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DEPARTMENT OF ENERGY

Price Controls for Utilities Businesses in Abu Dhabi

Arab Electricity Regulators Forum

December 2022

Water and Electricity Supply chain

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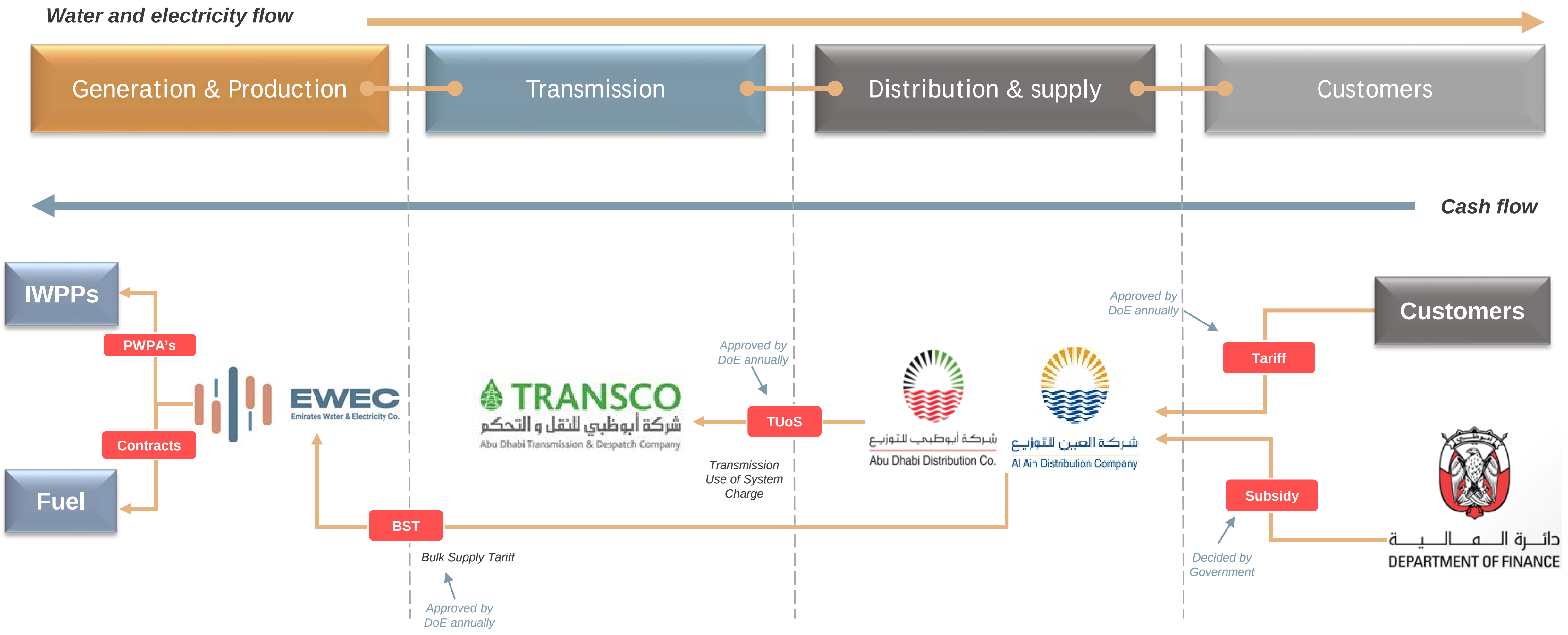
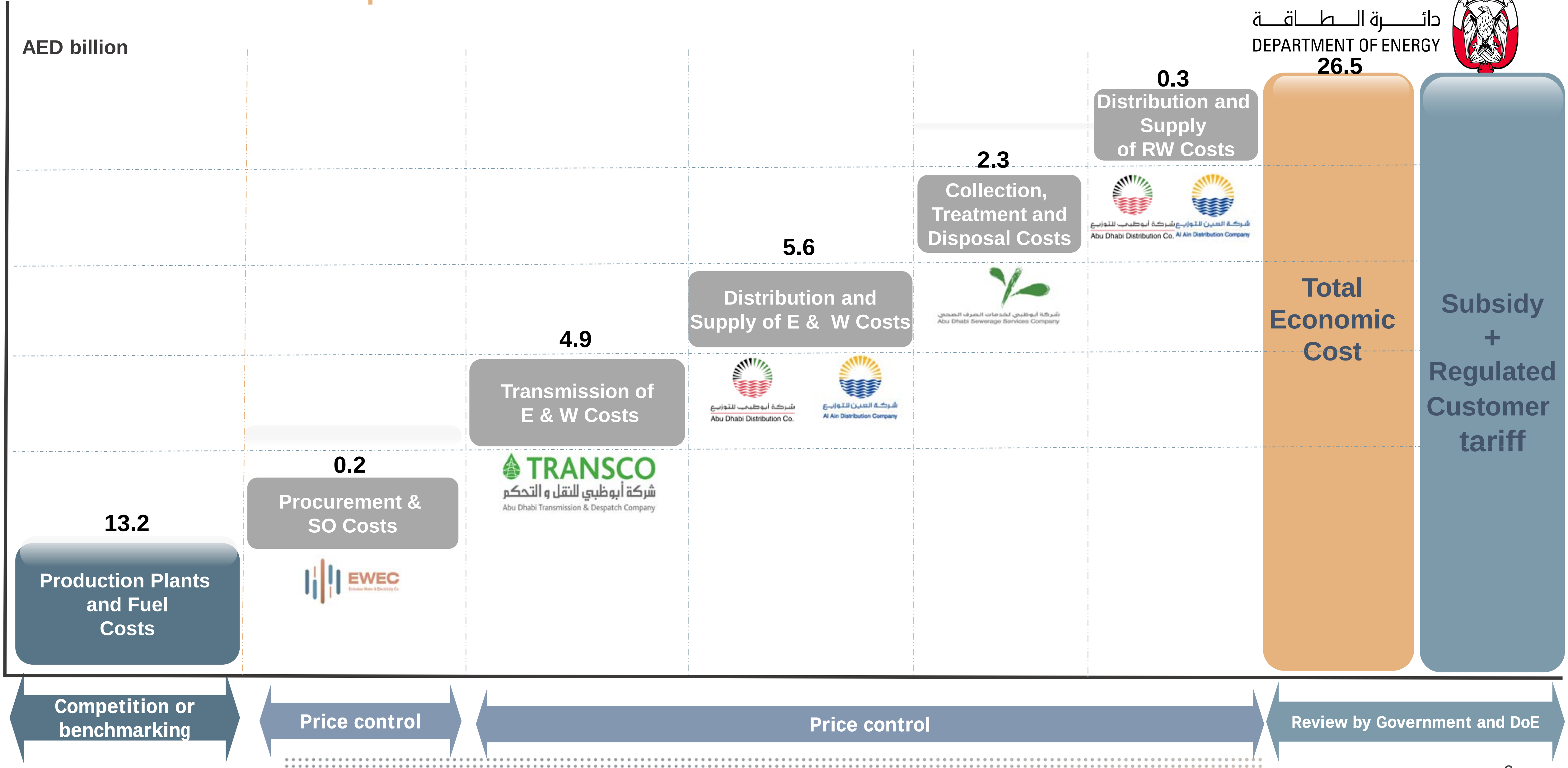


IWPPs: Independent Water and Power Producers
PWPA's: Power Water Purchase Agreements

What Costs are priced Controlled?



Objectives of Setting Revenue Cap for Energy Sector in Abu Dhabi

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1. Ensuring Sector Companies obtain financing for their operations, and attractive returns for investors

2. Motivating companies to improve the service provided to customers by setting performance incentives (bonuses and penalties).

3. Ensuring that customers are getting fair costs/prices for their services in addition to service reliability and security of supply.

Main Features of Price Controls

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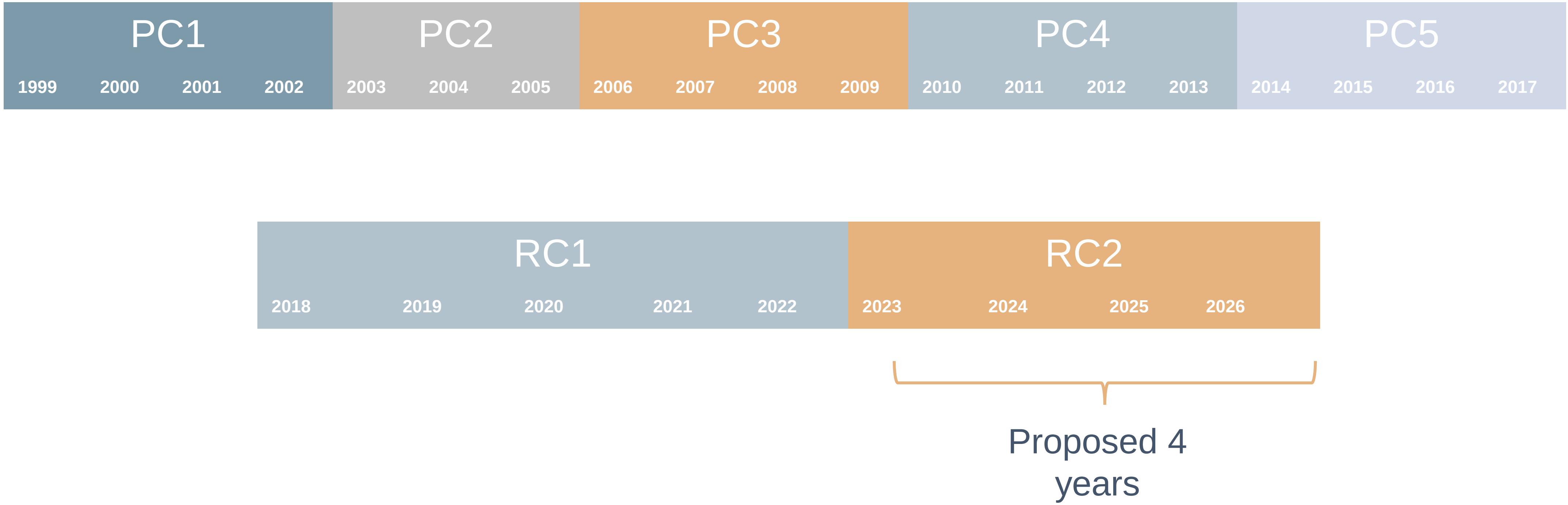
Type	*Duration*	*Variables*	*Separate Controls*	*Pass through*	*Capex allowances*
Revenue cap is of CPI-X type with revenue drivers	Price controls set for 3-4 years to promote certainty and efficiency incentives	Cap varies annually with inflation, demand and performance	Electricity, water , wastewater, and recycled water	Certain costs subject to upstream regulation (eg. BST, TUoS)	In RC1: Provisional capex with ex-post efficiency review RC2: approved capex with ex-ante assessment and limited ex-post review (with reporting the variances)

Ex-ante Capex Review: DoE capex review of the companies' planned schemes/projects, before capital expenditure is spent.

Ex-post Capex Review:: DoE capex review of companies' actual capital expenditure after it is spent.

Duration of Price Controls 1999-2026



Price Controls Framework

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For Discos:
Production costs - BST costs payable to EWEC treated on a pass-through basis
Transmission costs - TUoS costs payable to TRANSCO treated on a pass-through basis

Required Revenue

Opex

Depreciation of Capital Assets

Return on Capital

Maximum Allowed Revenue (MAR)

Pass through costs

Incentives

Fixed term (a) — 85%

Variable term (b) — 15%
- Customer accounts
- Global Peak Demand
- Metered units
- Wastewater treated

Actual Revenue

Large User Tariff

Standard Tariff

Customer Revenue

Shortfalls?

Govt. subsidy

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Thank you.

Why Price Controls and What they do?

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Monopolies Companies

Single buyer, transmission and distribution companies are natural monopolies – not subject to competition .

Give customers no choice to select their service provider.

Economics Regulation

Therefore, economics regulation (in the form of price controls) is needed to:

- ✓ control costs and prices;
- ✓ incentivize efficiency and performance, and;
- ✓ Protect customer interest.

Price Controls

Set forward-looking maximum allowed revenue (MAR) for multiple-years based on efficient costs;

Provide incentives for cost efficiency and improvement in performance and service quality; and

Provide funding for efficient costs and flexibility to manage uncertainties.

New Price Controls

The current price controls will end by the end of 2022 therefore a new price control is needed to set companies' maximum allowed revenue (MAR) for future years (2023-2026).

Maximum Allowed Revenue for the Sector companies (MAR)

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Price control set a limit or an upper ceiling for allowed revenues of monopolistic companies through a series of procedures and processes span for two years that includes an extensive exchangeable information/data with sector companies. Usually that happened through four consultation stages by releasing four consultation papers to the concerned and include their responses along with DoE analysis/decision into the final proposals which set the MAR for next period of price controls.

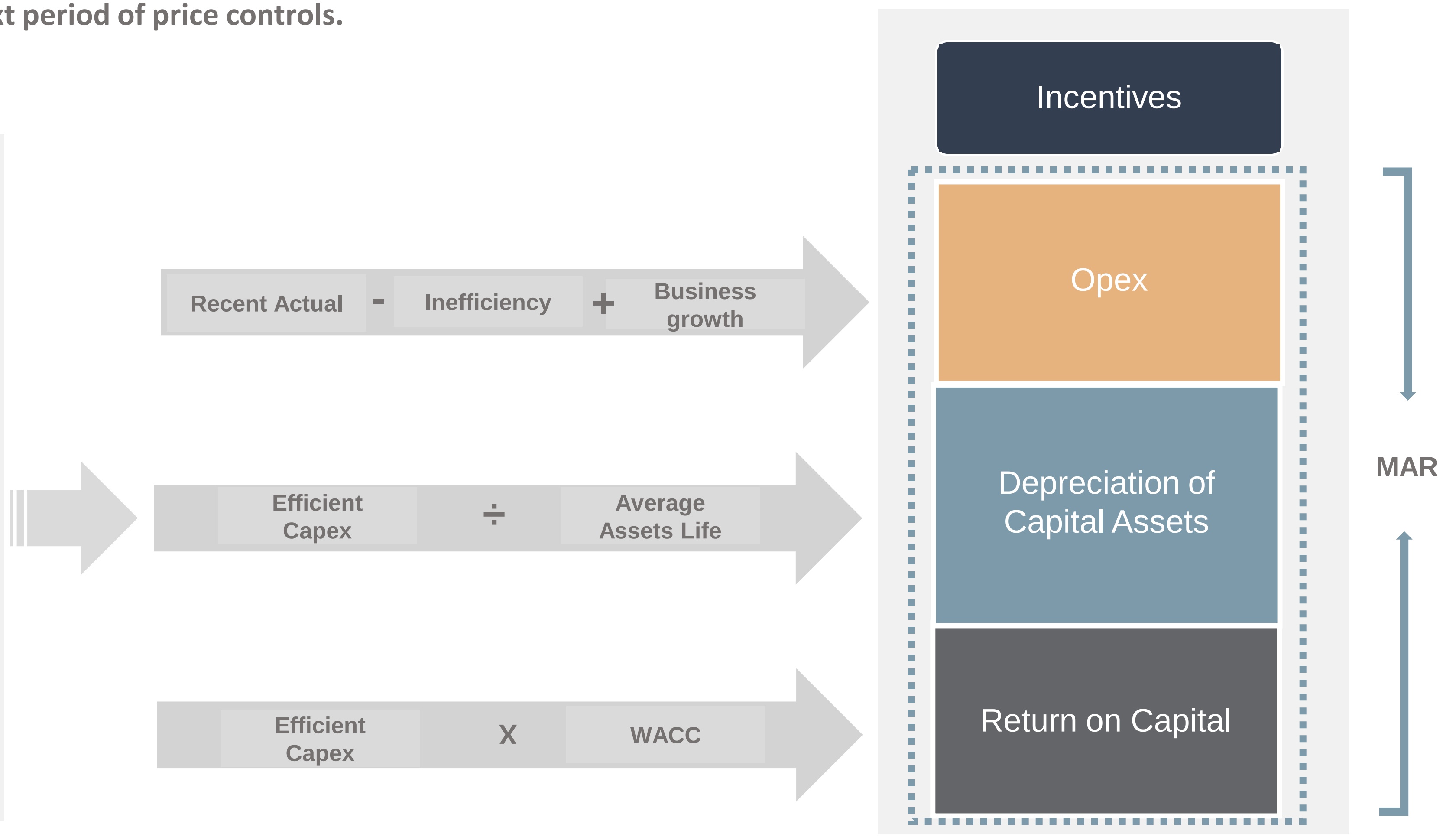
The Department of Energy performs the price controls as follows:

Assess the companies past operating expenses to set the efficient opex;

Review the capital projects budget plans for the upcoming years and evaluate them technically/economically as well as reviewing the efficiency of the performance capital spending for previous years to determine the efficient capital expenditure and set a reasonable future capex;

Set the WACC to allow reasonable return (profit) to monopiles companies for their investments on the network by taken into account the risks and costs incurred by shareholder and creditors.

Set an appropriate performance incentives to motivate companies to improve the quality of services provided to the consumers and to ensure services reliability and security of supply;



Price Controls Framework - Calculations

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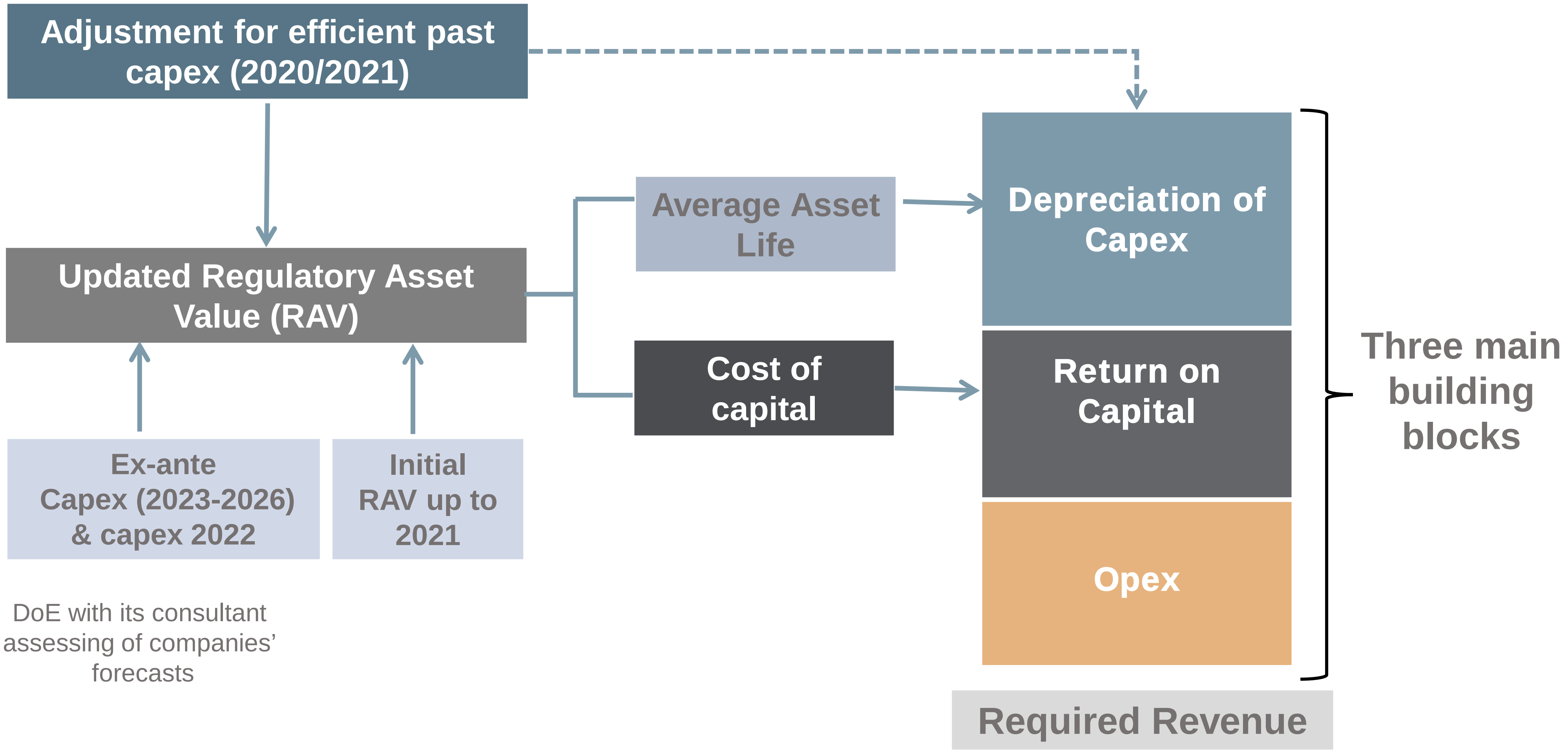

RAV: is the mid-year average of opening and closing Regulatory Asset Values (RAVs). For each year, the closing RAV is determined by adding the capital expenditure (capex) incurred in that year to, and subtracting the depreciation from, the opening RAV..

Example: Structure of DISCOs' Price Controls

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MAR = Pass Through Costs + Price Controlled Costs

For DISCOs

Production Costs (BST)

Transmission Costs

Capped by Price Control Caps varies annually by:

1. **Demand Change**
2. **Inflation**
3. **Performance**

Price controlled Costs Calculations

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MAR = Production Costs + Transmission Costs + DSR ± Q ± K

Pass-through (subject to economic purchasing obligation)

Subject to Price Control

DSR = a + (b x Customer No.) ‘a’ and ‘b’ vary with CPI-X

MAR adjustment for Performance Incentives

Under- or over-recovery in the preceding year

DSR: Distribution and Supply Revenue
K Factor: Correction Factor - **a and b value**: called notified values
Q factors: Amount of Revenue (which can be positive or negative) in relevant year t linked to the performance of licensees in relevant preceding years (t-1) or (t-2)

Weighted Average Cost of Capital (WACC) – Methodology

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Up to RC1 the rate of return or WACC estimated based on local and overseas evidence.

A bottom-up approach has been applied for the RC2 WACC, where individual component of WACC is estimated separately using international regulatory benchmarks in the absence of robust local and regional data.

Cross-checked with the individual components used in price control decisions from several international regulators with a similar regulatory framework.

The WACC compensates regulated networks for an assessment of efficient financing costs

WACC = Cd * g + Ce * (1-g)

RAV x WACC

Required Revenue

Opex

Depreciation of Capital Assets

Return on Capital

g: is gearing level, percentage proportion of debt/(debt + Equity), which is a financial ratio that compares some form of owner's equity (or capital) to debt, or funds borrowed by the company.

Price Controls – Incentives to reduce costs

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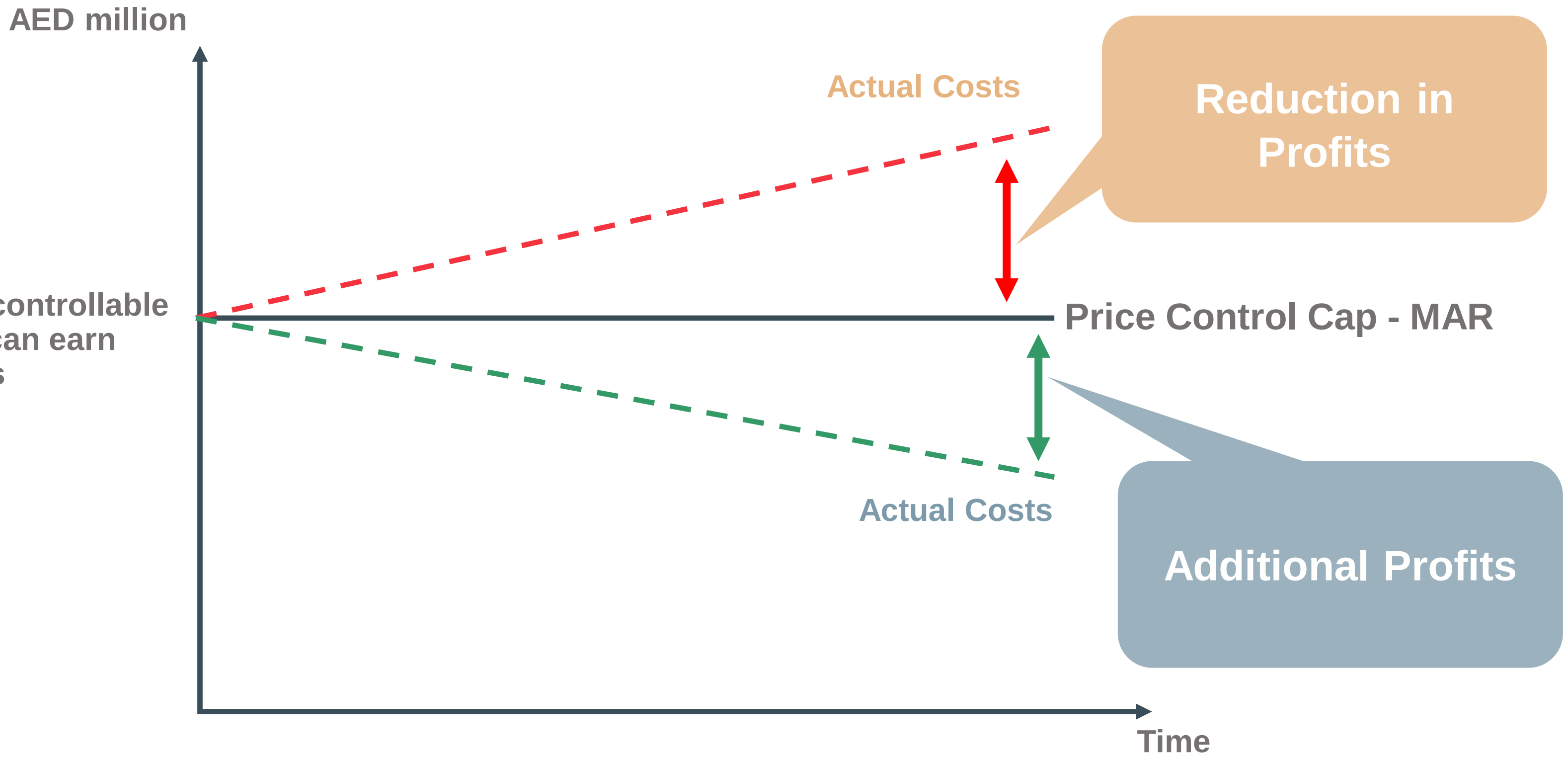
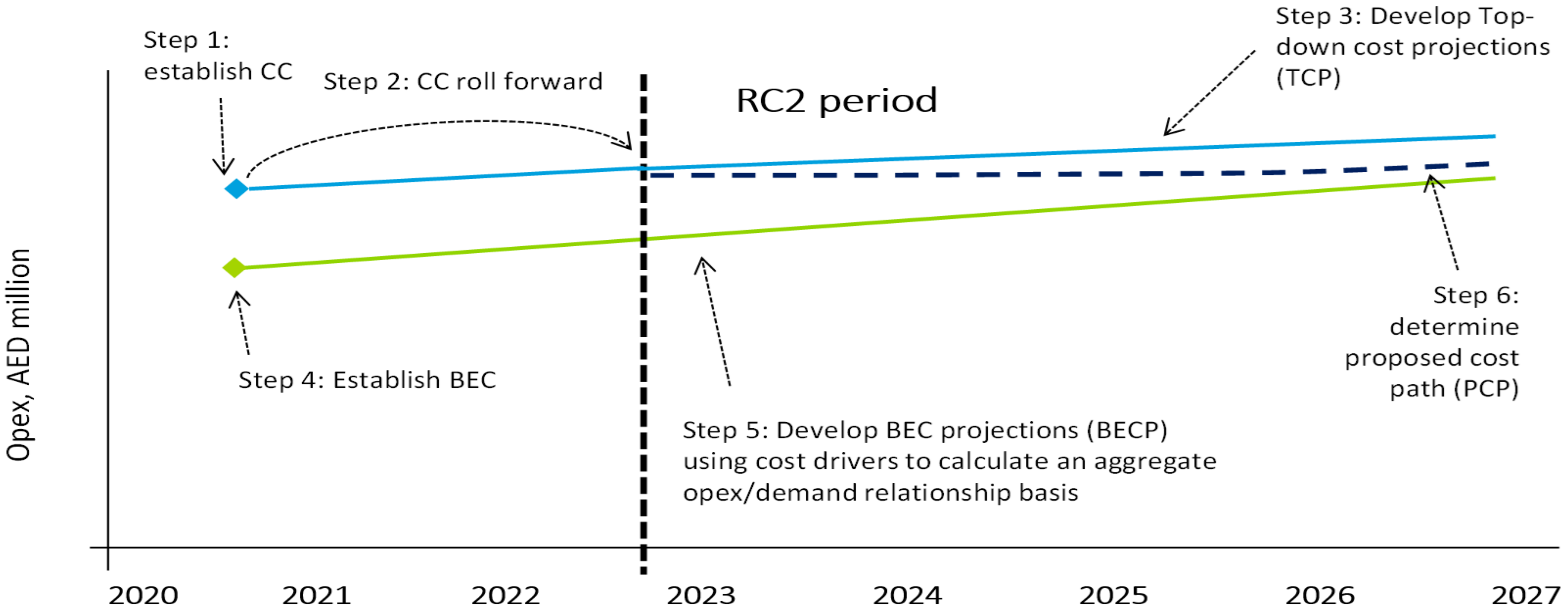
If Company can reduce its controllable costs below the cap, it can earn additional profits



Operating Expenditures- Methodology

Hybrid of top –down and bottom-up approaches

Provisional allowances for uncertain specific cost items (eg Emiratisation)



Incentives – Impact in building blocks