



From RPI-X to RIIO: evolution or revolution?

Presentation to the Infraday Conference, Berlin

8th October 2010

- Background to the review
- Outcome of the review
- Challenges in implementing an outputs-based regime

A brief recap of policy in the UK

- In the UK, public ownership was the dominant form of utility regulation between 1945 and mid-1908s
- Problems detected at least as early as 1967
 - Inefficiency
 - Ill-disciplined investment planning, weakly tested by commercial considerations
 - Micro-management by civil servants
 - Used as instruments of macro-economic policy by ministers
 - Leading to high prices and poor quality of service for customers
- The privatisation of the major utilities unbundled:
 - Policy – determined by government through statute
 - Regulation – applied by the regulator in accordance with his/her powers
 - Management – delegated to network operators working within the regulatory framework and the private commercial arrangements with its owners
 - Ownership – transferred to private owners
- This unbundling may have been at least as important as the physical unbundling of the industries into competitive businesses and naturally monopolistic networks

The key ingredients of the Littlechild model of regulation

- Key features
 - An *ex ante* control on prices
 - Provide investors with assurance against inflation risk
 - Customers get assurance and benefit of annual X% price 'reduction' in real terms
 - Company has incentive to reduce costs further since it keeps savings beyond this
 - No cap on profits or on rate of return
 - Various implicit and explicit requirements on the operator to run a safe, reliable system
- The regulator's problem was therefore:
 - Set prices such that the operator could expect to recover its costs over the next 5 years, including the cost of capital
- The operator's problem was:
 - Maximise profits, subject to prices not exceeding the level set by the regulator, and meeting the safety and reliability requirements placed upon it; or
 - Minimise costs subject to meeting the safety and reliability requirements placed upon it.
- The Littlechild model therefore had an exclusive focus on maximising economic efficiency
 - And in that respect, it undoubtedly was a success. But.....

Other stakeholders valued a more diverse set of outcomes

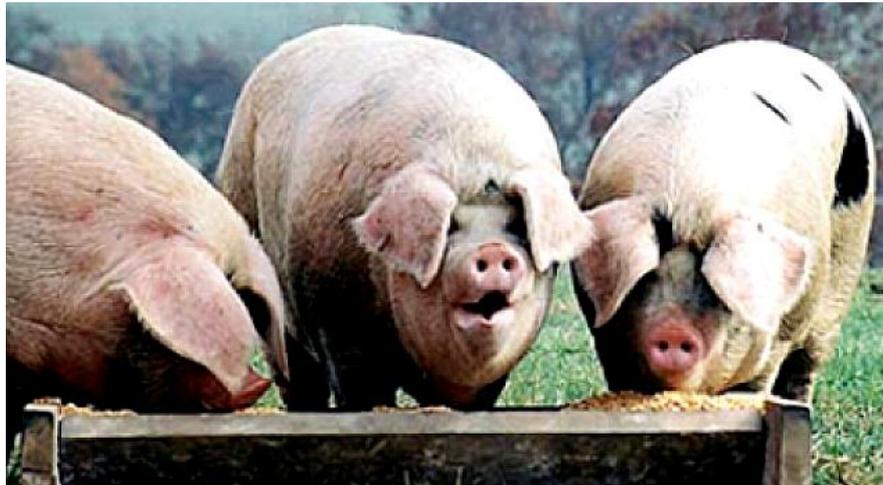


Labour targets 'fat cat' pay



Sacked BA chief Bob Ayling received a £1m pay-off

Labour says it plans to force companies to reveal details of directors' salaries and bonuses in a long-awaited clampdown on boardroom 'fat cats'.



Implications for the RPI-X@20 project...

Ageing assets and sustainable development objectives imply massive need for capex

Make sure investment is efficient

The Littlechild model of RPI-X lasted one price review, before being subjected to continuous modification over the next 16 years

- **“Pure form” Littlechild regulation at the first NGC review**
- **Introduction of the RAV, WACC, and cost building blocks at 1st DPCR (2 attempts!)**
- **RAV determination for gas networks in 1993 and 1997 (both endorsed by MMC!)**
- **Increased application of benchmarking**
- **Sliding scale mechanisms to encourage accurate forecasting at DPCR4**
- **Ongoing unbundling of certain activities and exposure to markets or auctions**
- **Ongoing introduction of quality targets and payoffs, and guaranteed standards**

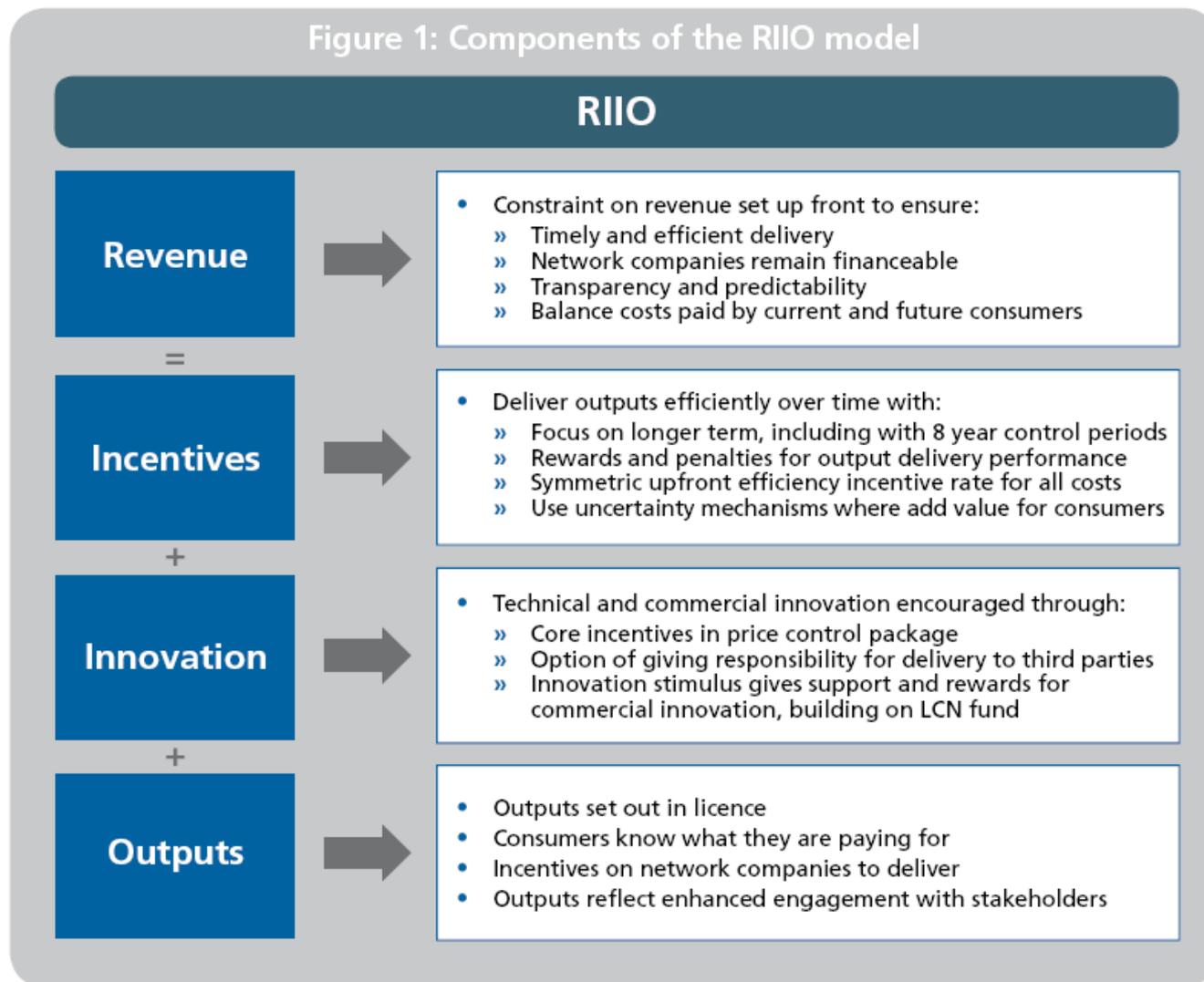
Regulatory framework that is increasingly detailed, complex and probably incoherent

- **The RPI-X@20 project is a “first principles” review of regulation that should apply, rather than a review of regulation that has applied**
- **Ofgem has so far affirmed that it seeks to promote incentive orientated, output-based regulation through the RPI-X@20 project – this has strong incentive properties**
- **Its ongoing work is to develop the practical rules that would need to be applied to have that effect**

...Project Discovery looking in parallel at markets

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Outcome of the review – from RPI-X to RIIO



The key differences, as noted by Ofgem



Promoting choice and value
for all gas and electricity customers



The headlines

- | | |
|--|--|
| ▪ Goodbye RPI-X | Hello RIIO (R is revenue, I is incentive, I is innovation is for output.) |
| ▪ Goodbye 5 years | Hello 8 years |
| ▪ Goodbye Poor customer involvement | Hello Customer Engagement |
| ▪ Not Revolution but | Evolution – financial package gets worked through in real PCR's. |
| ▪ Commitment not to impair RCV | Enables financial package to get support and introduction. |
| ▪ Great link to Discovery | We are assisting in £40bn spend. |

Attuned to today & tomorrow's challenges

Is RIIO a fundamental departure from RPI-X?

- No - the most radical options for reform have been rejected, watered down or left open to be determined at subsequent reviews
- The review could in fact be viewed as a re-embrace of the Littlechild ideal:
 - Retention of strong incentives to reduce costs subject to meeting certain outputs
- But where the outputs are now more explicitly defined to ensure value for money for customers

The increased focus on outputs in regulation

- Without a strong role for outputs in a high-powered regime, there are incentives to diminish service provision in order to increase profits. This was a major concern under the old regime
- But outputs need to be defined and incentivised with care
- The implicit or explicit incentives may lead to outcomes that are socially inefficient
 - Rail sector in the 1990s
- The outputs must match up to what stakeholders value
 - The original Littlechild model broke down because of an exclusive focus on economic efficiency
 - Other stakeholders cared about a wider set of outcomes
- Multiple outputs make the task of regulation more complex
 - The package of explicit and implicit incentives across the full set of outputs can give rise to over-emphasising some outputs at the expense of others
- Outputs may not be capable of being directly incentivised

Ofgem asked Frontier to advise on the outputs package that could be used

Ofgem's output-based regulatory framework

OBJECTIVES FROM NETWORK COMPANIES

- Objective 1: Play a fuller role in facilitating delivery of a sustainable energy sector
- Objective 2: Deliver value for money over the long term for existing/future consumers

OUTPUT CATEGORIES – ARE THESE THE RIGHT ONES?

Environment

Reliability

Conditions for
Connection

Customer
satisfaction

Safety

Social obligations

HIGH LEVEL OUTCOMES FOR EACH OUTPUT CATEGORY – WHAT SHOULD THEY BE?

PRIMARY OUTPUTS TO ACHIEVE HIGH LEVEL OUTCOMES IN EACH CATEGORY – WHAT ARE THEY?

SUPPORTING INDICATORS TO AID MEASUREMENT AND IMPLEMENTATION OF PRIMARY OUTPUTS

And....

Can the outputs be put together in a coherent regulatory package?

Ofgem's primary outputs

Output category	Electricity Distribution	Gas Distribution	Electricity transmission	Gas Transmission
Customer satisfaction	<ol style="list-style-type: none"> Broad measures of customer satisfaction reflecting experience of consumers and network users Qualitative survey evidence 			
Safety	<ol style="list-style-type: none"> Comply with minimum legal requirements as specified by the Health and Safety Executive Additional safety initiatives considered to be in public interest 			
Reliability and availability (Network risk dealt with in secondary deliverables, see paragraphs 6.26 to 6.42)	<ol style="list-style-type: none"> Customer interruptions (CI) Customer minutes lost (CML) or energy not supplied (ENS) 	<ol style="list-style-type: none"> Supply restoration after an interruption Customer minutes lost (CML) or energy not supplied (ENS) 	<ol style="list-style-type: none"> Energy not supplied (ENS) Constraint measure 	<ol style="list-style-type: none"> Baseline entry capacity Buy back at entry Baseline flat/flex offtake capacity Buy back at exit
Conditions for connections	<ol style="list-style-type: none"> Time to connect a generation node Time to connect a demand node 	<ol style="list-style-type: none"> Time to connect an entry/exit or demand node 	<ol style="list-style-type: none"> Time to connect a generation node Time to connect a demand node 	<ol style="list-style-type: none"> Time to connect an entry/exit or demand node
Environmental impact	<ol style="list-style-type: none"> Carbon footprint of network including losses Proportion of new low carbon generation Other emissions Visual impacts Role in consumer energy efficiency 	<ol style="list-style-type: none"> Carbon footprint of network including shrinkage Proportion of new low carbon energy Other emissions Role in consumer energy efficiency 	<ol style="list-style-type: none"> Carbon footprint of network including losses Proportion of new low carbon generation Other emissions Visual impacts 	<ol style="list-style-type: none"> Carbon footprint of network including shrinkage Proportion of new low carbon energy Other emissions
Social obligations	<ol style="list-style-type: none"> Targets for vulnerable customers, e.g. PSOs 			

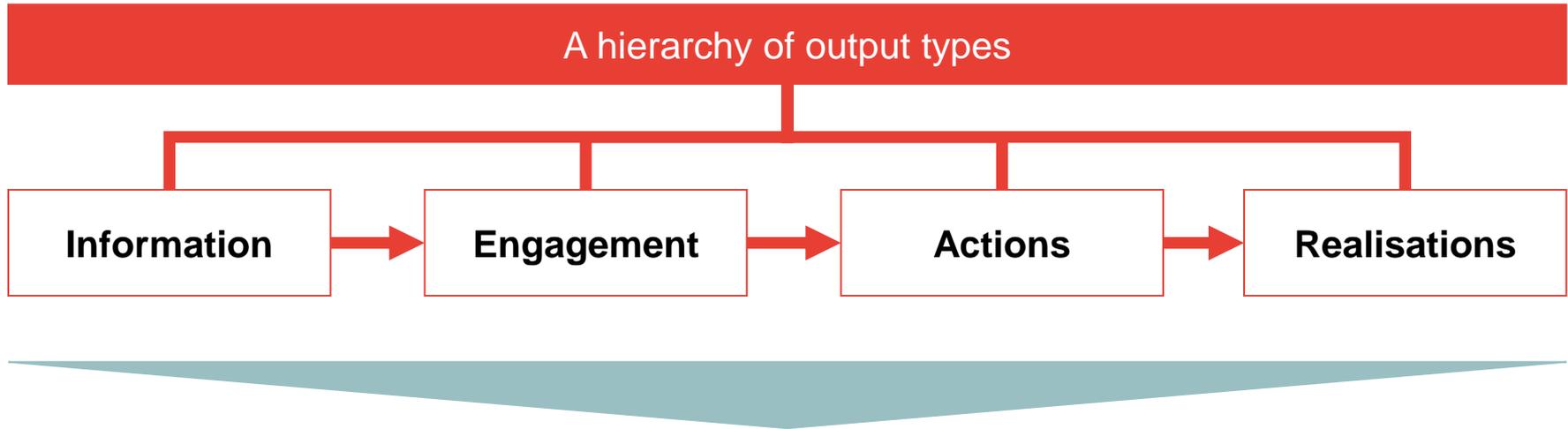
* A composite customer satisfaction measure used in electricity distribution consisting of a customer satisfaction survey, a complaints metric and stakeholder engagement.

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Criteria the outputs should satisfy.....

Material	Do the outputs make a significant contribution toward the overall outcomes that Ofgem seeks to promote?
Controllable	Are the outputs wholly or partly under the control of the operator?
Measurable	Can the output be meaningfully measured, taking account of: <ul style="list-style-type: none">• Any trade-offs with other outputs• Any trade-offs between short run and long run output delivery• The trade-off between greater accuracy & detail, and the usefulness of that accuracy• The degree of definitional ambiguity that might exist
Comparable	Can the outputs be measured consistently across the operators to facilitate meaningful comparisons?
	
Applicable	Can the outputs be applied in a revenue determination process or to set penalties and rewards, and if so, how?

... and if they fail the criteria, what do we fall back on?



- Ideally, output-based regulation should be focused on rewarding and penalising realisations
- In practice, the realisations may not pass the criteria, so the regulator may need to reward and penalise operators for their actions
- This implies a “creep” into input-based regulation, so it is necessary to clearly de-lineate the boundary between delegated authority to the operator, and intervention by the regulator

There are two different groups of output types, with different regulatory treatments

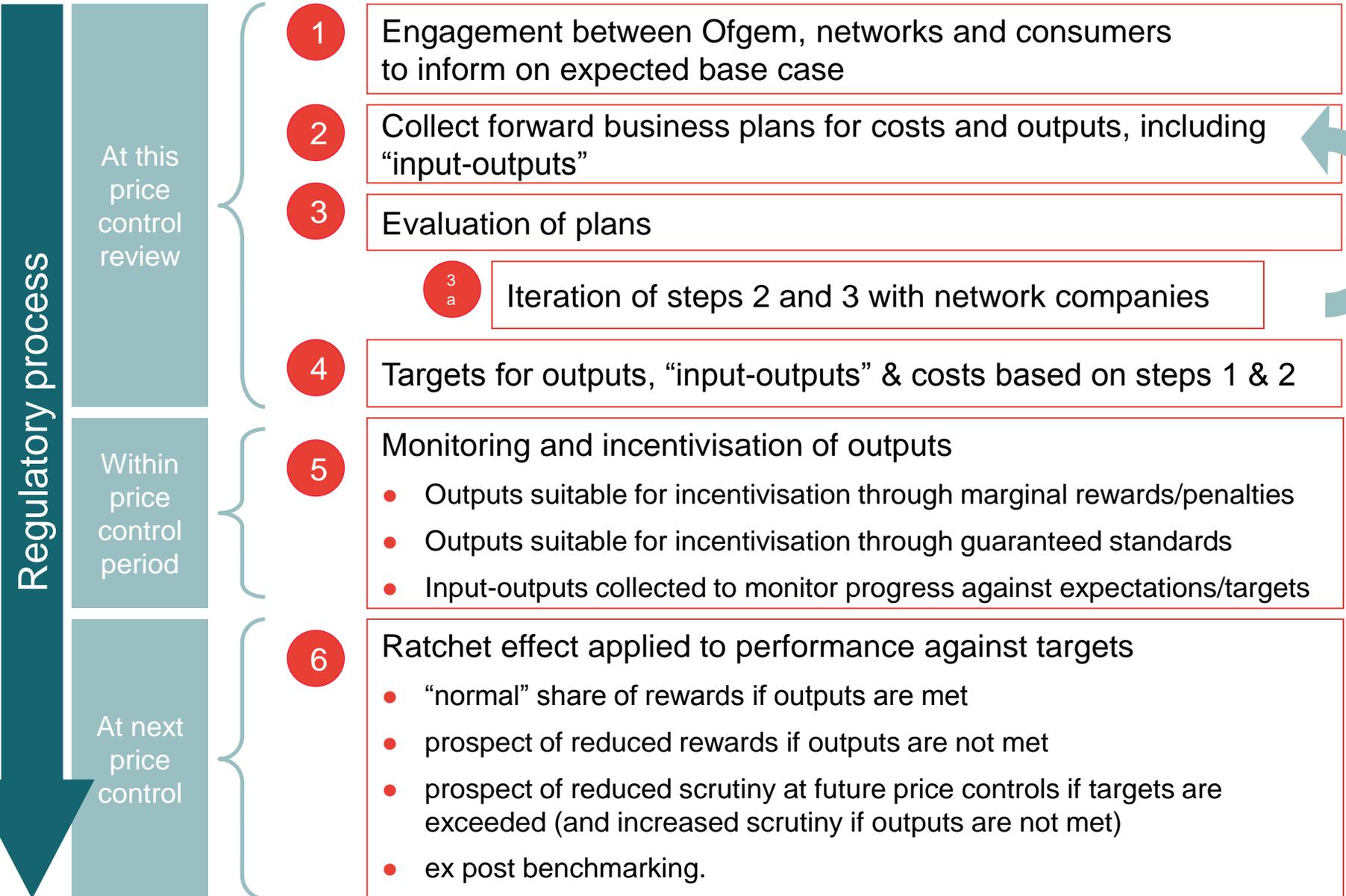
In many cases, actual realisations can be applied as outputs

- They should be sufficiently controllable, measurable and material to enable explicit rewards and penalties to be applied
- Performance against these outputs can be rewarded or penalised through:
 - Marginal incentive regimes; and
 - Guaranteed standards; with
 - Caps and collars to limit financial exposure

In other cases, the regulator will need to monitor actions (or inputs)

- These “input-outputs” will need to be monitored by Ofgem with poor performance potentially subject to penalty at the end of the price control period
- They fall into 3 types:
 - The available output measure (e.g. CI/CML) may provide a poor indicator of future reliability, enabling operators to reduce costs in the short run by diminishing an unmeasured output (e.g. operational risk on the network)
 - The output cannot be sufficiently well-measured or controlled so a high-powered incentive may expose the operator to too much risk (e.g. congestion costs)
 - The desired output strongly resembles an input (e.g. roll-out of an electric car charging network)

The use of outputs and inputs over the regulatory cycle



Using inputs where they have the greatest value (and avoiding areas where they destroy value)

- Target setting
 - Inputs should be used to set *ex ante* cost allowances
 - Business plans should be “well-justified”, describing what the operators need to do, the other options considered, the efficiency tests applied, etc.
 - The regulator can then evaluate the plans for value for money
- The special case of risky, discrete investments
 - The regulator needs to provide some legitimacy for the plan, otherwise, there is a risk that the asset could get stranded, or not provided at all
 - But, the regulator should only intervene in these special cases if there is a clear cut case for doing so
 - The onus should be on the operator to prepare these “investment ahead of need” scenarios for critical evaluation
- During the price control
 - Monitoring against the plan
- At the end of the price control period
 - Inputs used as a proxy for an output (e.g. leading indicator of reliability): when evaluating performance, apply a high margin for error to avoid being drawn into micro-management of the businesses
 - Inputs used to legitimise specific investments: apply a lower margin for error, in the limit simply evaluating whether the project been done or not, and reward and penalise on that basis

Relevance for other sectors and countries

- Ofgem has re-affirmed the importance of incentives and an output oriented regime
 - It has not reverted to cost-plus regulation
- But, the definition of the regime is complex and needs to be calibrated with care to avoid collapsing into input-based (or cost-plus) regulation
- For other regulators, policy-makers and operators, a common set of questions apply in the light of the RPI-X@20 review
 - Have we properly defined the services we expect of infrastructure operators
 - Are they valued by customers and other stakeholders
 - Are we using the right incentive mechanisms to promote delivery of the outputs?
 - How well does the regime handle uncertainty and the need to promote innovation?
 - Does the regime apply input-based regulation in the least distortionary way?
 - Do we need to rethink the parameters of the price control formula?



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