

# RIIO ET2 – Costs & Outputs Working Group

## Cost Assessment Methodology



# **RIIO 2 Framework Decision**

# RIO 2 Framework Decision

## Signal direction of travel for further reform

- Aim to clarify and **simplify our approach** to setting outputs and cost allowances
- Where we can **confidently forecast** costs using independent benchmarks or historical information we will continue to provide **incentives on companies to outperform**
- Where we **cannot forecast with confidence** we will use mechanisms to **protect consumers** against paying for costs that are subsequently not required
- Use **indices where appropriate** to reduce reliance on forecasts
- Continue to set **outputs** as a set of **consumer-facing outcomes**

## Approach to setting outputs and allowances

- **Information Revealing Devices (IRD)** in current form are **not working** in the way intended
- Arrangements to encourage good **business plans** can be **simplified**
- **Early settlement** is **not suitable** for Transmission
- **Licence obligations** will set **enforceable minimum standards**
- **Price Control Deliverables (PCDs)** directly associated with baseline funding and a clear methodology of **what happens** if an activity is **not delivered, delivered late, or to a lower specification**
- **Output Delivery Incentives (ODIs)** for service quality improvements using incentive mechanisms to **reward or penalise performance**
- Co's that have **performed poorly** in current Price Control should be required to **improve** their performance **without additional RIO 2 revenues**

# RIO 2 Framework Decision

## Protect consumers against forecasting risk

- Where appropriate **use competition** rather than forecasts to set prices for new, separable and **high value investment projects**
- **Simplified incentives** to reward well justified, ambitious and high quality plans
- **Index uncertain costs** where possible
- Use **volume drivers** where unit costs are stable but quantities difficult to predict
- Use **revenue drivers** or within period mechanisms such as SWW where uncertainty over the scope of work and potential costs are significant
- **Incentivise** Co's to **drive down costs** when setting baseline allowances
- Consideration given to **long term view of costs** spanning multiple price controls
- Consider **resetting** certain cost **allowances automatically** during the price control period.

**RIIO T1  
Cost Assessment  
Tools**

# RIIO T1 – Cost Assessment Tools

A proportionate, output focused approach to cost assessment using a toolkit of methodologies:

- Totex benchmarking
- Disaggregated benchmarking
- Historical trend analysis
- Asset unit cost analysis
- Output unit cost analysis
- Expert review
- Project by project review

RIIO emphasises the use of benchmarking as a means of informing our assessment of forecasts rather than as a mechanistic means of setting allowances

- TO's need to demonstrate their proposals are cost efficient for delivering the proposed outputs over the long term

# RIO T1 – Cost Assessment Tools

## Cost Assessment Techniques

Assessment	Direct Opex	Indirect Opex	Load Related Capex	Non-Load Related Capex	Non Op Capex
Total Exp' Benchmarking			✓		
Disaggregated Benchmarking	✓	✓	✗	✓	✓
Historical Trend Analysis	✓	✓	✓	✓	✓
Unit Quantity Analysis	✓	✗	✓	✓	✓
Asset Unit Cost Analysis	✓	✗	✓	✓	✓
Output Unit Cost Analysis	✗	✗	✓	✓	✓
Expert Review	✓	✓	✓	✓	✓
Project by Project Review	✗	✓	✓	✓	✓

# RIIO T1 – Cost Assessment Tools

Utilise a combination of top down and bottom up analysis

- Top down approaches applied to a whole TO or to disaggregated components
- Bottom Up splits the cost base into the key individual activities

Annual cost reporting data means there is much more comprehensive cost and driver information available across activities

- Scope to make greater use of more disaggregated benchmark approaches

Benchmark total expenditure over a number of years data using suitable cost drivers

- Carry out benchmarking between the GB TO's but note the different scale of the 3 businesses
- Where appropriate utilise external data comparators: DNO's, Offshore & international data sources e.g. CEER & CIGRE

Totex cost drivers under review.

- peak demand; peak generation; capacity; network density & asset metrics

# RIIO T1 – Capex Cost Assessment

Carry out both load and non-load related modelling

- Our view on intervention volumes based on risk modelling informed by age based modelling and info provided by TO's on secondary deliverables relating to asset health, criticality and replacement/risk priorities

**Capital Expenditure - Load Related**

- Take a view on unit costs informed through comparisons, market intelligence, benchmarking, expert advice, historical costs & justification for forecast proposals

Carry out high level modelling for Load related capex based on capacity requirement

- focused on expenditure required at key boundaries and the costs of associated projects

Undertake unit cost analysis with expert advice on appropriate levels of unit costs for the major asset types

- transformers, switchgear, metering, control, overhead lines, underground cables, other substation expenditure.

# RIIO T1 – Capex Cost Assessment

## Capital Expenditure – Non Load Related

Assessment of expected efficient costs based on analysis of the forecasts in Co's business plans.

- Onus on Co's to demonstrate their forecast costs are reasonable and linked to the delivery of outputs.
- Business plans to demonstrate total NLRE cost, planned volume and unit cost of delivery are efficient and that suitable range of options have been considered.

Range of techniques to assess Co's forecasts – historical trend analysis, quantity and unit cost analysis

- Historical trend analysis & disaggregated benchmarking on NLRE & some of its sub-components
- Analyse expenditure incurred during prior periods, projected changes to historical expenditure and look to TO's to explain these changes

Consider both the volume of asset replacement required and the efficient level of unit costs.

- Our view on intervention volumes based on risk modelling informed by: aged based modelling, info provided by TO's on secondary deliverables relating to asset health, criticality and replacement/risk priorities

# RIIO T1 – Capex Cost Assessment

## Agree a consistent set of definitions of unit costs informed by

- expert advice, historical costs, cost comparison between TO's & DNOs, justification provided in the business plans

## Assess changes in efficient levels of unit costs over time

- Onus on Co's to demonstrate efficiency of their unit costs

## Project by project review

- seek expert advice on efficient level of costs for a subset of representative schemes and large scale projects

## Bottom up analysis for projects of a sufficiently large scale

## TO's encouraged to take the whole of life cost of losses into account

- TO's to explain the way cost of losses are accounted for in equipment purchases and project designs

# RIIO T1 – Opex Cost Assessment

## Direct Operating Expenditure

- Assessment of outputs informed by the plans put forward by the network Co's.
- Determine if proposed level of costs is consistent with the delivery of primary outputs and represents long term value for money.

## Range of cost assessment tools employed

- disaggregated benchmarking, historical trend analysis, unit quantity analysis, unit cost analysis and expert review of the programme

## More disaggregated and bottom up analysis for direct opex and CAIs

- Assessing TO's forecast quantities and unit costs, comparing to historical quantities and costs, trends and benchmark comparators
- Conducting expert review of key policies and practices, in particular TO's asset management strategies with possible expert review

## Benchmark direct operating costs

- apply similar trend analysis, comparison and benchmarking to unit costs and quantities

# RIIO T1 – Methodology Appraisal

## Value Adding

Volume Drivers

Approach to modelling costs

Revenue Drivers

NOMs - Asset Health & Criticality

Volume drivers acted in the way we needed them to (e.g. generation connections)

Multiple models provide a useful level of insight on appropriate levels of spend and activity

Drove right behaviours and allowed assessment when need and cost certainty had crystallised (e.g. SWW)

Added a greater level of sophistication and understanding of asset management needs case

## Unintended Outcomes

Scenario Planning

Relationship between inputs & outputs

Ex-ante RPE's

Lack of physical evidence

Actual outturn diverged significantly, volume drivers designed to deal with minor oscillations

Disconnect between inputs and outputs. No bind on Co's to deliver the "how" assumed in business plan leading to unanticipated "innovation"

Assumed impact not as great as originally assumed

No physical audit of pre/post asset interventions

# **RIIO T2 Cost Assessment Initial Thoughts**

Evolution rather than Revolution

# RIIO 2 Costs & Outputs Principles

In designing RIIO-2, we will take into account **RIIO-1 lessons learnt**.

Make the **output categories** for RIIO-2 as **intuitive and simple** as possible, by consolidating existing output categories into three categories.

- Licence obligations – for minimum standards of performance;
- Price control deliverables – to capture commitments made in the initial price control settlement; and
- Financially/ reputationally incentivised outputs – to incentivise service level improvements “above and beyond” the minimum standards.

Company-specific **outputs** (ODIs and Price Control Deliverables) will have a **clear rationale** and be based on **robust evidence**

# RIO 2 Costs & Outputs Principles

Our outputs and incentive framework should as far as possible adhere to the following principles:

## In setting outputs -

- Be as **complete** as possible;
- Focus on **simpler, more intuitive** output categories, of value to consumers;
- Allow **comparison** of performance across companies where there is sufficient commonality; and
- Capture the **long-term nature** of outputs.

## In setting incentives and determining consequences -

- Reflect the **network services that existing and future consumers require**, holding companies to account where they fail to deliver;
- Provide the **right balance** between **rewards and penalties** in the context of the challenges facing the companies; and
- Enable **clear regulatory treatment of outputs** to be delivered in the next price control period.

# RIIO 2 Cost Mechanism

Indexation of uncertain costs (e.g. RPE's)

Volume drivers – costs known but volumes uncertain

Revenue drivers- costs and volumes uncertain

Cost Benefit Analysis

Predictability of costs and appropriateness for ex-ante allowance and sharing factors

Justification provided in plans and how this has been assessed by TO's

How TO's have assessed uncertainty & their approach to this in plans

Assessment of achievability (What/How/Why) in light of historical performance

Develop better understanding and correlation of outputs and inputs

# RIIO 2 Cost Assessment Models

## Totex Top Down

- broad indicator of reasonableness of total plan

## Disaggregated Top Down

- indicator of reasonableness of component parts of plan

Multiple view/analysis to  
give a robust & balanced  
view of costs & outputs

## Disaggregated Bottom Up

- splits the cost base into the key individual activities
- detailed assessment Capex & Opex
- utilise historical trend analysis
- utilise unit cost analysis (asset/output)

## Project by Project Review

- Expert Review (in-house/consultants)

- Develop models that are consistent with engineering, operational and economic understanding of cost drivers.
- Model Weighting determined on statistical relevance, availability of quality information & cost drivers

# RIIO 2 Areas of Focus & Development

## Focus on bottom up analysis

- Greater weight & emphasis on conducting disaggregated bottom up analysis where possible
- Direct Opex & Indirects could lend themselves to traditional regression analysis
- TO opinion on cost driver selection criteria?

## Capex (LR/NLR)- UCA/project review/expert analysis

- Capex analysis will utilise Unit Cost Analysis informed by historic data; expert review & independent sources (e.g. Offshore; DNO @ 132kV; International benchmarking etc.)
- Undertake a detailed review at project level: needs case; unit costs; output achieved; delivery method employed

## Why/What/How

- Improve ability to assess the Why/What/How of programme delivery for both Business Plan and actuals
- Well Justified plan - plan divergence and alternative outcomes should be as justified

## One dimensional outputs

- Is single assessment criteria for delivery still appropriate
- Balanced performance indicators to drive right behaviours and mitigate unintended consequences
- Assess TO effectiveness in overarching role as asset steward
- Develop concept of monetised risk
- Improve linkage between outputs & inputs in Business Plan and subsequent monitoring during the Price Control

# RIIO 2 Well Justified(Why/What/How)

## Need for investment

- What incremental improvement does investment deliver?
- Is there persuasive evidence that an investment is required?
- Where appropriate, is there evidence – assured by the consumer challenge group – that consumers support the project?

## Best option for customers

- Does the investment deliver outcomes that reflect customers' priorities
- Did the company consider an appropriate range of options with a robust cost–benefit analysis before concluding that the proposed option should be pursued?
- Is there persuasive evidence that the proposed solution represents the best value for customers in the long term, including evidence from consumer engagement?
- Has risk been assessed? Have flexible, lower risk solutions been assessed?

## Robustness and efficiency of costs

- Is there persuasive evidence that the cost estimates are robust and efficient?
- Is there high quality third party assurance for the robustness of the cost estimates?
- Expect companies to explain how their efficiency gains compare to broader evidence of efficiency gains from best practice in the wider economy.
- Where practicable, we expect companies to benchmark their performance, not only against their peers in the energy sector, but also against performance in other sectors.

# RIIO 2 Well Justified(Why/What/How)

## Customer protection

- Are customers protected if the investment is cancelled, delayed or reduced in scope?

## Affordability

- Has the impact on affordability been considered?

## Board assurance

- Does the company's Board provide assurance that investment proposals are robust and deliverable, that a proper appraisal of options has taken place and that the option proposed is the best one for customers?

# RIIO 2 Further Discussion Points

## CBA's in plan & Post Investment Appraisal

- How are TOs developing their approach to CBAs and how will this be reflected in Business Plans and subsequent reporting during the Price Control?
- Look to develop this concept further at next WG

## Monetised risk

- How are TOs developing their approach to monetising risk and how will this be reflected in Business Plans and subsequent reporting during the Price Control?

## Baseline Funding

- Best methodology for differentiating between ex-ante funding & the appropriate use of Uncertainty Mechanisms?
- Well Justified Plans and how TO's intend to deal with uncertainty within their plans?
- How will TO's address any material departures in delivery plan? What happens if an activity is not delivered, delivered late, or to a lower specification?

## BPs dealing with scenario divergence

- What plans do TOs have to deal with any material scenario divergence in their plan submission and the resultant activity & funding levels in RIIO2

# RIO 2 Cost Assessment Questions

## Cost Categorisation

- Does current unit cost/activity categorisation need changed?
- Any issues or inconsistencies in reporting against current categorisations?
- What value, if any, do we achieve by distinguishing Direct Opex, does it inhibit solution selection?
- What value, if any, do we derive from reporting overhead capitalisation

## Cost Drivers

- What makes a good cost driver?
- Any better/new cost drivers that could be used?

## Cost Modelling

- Should we continue to use both Top Down & Bottom up approaches to cost assessment?
- Does disaggregated modelling adequately inform overall cost performance?
- How should weightings for different cost models & cost drivers be determined?

## Physical audits

- Views on Ofgem conducting physical asset audits pre & post intervention?

## Cost Summary table

- Intention to include Cost Summary table for Transmission reporting (akin to Table C1 in ED) does this raise any undue concerns with TOs?

# RIIO 2 Cost Assessment Next Steps

The focus at this stage is to ensure that we have developed the principles to determine whether or not cost assessment tools (e.g. volume/revenue drivers, benchmarks, CBA) and allowance setting mechanisms (e.g. uncertainty mechanisms, reopeners) are fit for purpose.



Further detail of what tools are best suited to coping with different aspects of the business plan and the detailed mechanisms will be developed later in 2019.

**Our core purpose is to ensure that all consumers can get good value and service from the energy market. In support of this we favour market solutions where practical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.**

**We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.**