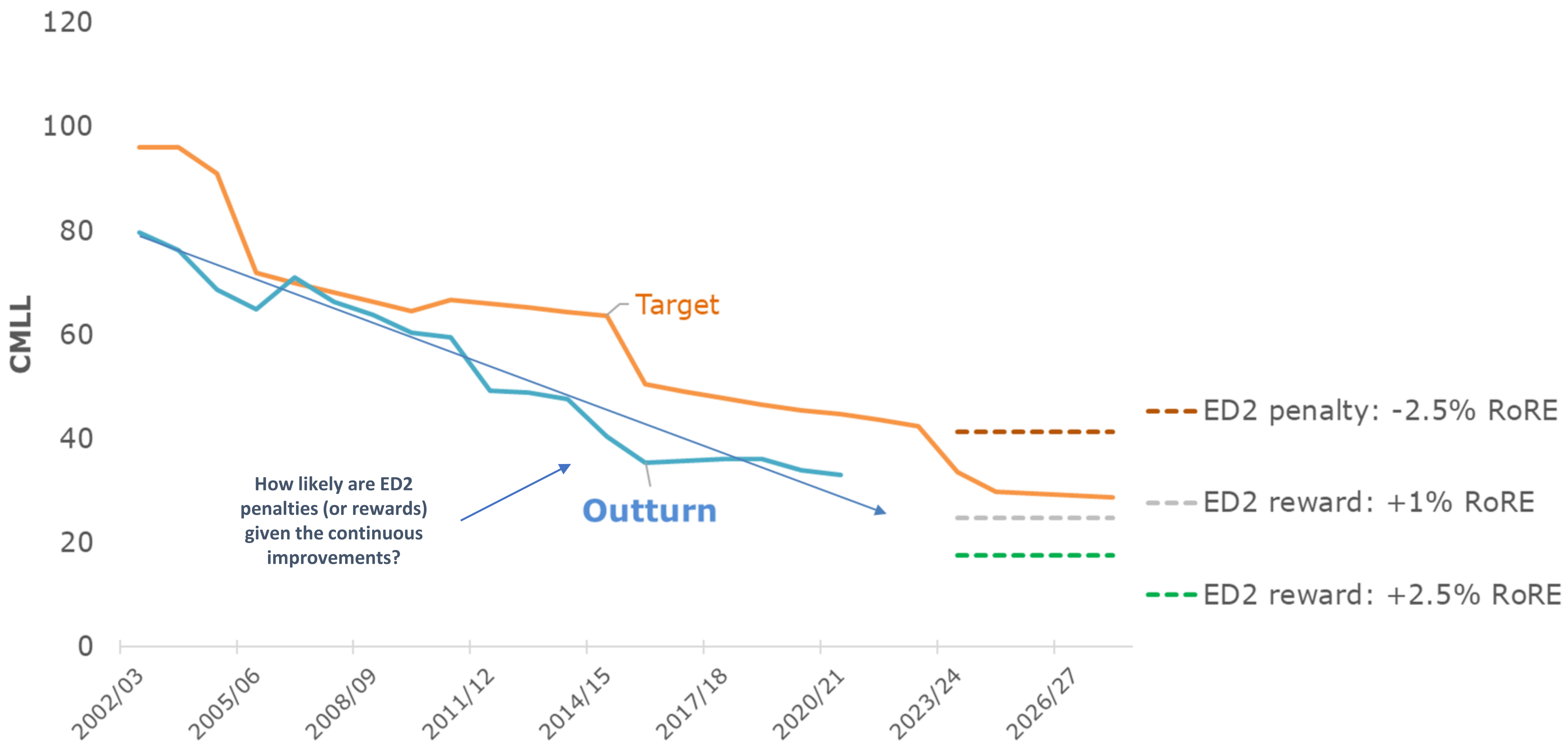
Source: Ofgem and MCC analysis, CML = Customer Minutes Lost, data shown on sector-level average basis for combination of 14 network companies

RIIO-ED2: Bad targets?



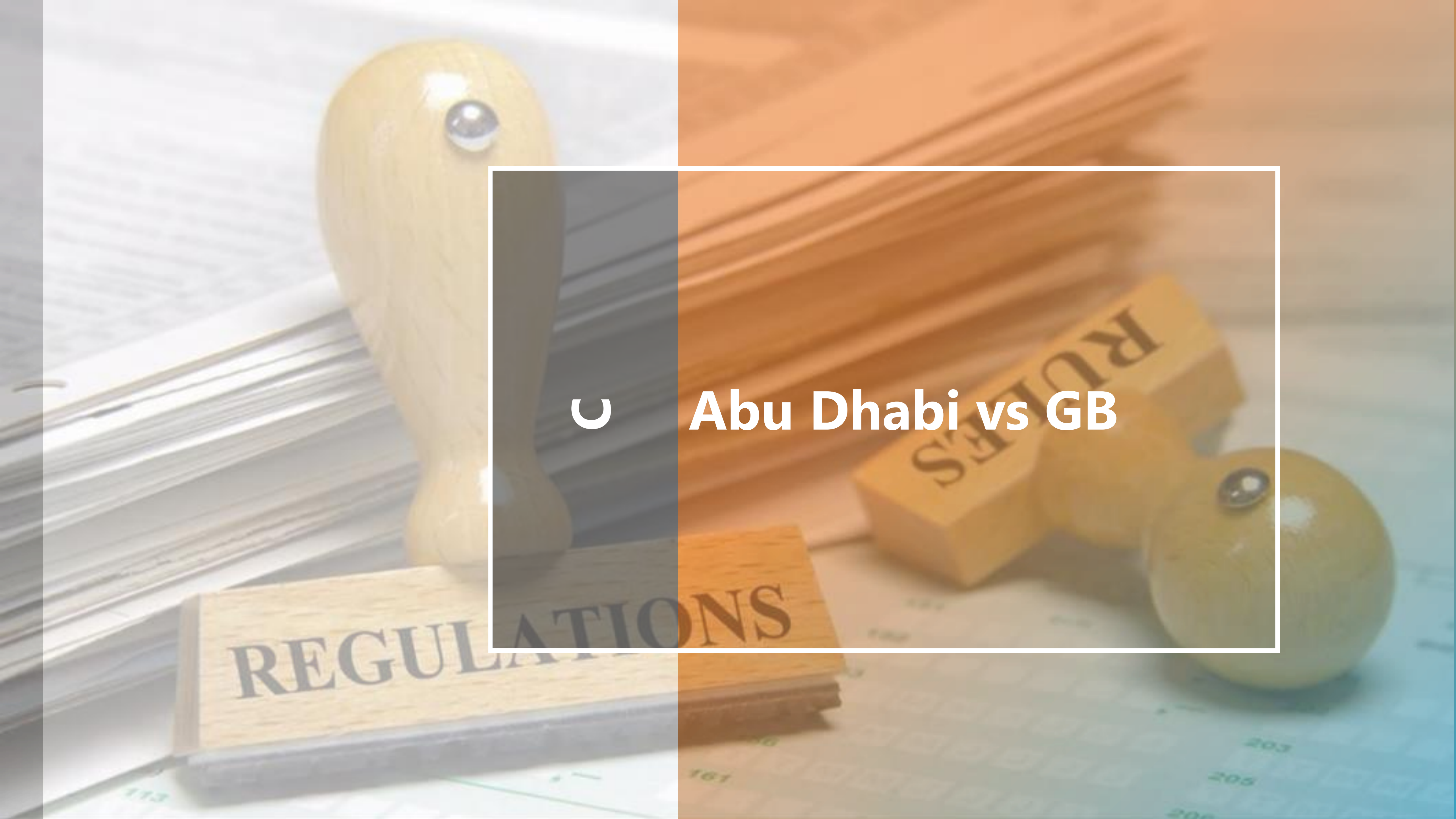
Source: Ofgem and MCC analysis, CML = Customer Minutes Lost, data shown on sector-level average basis for combination of 14 network companies

RIIO-ED2: How likely are rewards?



Source: Ofgem and MCC analysis, CML = Customer Minutes Lost, data shown on sector-level average basis for combination of 14 network companies

Abu Dhabi vs GB



Abu Dhabi vs the UK

Parameter	Abu Dhabi RC2	GB RIIO-2 (ED sector)
Control period	4 years (2023-2026)	5 years (2023-2028)
Update frequency	4 years	5 years
Equity beta	0.93 **	0.759
Real WACC	4.90%	~2.9% *
Benchmarking company focus	30 international transmission and distribution companies	SSE, NG, PNN, SVT and UU
Incentives	- Demand side management and distribution losses - Revenue capped	- No focus on demand side management or distribution losses - Equity tapered

*Risk-free rate and cost of debt allowance is updated each year to reflect outturn rates

** Decision not explicit but 0.93 was proposed by companies in response to regulator's draft proposals for 0.7 equity beta and 3.4% WACC

D

Key insights for global regulators

Key insights

Diverse regulatory models

- Abu Dhabi: closely related to government objectives
- GB: market oriented

Balancing government ownership

- Abu Dhabi's energy sector is government controlled
- GB's is privatised and competitive. In GB, Ofgem greatly reduced forecasting risks and returns, while this was not a major issue in Abu Dhabi.

Both have consumer centric approaches

Both have data transparency for stakeholders and consumers

Both incentivise investment

Impact on global energy network

- Abu Dhabi is a major oil producer
- GB has a larger natural gas and electricity market
- Their economic regulations have very different (direct and indirect) impacts

Both incentivise innovation towards sustainable energy

THANK YOU FOR YOUR ATTENTION!

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