



# Regulation of public utilities

**ROUNDTABLE UTILITY REGULATION IN UKRAINE**

01 March 2005

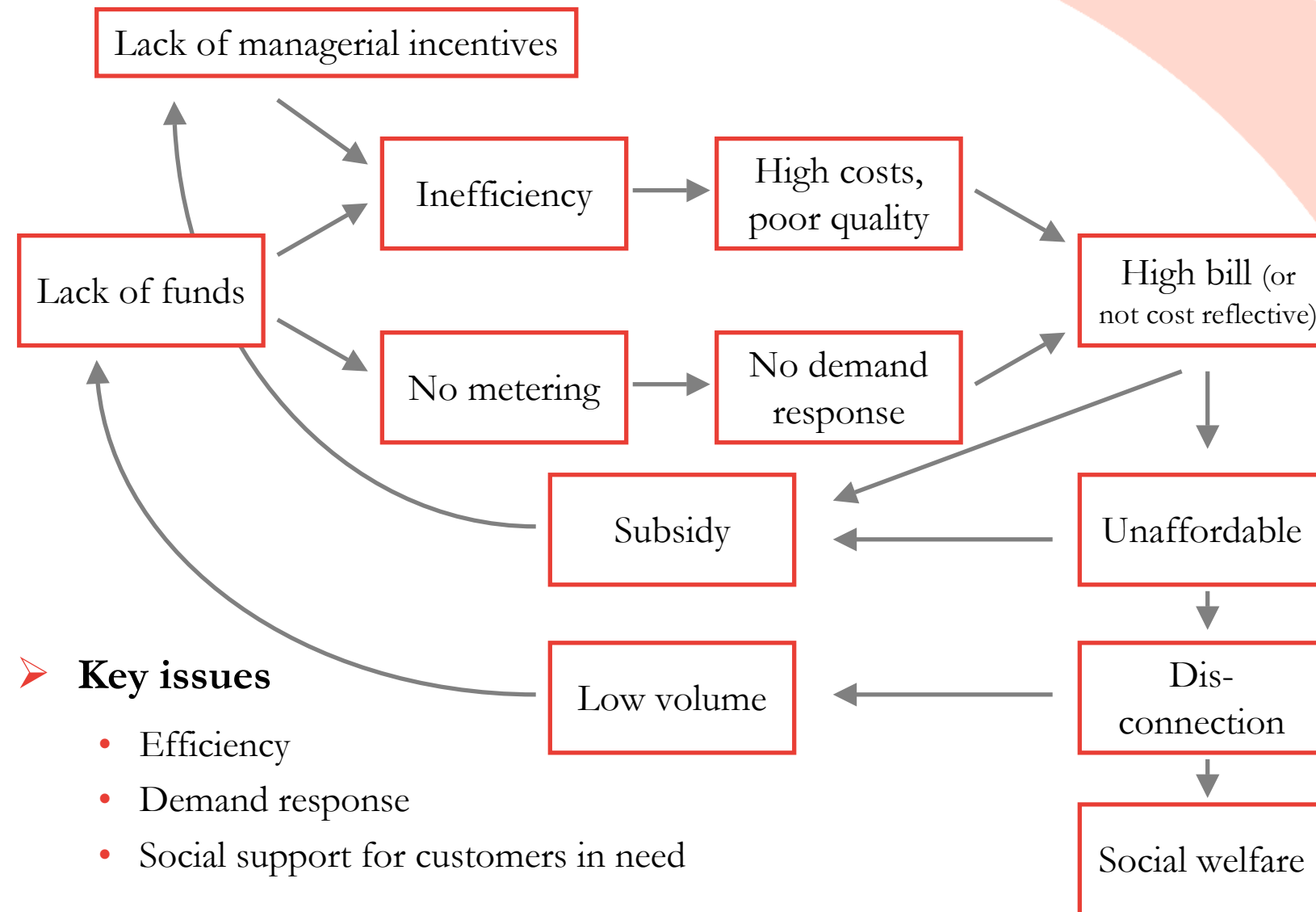


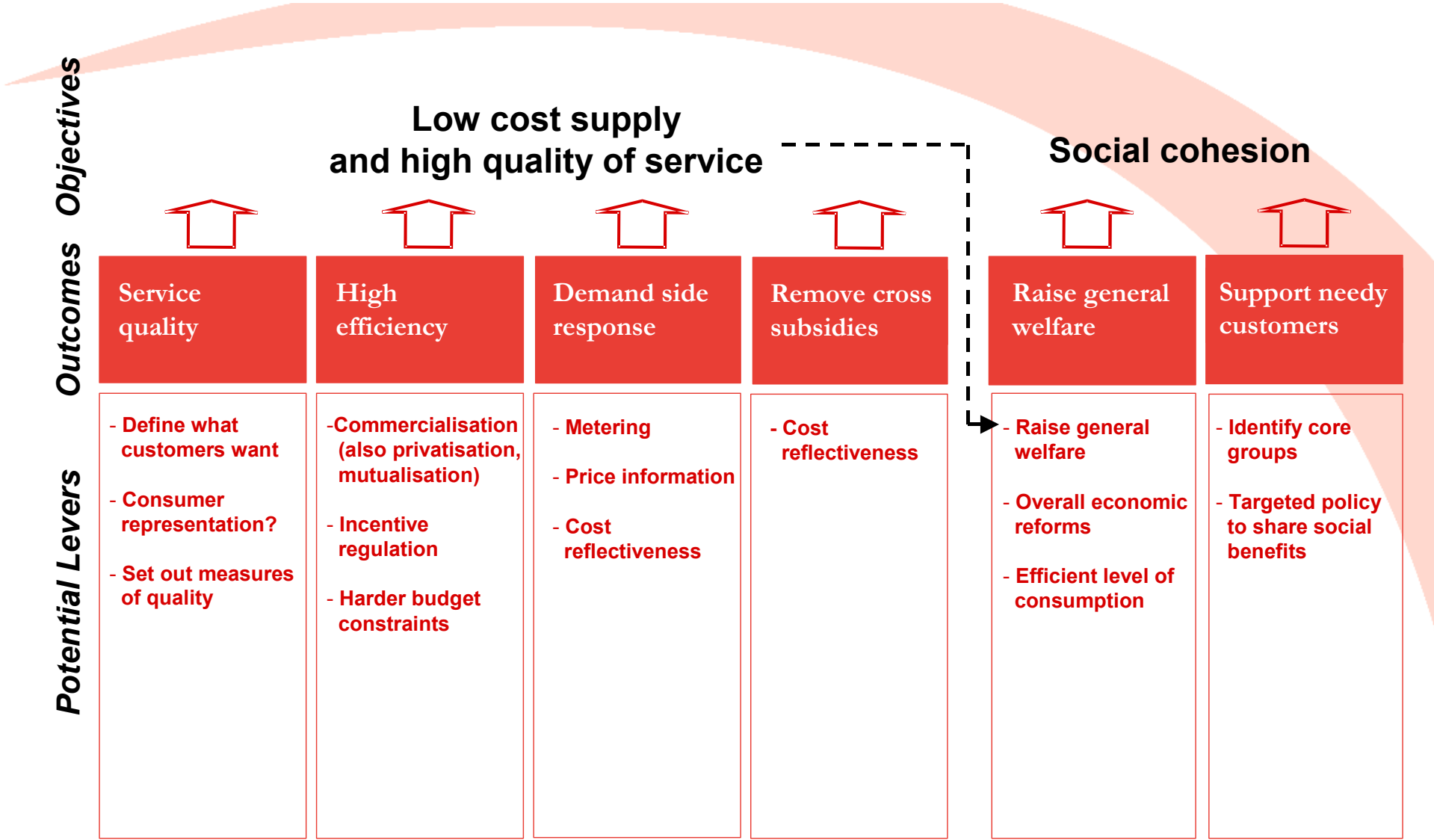


## Outline

- **Regulation and management incentives**
- **Design of regulation**
- **Information required for regulation**
- **Regulation of heat – specific issues**
- **Summary of regulation**

## Typical cycle of financial strain and poor service





## Commercialisation is often accompanied by PSP to ensure response to efficiency incentives

	Length (years)	Responsibility			Asset ownership
		Op's	M'ce	Inv't	
Service contract	1-5				Public
Mgt. contract	3-5				Public
Lease contract	10-15				Public
Concession	20-30				Public
BOT etc.	20-30				Varies
Asset sale	indef.				Private

Increasing private involvement:



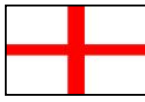

- Operational efficiency
- Investment efficiency
- Access to capital

■ Private sector responsibility

A number of countries have liberalised utility industries without psp on political grounds (eg France, Ireland). Without a strong culture of efficiency in public service (eg Norway), this has resulted in lower efficiency gains. For example, losses in state owned electricity boards in India are 3-4 times industry norms.

*= > Need to regulate to restrain profit maximising behaviour of private firms*

## Different approaches to control and incentives

Approach	Who regulates
<ul style="list-style-type: none"><li>○ <b>Franchise bidding</b><ul style="list-style-type: none"><li>• Competition for the market, e.g. France </li></ul></li></ul>	<ul style="list-style-type: none"><li>○ Municipalities</li></ul>
<ul style="list-style-type: none"><li>○ <b>Monopoly subject to antitrust control</b><ul style="list-style-type: none"><li>• E.g. Germany </li><li>• Recently, development of efficiency analysis</li></ul></li></ul>	<ul style="list-style-type: none"><li>○ Municipality<ul style="list-style-type: none"><li>• Also, administrative court / state competition authorities</li></ul></li></ul>
<ul style="list-style-type: none"><li>○ <b>Incentive regulation</b><ul style="list-style-type: none"><li>• E.g. UK  </li><li>• Also elements of TPA (competition in the market)</li></ul></li></ul>	<ul style="list-style-type: none"><li>○ Sector regulator</li></ul>

## Effective economic regulation requires incentivised management

### ○ Economic regulation

- Aims at mitigating market failure or restricting dominant behaviour
- Therefore, it typically reduces price and improves quality
- Presumes that management/firm have profit motive

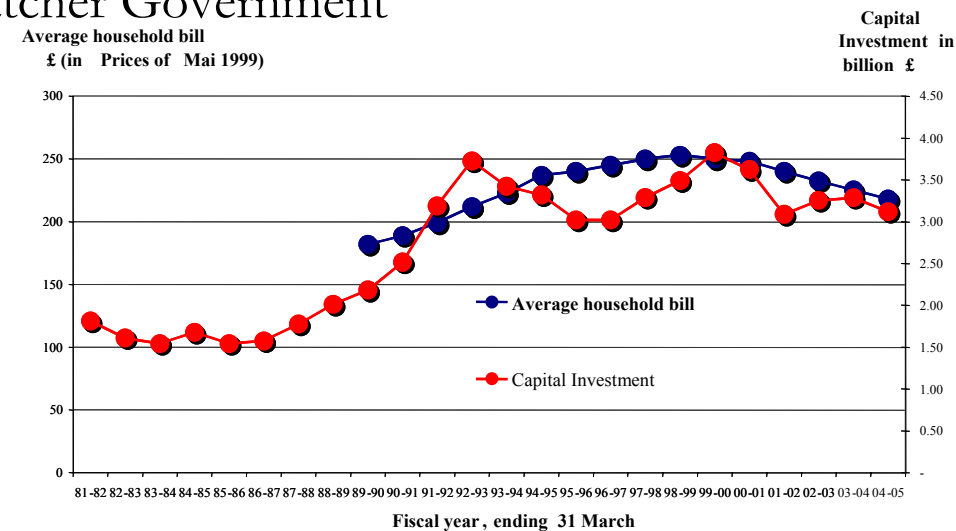
### ○ With soft budget constraints

- Management may lack an incentive to raise prices
- Lack of funds leads to cycle of underinvestment, inefficiency and poor service

*= > Need to harden the budget constraint and incentivise management*

## UK water restructuring programme: approach to strengthened management incentives

- In the 1980s, the UK water industry was characterised by
  - Historic underinvestment
  - Poor quality
  - Low prices
- Why privatisation?
  - Reluctance of Government to fund investment required to meet tougher EU regulations
  - Privatisation policy of Thatcher Government
- What happened?
  - Prices rose
  - Investment improved, partly financed from improved efficiency
  - Quality improved

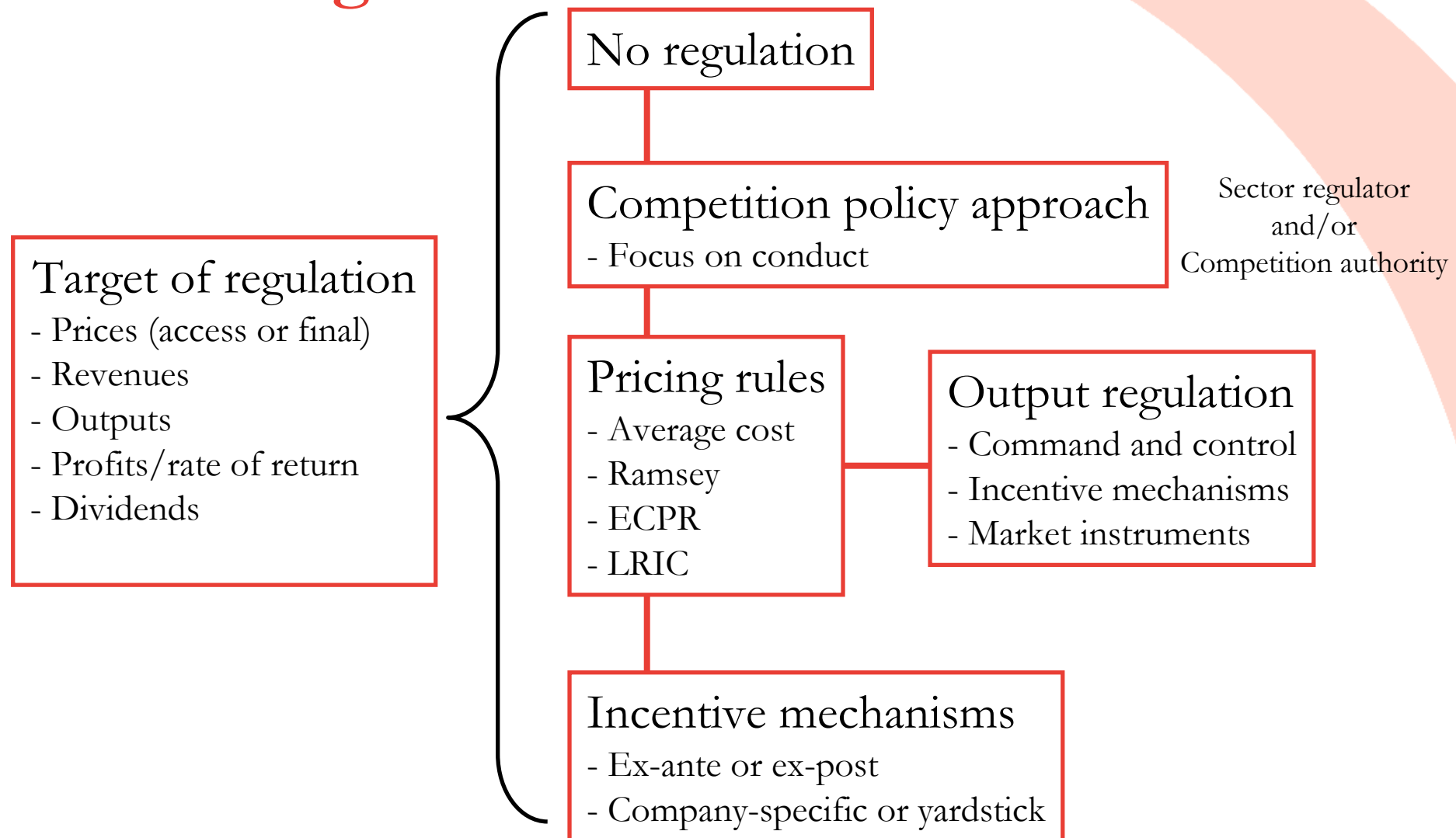




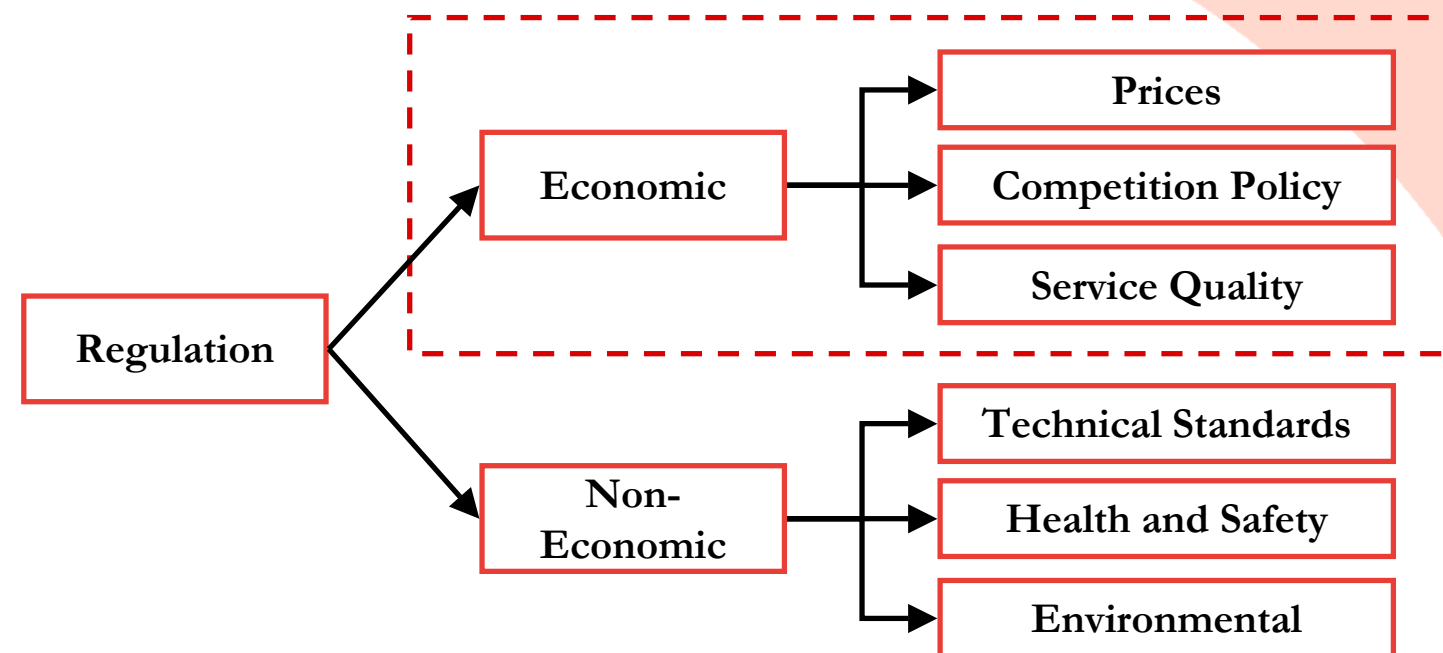
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# How to regulate?



## In general, economic regulation will be required for natural monopolies



### Objectives of price regulation...

- Ensure tariffs are cost reflective in aggregate
- Provide incentives for efficiency
- Ensure financial viability of efficient companies

### Objectives of quality regulation...

- Set minimum technical standards
- Enforce compensation regime (if quality standards customer specific)
- Create incentive regime for general quality standards

**Where the public sector is shareholder and regulator, there may be conflicts of interest**

### **Regulatory objectives**

- Framework to encourage competition and encourage new entry
- Cost reflectivity of tariffs
- Incentives for efficiency
- Optimal level of investment

### **Wider public objectives**

- Value of investments (now and in any potential sale)
- General industry competitiveness
- Avoid significant residential tariff increases?
- Avoid price spikes/blackouts
- Employment levels – direct and in related industries

## Independence and credibility of regulator encourages investment

- Regulators could be “captured” by Government, industry, investors or customers

### Accountability

- Clear regulatory mandate
- Transparency of decisions
- Judicial review

### Commitment

- Inflexible rules (e.g. OFWAT must “ensure that companies can finance their functions”)

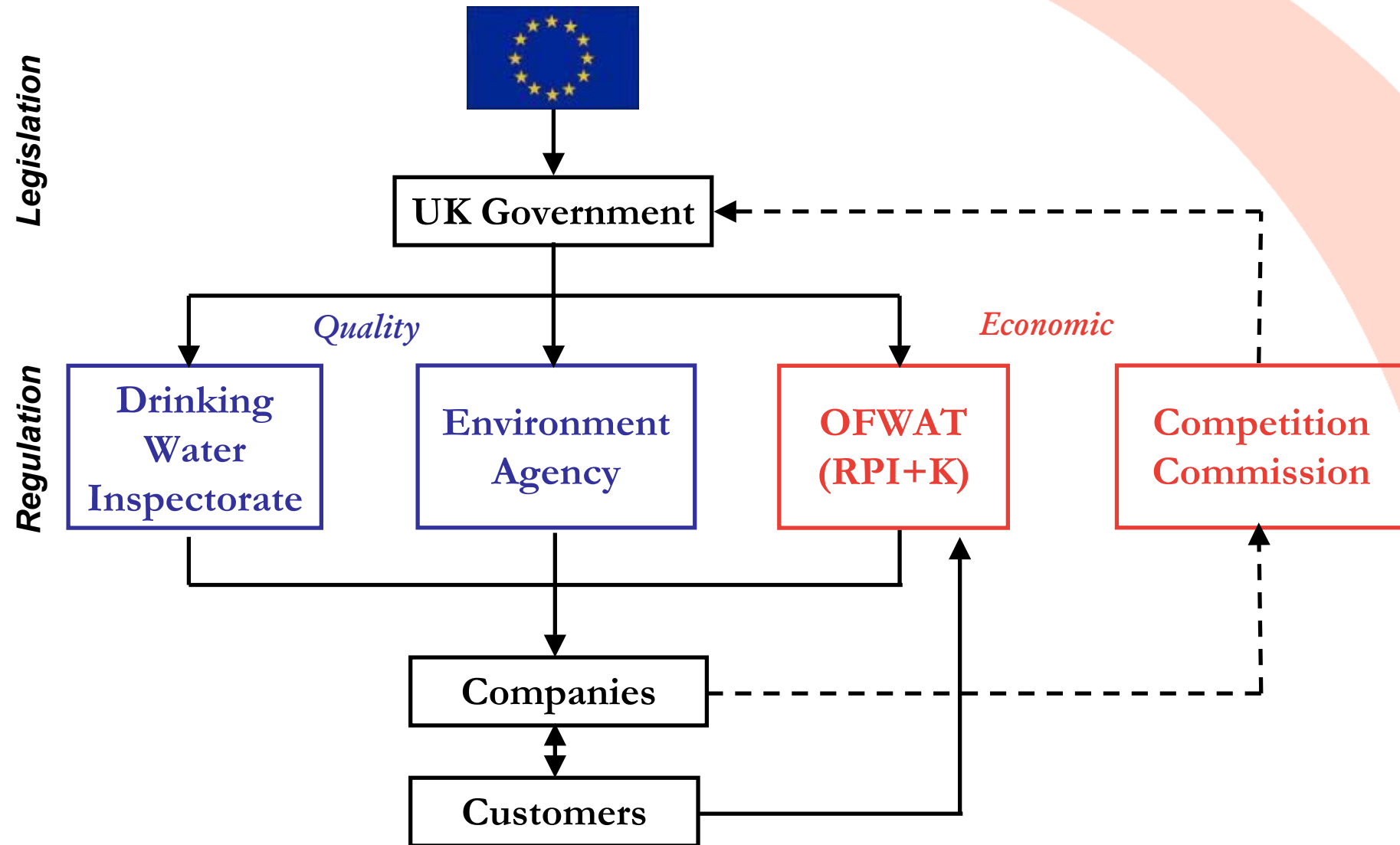
### Independence

- Financial autonomy
- Fixed terms of office
- Pre-specified appointment criteria
- Avoidance of conflicts of interest
- Sufficient resourcing

## Other design issues of regulators

- **Separation of price and quality regulation**
  - Depends whether price-quality trade-offs are acceptable
- **Geographic boundary**
  - Depends upon scale of issues, e.g., municipal level or country-wide regulator
- **Sectoral coverage**
  - Multi-sector regulators help avoid capture if there are only a few firms in an industry

# Legal and regulatory framework for UK water





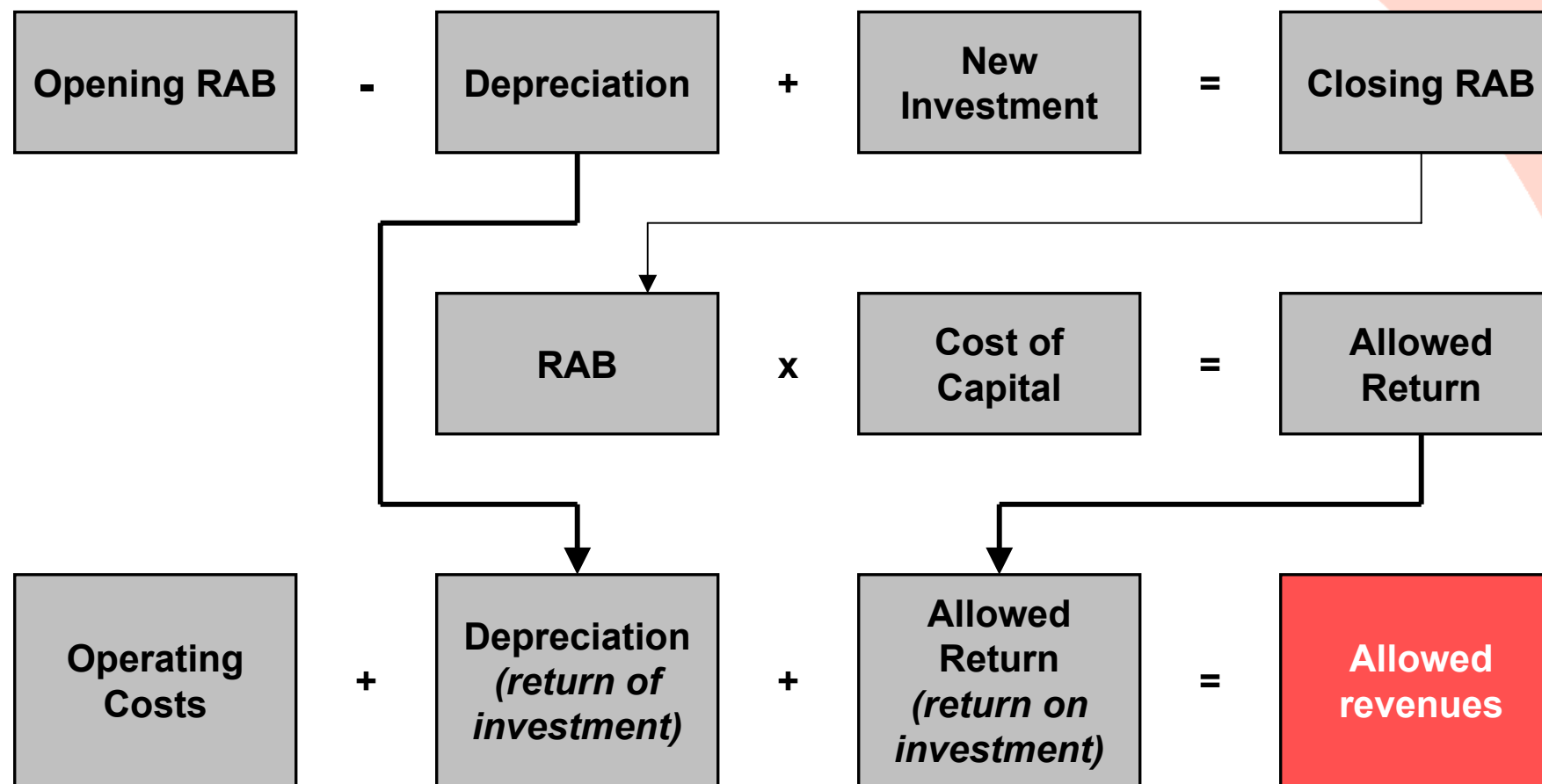
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## The basis for setting a price control

- **Promote efficient use of resources**
  - Firms use inputs efficiently to produce output
  - Set prices to encourage efficient level of production / consumption
- **Set the price control, ex ante, so that the firm earns required revenues to run the business *efficiently***
- **Regulation is not about recovering historic costs**
  - Although HC recovery may be important to establish credibility of regulator

## Information required to set prices



## Identifying the inputs into the model

- **The inputs into the allowable revenue calculation are:**

- Asset valuation
- Depreciation
- Cost of capital
- Expected operating expenditure
- Expected capital expenditure

} **Estimate  
*future values***

- **Regulators use various sources to estimate each of these inputs**

- Pro-forma regulatory accounts (ring-fencing and RAGs)
- Company accounts
- Company forecasts
- Data on reasonable comparators – exogenous information
- Information from financial markets
- OFWAT's "June returns" allowed comparisons

OFWAT required each company to have an information "reporter"

- **Concerns exist about availability and reliability of data sources**

- Availability more of a problem in countries/industries where regulation is new
- Reliability is a problem everywhere

## Financial viability

- **Financial markets consider key variables when determining access and cost of financing**
- **OFWAT considers variables when setting price cap**
  - Interest cover
  - Gearing
  - Dividend cover
- **OFWAT's duty to ensure that functions are financed does not relate to solvency of specific companies**

## Companies also compete on quality

### ○ Two issues with quality regulation

- Customers of network firms often cannot buy different quality levels
- Quality is difficult to measure effectively

What matters to customers may be hard to measure

What is easy to measure may not matter to customers

### ○ Two broad approaches

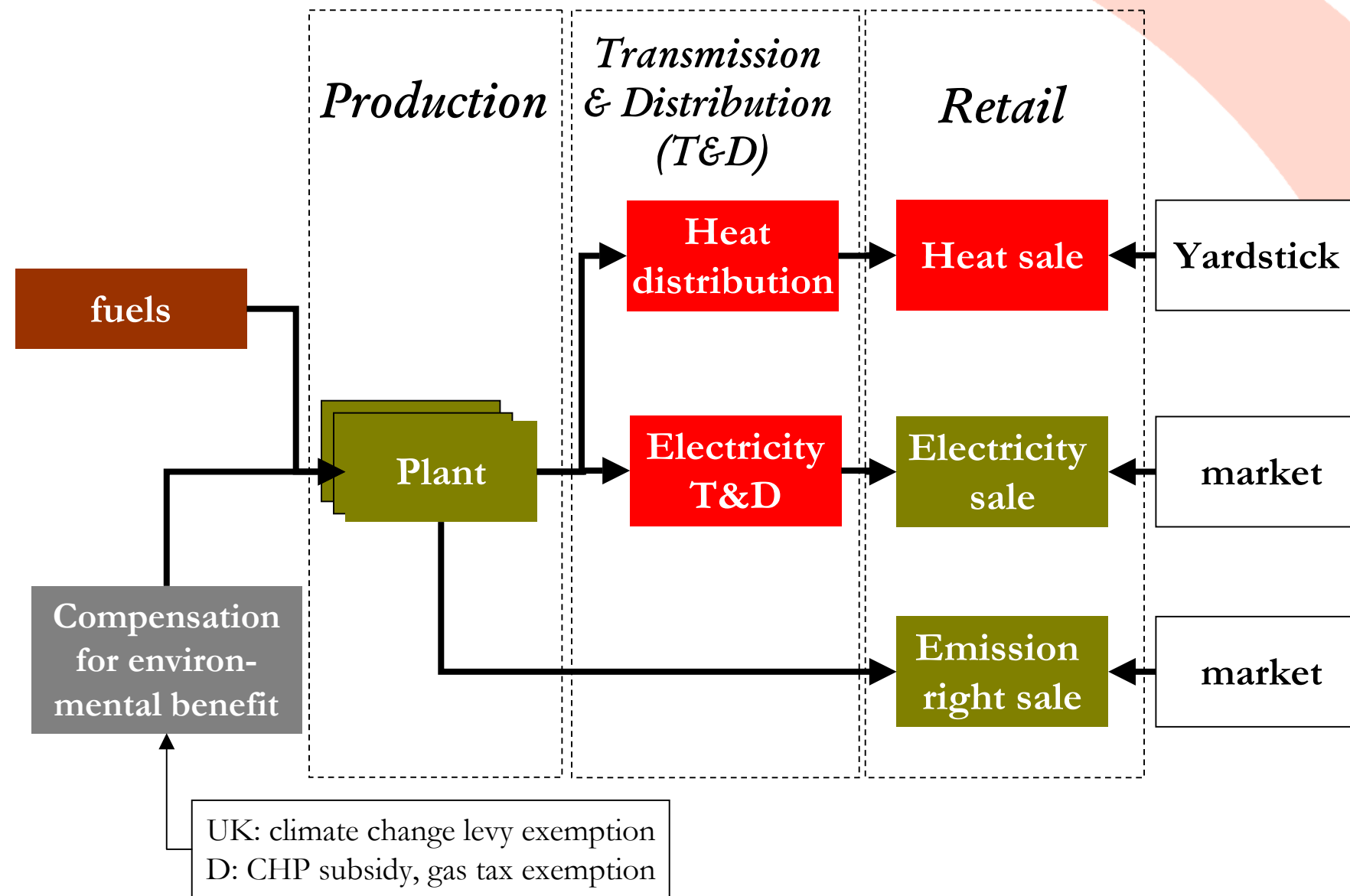
- Continuous incentives (rewards / penalties)
- Absolute standards



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# Competition and regulation in district heating



## Regulatory issues of heat sales

### How to price heat?

#### Yardstick approach

Price at cost of contesting fuel (coal, oil etc.)?

#### Cost based approach

How to allocate the cost benefits between electricity and heat customers and owner?

- Joint process
- Efficient scale
- Environmental benefits

### How to handle environmental aspects?

- **Technical and emission standards**
- **Subsidy/tax exemption**
- **Reduced electricity network charge**
- **Emission trading**



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## Some approaches to regulation

	Country	Form of control	Length of regulatory period
<b>Electricity distribution</b>	Australia	Revenue cap	5 years
	Belgium	Cost-plus	1 year
	Netherlands	Yardstick competition	3-5 years
	UK	Price cap	5 years
<b>Gas transportation</b>	Australia	Price cap	5 years
	Belgium	Cost-plus	1 year
	Netherlands	Cost-plus	3-5 years
	UK	Price cap	5 years
<b>Water</b>	England and Wales	Price cap	5 years 10 years up to 2000
	Sydney Water	Price cap	2 years May increase to 4
<b>Telecoms (retail)</b>	UK (BT)	Price cap	4 years
<b>Telecoms (wholesale access)</b>	Italy	Price cap	3 years
	UK (BT)	Price cap	4 years Proposed reduction to 2-3 years



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