

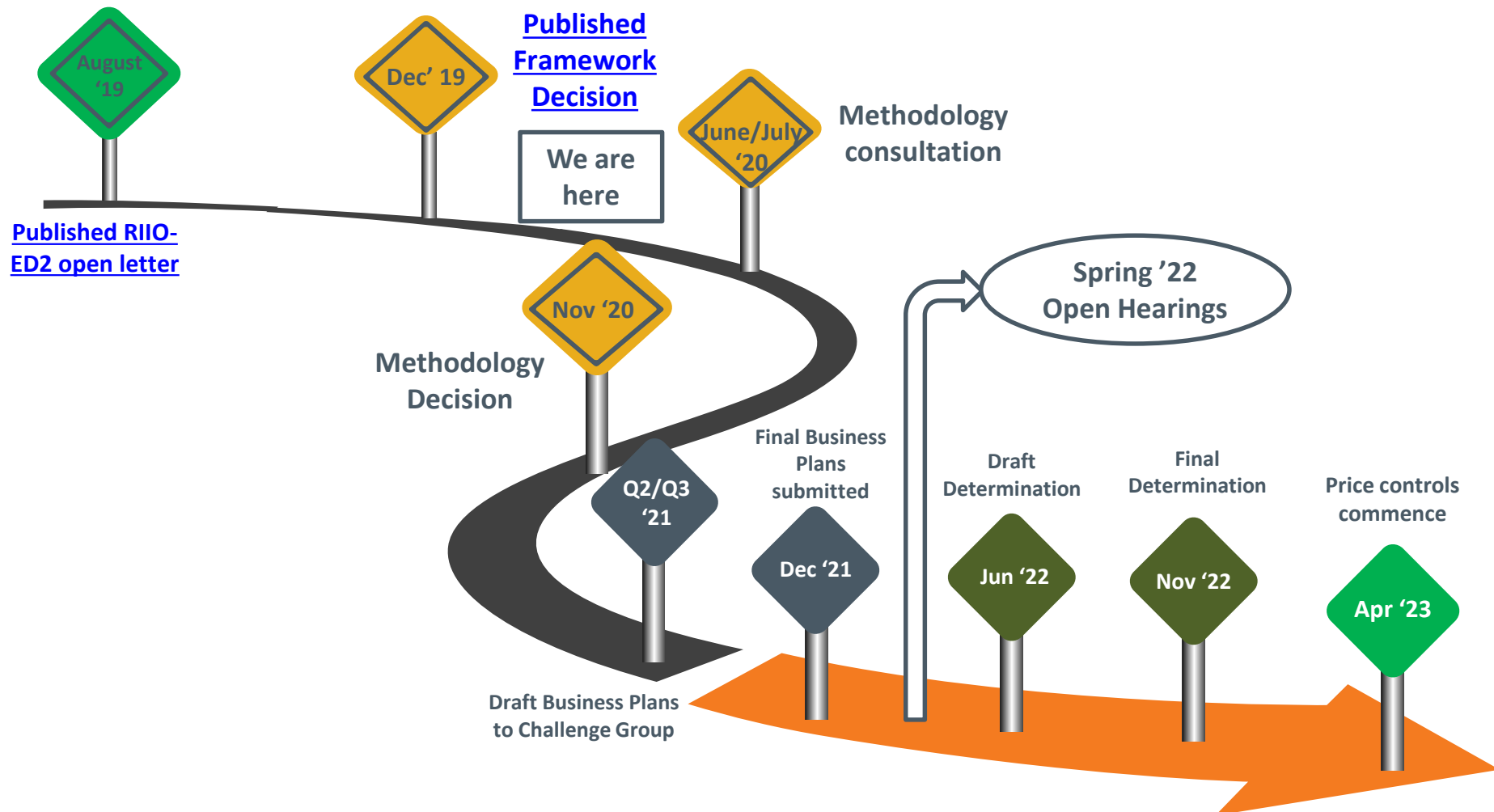
RIO-ED2

Cost Assessment Working Group – Meeting 6



Electricity Distribution Team
8th April 2020

- Welcome and Introductions: 10:00-10:15
- NPG presentation on Uncertainty Mechanisms: 10:15-10:45
- WPD presentation on how it all fits together: 10:45-11:15
- ENWL presentation on how it all fits together: 11:15-12:00
- Ofgem review of CAWG priorities: 12:00-12:15
- Ofgem presentation on Scenarios and Forecasting: 12:15-12:30
- Actions, Next Steps, and AOB: 12:30-12:45



- We propose to hold a WG session approximately every three weeks with feedback sessions to make sure all ground is covered and prioritised appropriately.
- We plan to run sessions in the Glasgow and London Ofgem offices.
- Depending on room availability, we may need to restrict the number of representatives that each member organisation sends to meetings of the Group

Date	Location	Summary	Items to cover
14 January 20	London	Introductory session	ToR, Priorities
11-Feb-20	Glasgow	Key principles	
25-Feb-20	London	Totex, BPI & interpolation, Regional and special factors, How it all fits together	Drivers, duration periods, role of history vs forecasts Review totex models
13-Mar-20	London	Role of disagg modelling	Review of ED1 and GD2 disagg models PR19 and middle model reviews
27-Mar-20	London	Productivity, frontier shift, indexation, RPEs	
8-Apr-20	London	Uncertainty mechanisms How it all fits together (again)	
28-Apr-20	Glasgow	CBA development EJP development	

Specifying uncertainty mechanisms

23. Where there is **material uncertainty in the evolution of prices** at the start of a control period, **indexation should be used to avoid forecasting errors** – this includes the prices of financial securities as well as the prices of labour and construction materials.
24. Where there is **material uncertainty in the evolution of quantities (but unit rates are stable)** at the start of the control period, **volume drivers should be used to adjust allowances** within the control period.
25. Where there is **material uncertainty as to both prices and quantities (and/or the economic needs case is not proven, or the scope of expenditure is unclear)** at the start of the control period, **a reopener should be used to consider variation in allowances** within the control period.
26. If **scope changes during the control period so that allowances are no longer required** (or are delivered to a materially different specification), there should be **automatic mechanisms to return such unused allowances to consumers** (identified upfront as price control deliverables).

NPG presentation on Uncertainty Mechanisms



ED2 uncertainty mechanisms

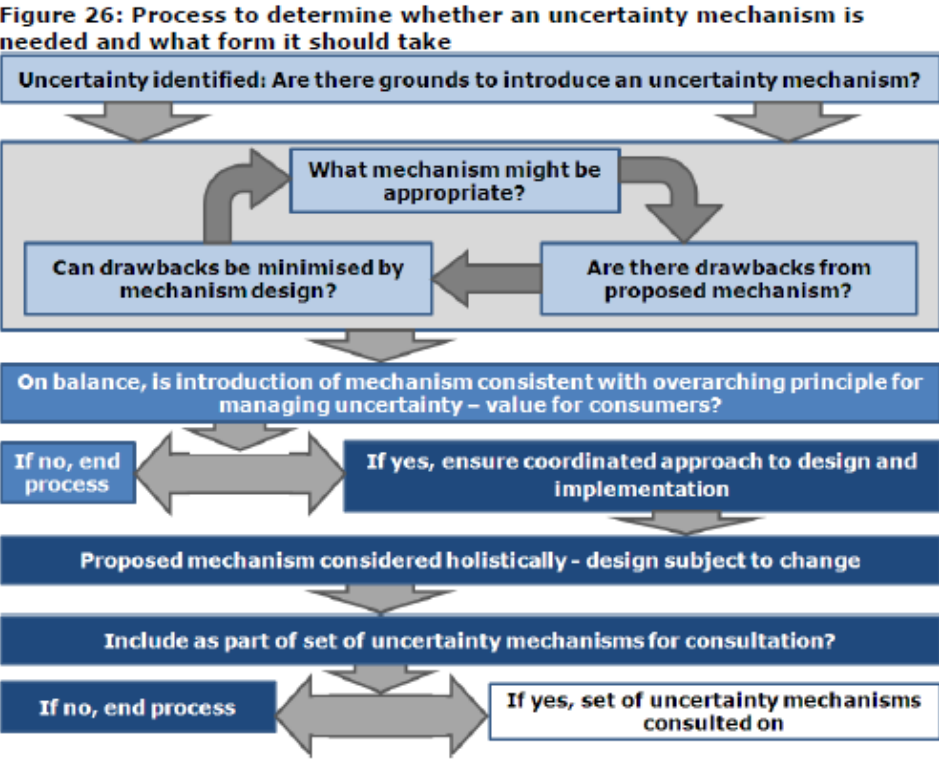
*Presentation to the
ED2 cost assessment working group
8 April 2020*

Setting uncertainty mechanisms early is an important ingredient for submission of a coherent business plan under RIIO

- Under RIIO, Ofgem aims to set uncertainty mechanisms ahead of business plan submission
- The cost assessment working group therefore needs to consider:
 - Areas of uncertainty that would warrant a specific mechanism
 - The design of those mechanisms
- This can then:
 - feed into the methodology consultation; and
 - allow Ofgem to take decisions before business plan submission
- To aid this process this pack sets out:
 - The process that Ofgem set out in the RIIO Handbook
 - The principles and criteria Ofgem has established for uncertainty mechanisms
 - A taxonomy of the potential mechanisms
 - A simple checklist that group members can use to feed into the process
 - Northern Powergrid's views on potential mechanisms

The full set of uncertainty mechanisms needs to be developed and managed as a single package

Single Ofgem team with responsibility



“To ensure that the decision to implement an uncertainty mechanism is consistent with the principles set out here, there will be clear responsibility within the price control team for monitoring the design and implementation of the potential range of proposed uncertainty mechanisms”

“The decision to implement an uncertainty mechanism will need to be based on clear grounds and take account of the potential drawbacks of the mechanism”

“...holistic consideration of proposed mechanisms could present opportunities to ‘bundle’ those with similar aims”

“We will need to identify areas where uncertainty mechanisms may be required or removed at an early stage in the price control, alongside potential design options.”

“We expect network companies to manage the uncertainty they face. The regulatory regime should not protect network companies against all forms of uncertainty. The use of uncertainty mechanisms should be limited to instances in which they will deliver value for money for existing and future consumers while also protecting the ability of networks to finance efficient delivery”

Ofgem, 2012, RIIO Handbook, box 9

Cost of capital /
financeability

- Will the mechanism reduce the cost of capital and thus costs to energy consumers?
- Is the mechanism necessary to ensure that efficient costs are financed?

Consumer exposure
to uncertainty

- How challenging is forecasting of likely cost pressures, and are gains likely to be due to good luck rather than good management?
- Does the transfer of risk from companies to consumers represent good value?

Efficiency incentives

- Options need to be considered against the incentives they may create.
- Do protections reduce or eliminate company incentives to manage costs and uncertainty efficiently?

Risk of unintended
consequences

- Will the mechanism let companies obtain money for things they were not intended to allow?
- Could overlapping mechanisms create opportunities to “game” the outcome?

Complexity

- How much complexity will the mechanism add to the regime, and will it reduce transparency?
- Should the mechanism be avoided on the grounds of better regulation?

Information
availability

- Is the uncertainty limited to one aspect e.g. volumes?
- Is information available to calibrate a mechanism upfront?

Resource costs

- What are the costs of designing, implementing and managing the uncertainty mechanism?
- Are resources being appropriately targeted?

Table 5: Description of types of uncertainty mechanism

Tool	Summary of provision in price control licence
Indexation	Provision that adjusts the revenue the company is allowed to collect from customers according to changes in a specified price index (e.g. the RPI or a published input price index).
Volume driver calibrated at price control review	Provision allowing revenue to vary as a function of a volume measure (e.g. number of new connections).
Revenue trigger calibrated at price control review	Provision allowing revenue to increase/decrease by a specified amount (or in a specified way) if and when certain trigger events occur during the price control period.
Use it or lose it mechanism	If revenue set aside for a specified activity or purpose is not used as intended, revenue can be adjusted to remove this allowance.
Revenue adjustment based on updated cost assessment if trigger event occurs (e.g. specific re-opener)	Provision allowing for a specific part of the company's revenue allowance to be reviewed and potentially adjusted by Ofgem during the price control period, on a forward-looking basis, if and when specified conditions are met (e.g. if a measure of customer demand exceeds a specified thresholds).
Pass-through items	Provides that the company will be fully or partially compensated for costs incurred in specified areas or on specified items (e.g. Ofgem licence fees).
Logging up of actual expenditure subject to ex post efficiency review	Provides that a company will be fully compensated for actual expenditure on a certain activity, through the revenue allowance set at the next price control review, at least insofar as Ofgem determines the relevant expenditure was efficiently incurred.
Backward-looking revenue adjustment based on benchmarking analysis of outturn costs	A company will receive an amount of revenue, in respect of a particular activity or output, which Ofgem will determine based on benchmarking analysis of other companies' actual expenditure on that activity or output. This mechanism may be considered where the activity or output is new and there is no historical expenditure data to use for benchmarking at the time the price control is set.

Uncertainty mechanisms fully calibrated at the price control review

Forward-looking revenue adjustment determined by Ofgem during price control

Revenue allowance determined after company incurs relevant expenditure

Overlap with other mechanisms, like network deliverables and incentive schemes, also needs to be considered

“Where there is uncertainty about the need for a secondary deliverable, it may be more appropriate to include an uncertainty mechanism to reduce the risk that consumers pay for a secondary deliverable that does not represent value for money in the long term.”

Ofgem, 2012, RIIO Handbook, Table 4

Overlaps between incentives schemes and uncertainty mechanisms are also possible, and some incentives can become more akin to uncertainty mechanisms (depending on their design).

Areas of uncertainty

The first step is to identify potential areas of uncertainty – with the obvious starting point being mechanisms already on the table

Cost area ^[1]	Status
Load related expenditure & net to gross ratio	ED1 reopener
Licence fees, exit charges ^[2] , business rates	ED1 pass through
High value projects	ED1 reopener
Critical site security	ED1 reopener
Street works costs	ED1 reopener
Rail electrification	ED1 reopener
Link boxes	ED1 reopener
Smart meter interventions	ED1 volume driver
DCC fixed costs	ED1 pass through
Smart meter IT	ED1 pass through with potential review
General inflation	ED1 indexation mechanism
Real price effects	Indexation proposed for GD2 and T2
Cyber costs	Proposed reopener at GD2 and T2
Cross sector co-ordination	Proposed reopener at GD2 and T2

1. Is this a complete list of existing uncertainty mechanisms?
2. Are there any other areas of uncertainty think require a mechanism?
3. Would licensees reform or remove any of the existing mechanisms?
4. How should mechanisms be designed to address any new areas of uncertainty

[1] Excludes licensee specific mechanisms

[2] Covers exit charges at pre-energised exit points

Our initial view is that several mechanisms can now be removed; some need to be reformed; there is a relatively weak case for entirely new mechanisms

Cost area	Is a mechanism needed?	Views on mechanism design
Load related expenditure & net to gross ratio	Yes – major financial impacts	Reform mechanism. Use a volume driver based on HP and EV uptake levels, with option for reopener if total expenditure strays too far from re-based allowances
Licence fees, exit charges , business rates	Yes – beyond licensee control	Retain existing mechanism
High value projects	Yes – major financial impacts	Retain existing mechanism
Critical site security	Possibly	Retain existing mechanism
Street works costs	Possibly	Remove or use automatic adjustments based on timing of new permit / lane rental scheme coverage
Rail Electrification	Possibly	Remove or potentially retain (and extend to cover new rail build).
Link boxes	No – uncertainty resolved	N/A
Smart meter interventions	No – uncertainty resolved	Move into totex allowances
DCC fixed costs	Yes – beyond licensee control	Retain for DCC fixed costs
Smart meter IT	TBC	Potentially move IT costs into totex allowances
Inflation indexation	Yes	Retain existing mechanism (noting the move to CPIH)
RPE indexation	Yes (if totex RPE allowance not given)	Must ensure NPV neutrality for move to CPIH
Cyber costs	No	Badly suited to reopener due to cost boundaries
Cross sector co-ordination	No	Badly suited to reopener due to potential to “game” mechanism

Uncertainty mechanisms should be used sparingly and in a way that maintains strong incentives for efficient delivery

- Ofgem has identified many drawbacks of uncertainty mechanisms
- The most critical of these is that uncertainty mechanisms are capable of undermining efficiency incentives and the totex approach to regulation, since:
 - Cost boundaries may be difficult to monitor and manage, while companies may be able to “optimise” their delivery model
 - Different benchmarking approaches may be used, when compared to the price review, in any reopener review of costs
- A strong needs case must therefore be made out before one is considered, for example:
 - Could the cost of capital be reduced by a mechanism?
 - Would Ofgem risk falling well short of funding efficient costs if there is no mechanism?
 - Is the risk one that is better placed with consumers than network companies?
- Even once this hurdle is met the design of the mechanism needs to be developed in order to evaluate whether the costs of that a mechanism (e.g. weaker efficiency incentives) outweighs the potential benefits
- At RIIO-2 the move to a shorter price control period, and introduction of a return adjustment mechanism, both help to address some of the underlying reasons for uncertainty mechanisms
- Several of the pre-existing uncertainty mechanisms can now be moved into a totex allowance approach, such as:
 - link boxes; and
 - lane rental costs.
- The biggest area of necessary development is a mechanism to account for uptake of low carbon devices, to augment or replace the existing load related reopener
- Northern Powergrid supports a volume driver based on the uptake of electric vehicles and heat pumps

WPD presentation on *how it all fits together*

HOW IT ALL FITS TOGETHER?

8th April 2020

Please see separately circulated diagram

Summary of the Key Ofgem Decision Points Identified

- BPDT forecasts to embed productivity assumptions? Not RPEs?
- Type of inputs to inform modelling (may vary by model), e.g. gross / net of indirect allocations
- If and how weights applied to combine Agg. and Disagg view? Mid-models too?
- How and when will Ofgem feed separately assessed items back into the process?
- If / how to apply productivity / RPEs dependent on how Ofgem request DNOs to complete BPDTs. Care needs to be taken as to whether “blanket” application is appropriate and to avoid double counting
- Decision regarding the order and level of aggregation to which macro factor adjustments are made:
 - 1) Combine agg and disagg views, then apply macro factors
 - 2) Model agg and disagg, apply macro factors to each separately, then combine
- How to move from view of efficient costs to Ex-ante Allowances?

Anything else?

ENWL presentation on *how it all fits together*



How does the cost assessment framework fit together?

CAWG – 08/04/2020

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- Previous CAWG presented the schematic from Ofwat. This attempts to replicate that for ED1 and give indicative examples for ED2
- Schematics are to help visualise how parts of the process fit together indicatively
- They also help highlight the areas of choice/ summarise the discussions that have been held over the last few months
- We have presented 3 options which are on a spectrum and not absolute in their design i.e. Other options exist on the arrow between 1 and 3



- The content is not designed to state a preference in how it should work for ED2



Data and inputs including external data sources

Totex modelling

Disaggregation and individual modelling

Adjustments and cost exclusions including frontier shift (RPEs and productivity), benchmarks, triangulation, cost adjustments and regional factors

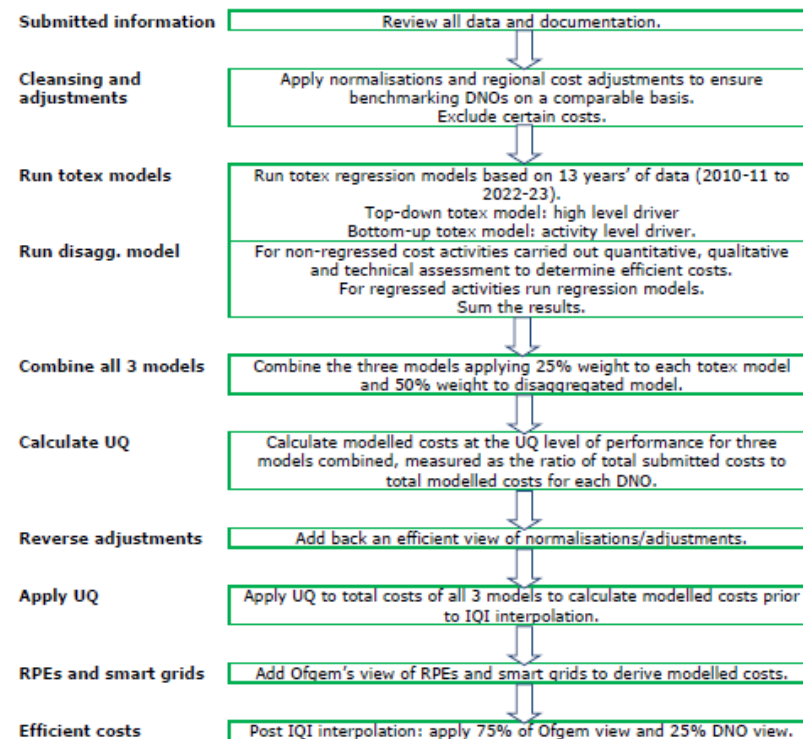
Outputs and allowance aggregation



- Based on the following flow diagram from:

RIIO-ED1: Final determinations for the slow-track electricity distribution companies Business plan expenditure assessment

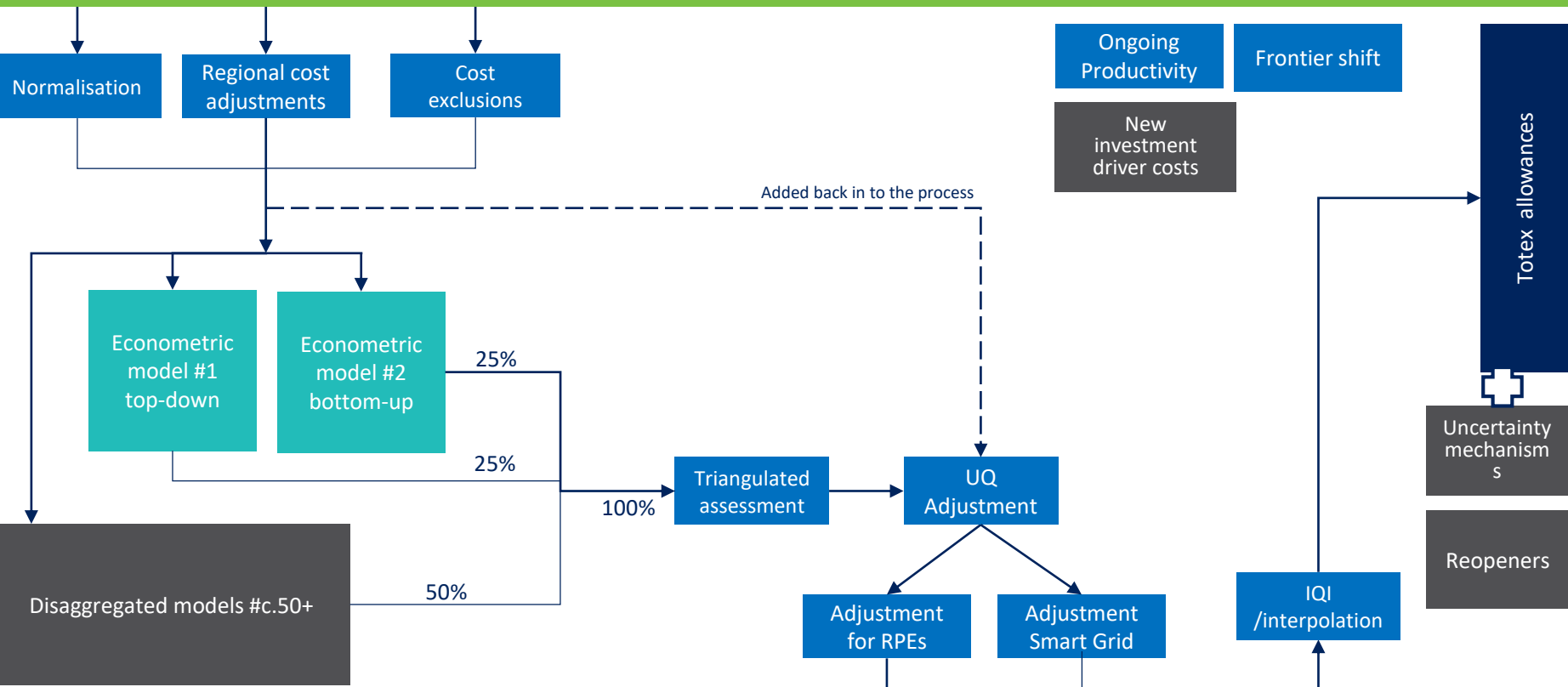
Figure 3.1: Slow-track approach



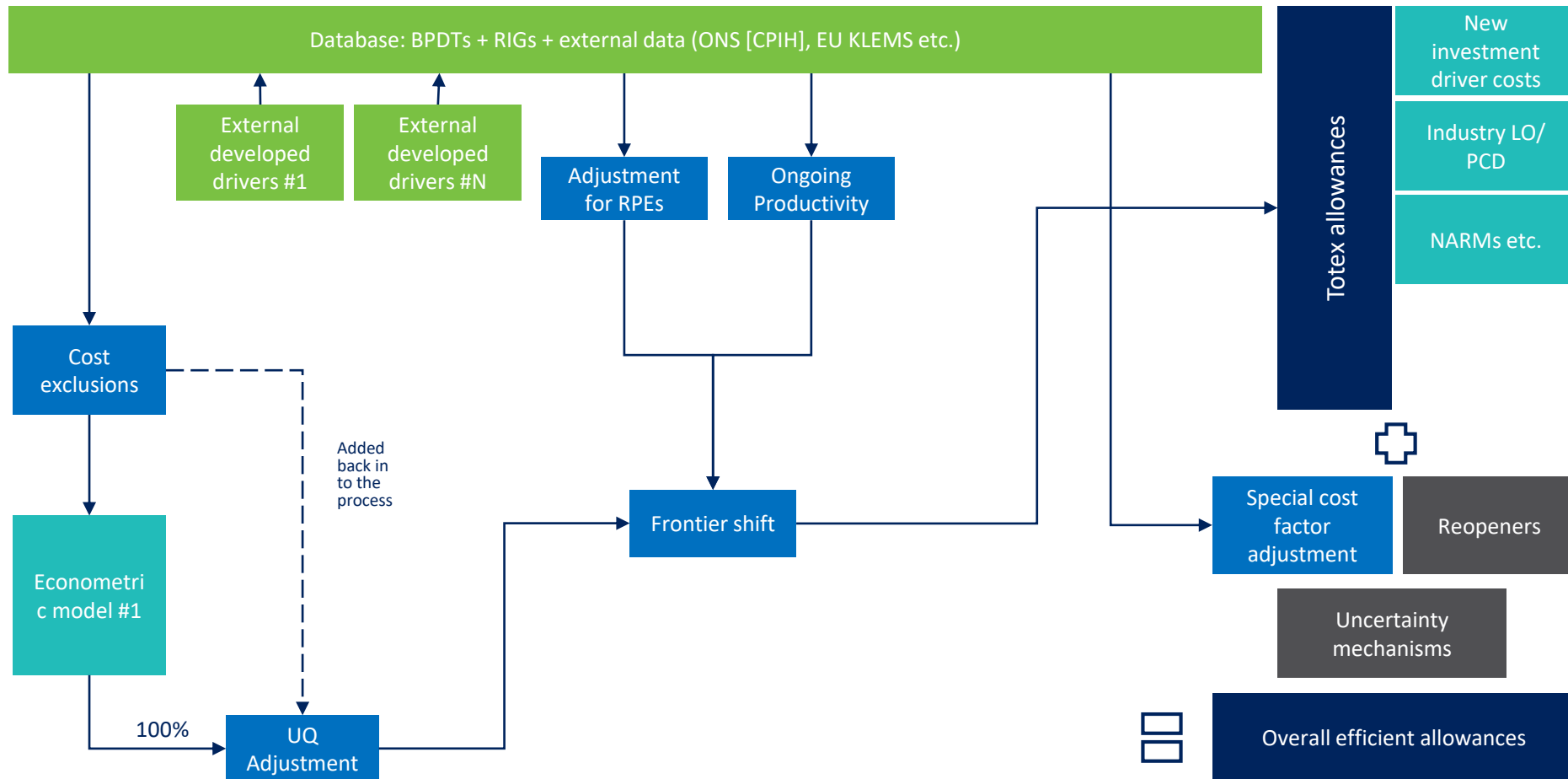
ED1 Schematic



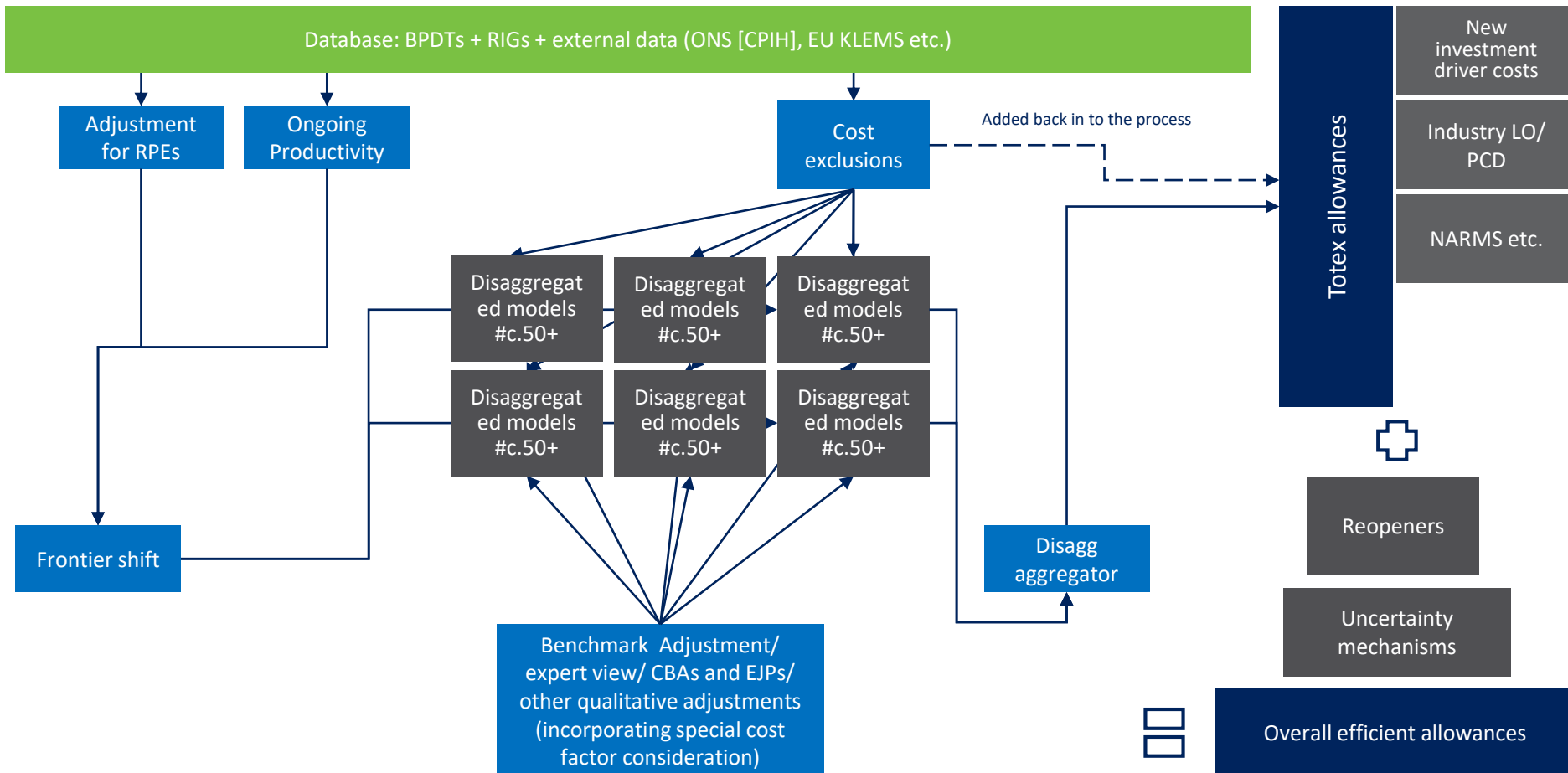
Database: BPDTs + RIGs + external data (ONS [RPI] etc.) including company views on productivity and frontier/ Smart Grid



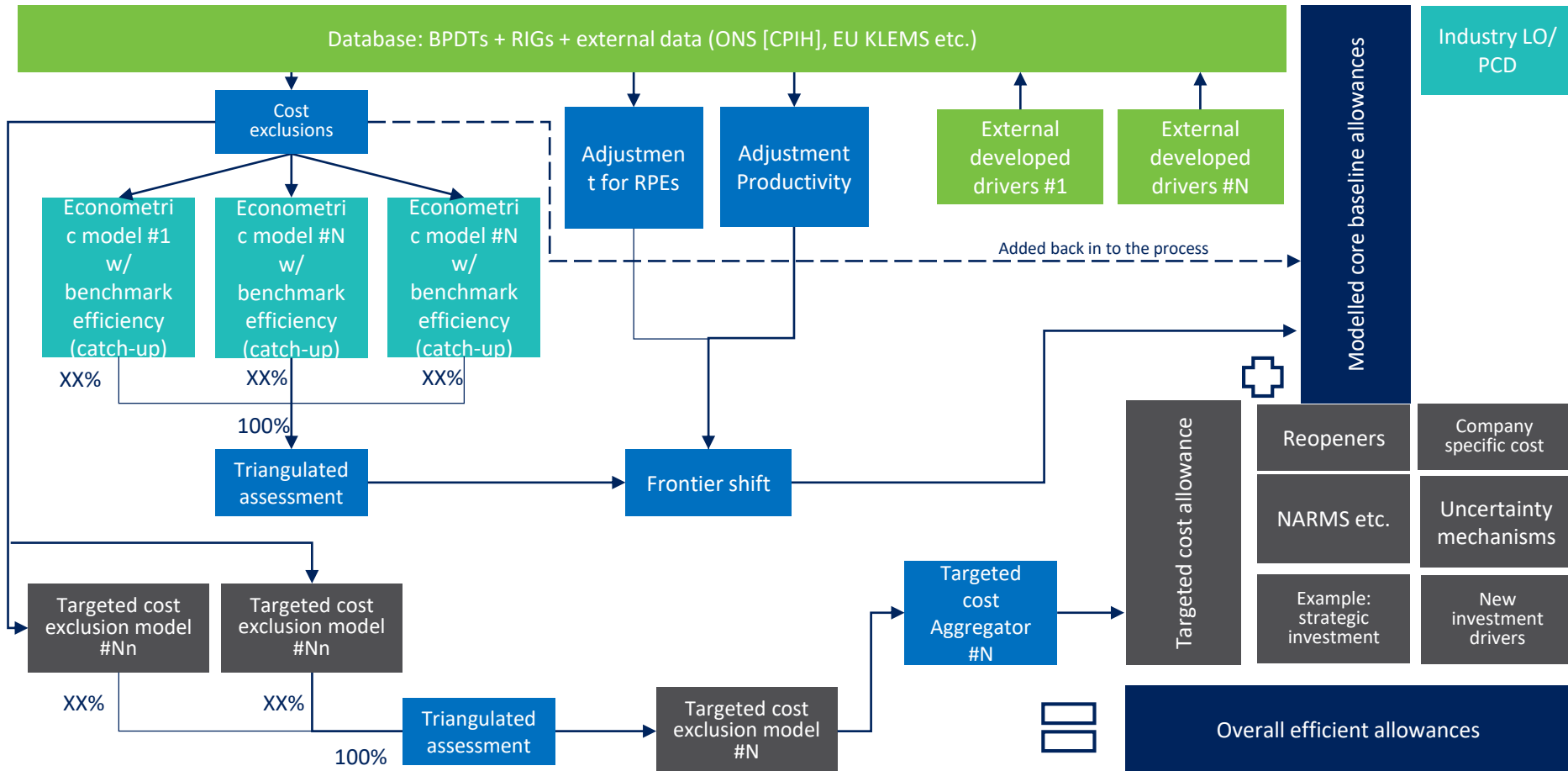
Option 1: Indicative Totex approach



How it all fits together? – Option 3: Indicative Disagg approach



Option 2: Indicative Hybrid approach





- In all three options there are decisions to be made:

Data and inputs including external data sources

Totex modelling

Disaggregation and individual modelling

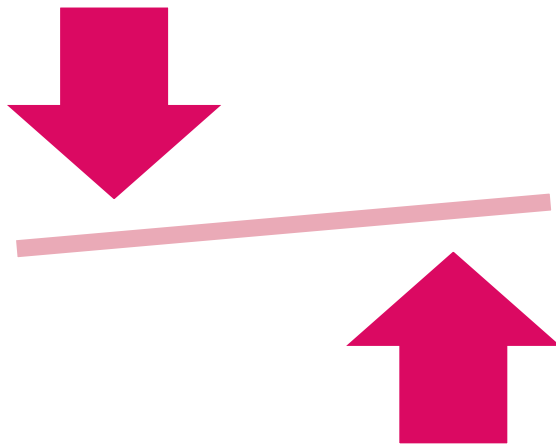
Adjustments and cost exclusions including frontier shift (RPEs and productivity), benchmarks, triangulation, cost adjustments and regional factors

Outputs and allowance aggregation

Trade-offs to ensure
balanced
assessment



There are several options to support this balance:



- Increasing the number, quality and complexity of Totex models (the number of variables controlled for), including mid-models consideration.
- Removing limited and target cost blocks from core Totex assessment process
- Moving the evidential bar up/down for adjustment to modelled costs
- The company and modelled assessment balance (IQI)
- Low confidence/ high confidence cost and links to BPI



Frontier shared at an earlier session the RIIO-GD2 criteria for cost assessment development:

- CEPA/Ofgem developed a set of principles to guide the development of their benchmarking models
- Broad agreement at that meeting that these were a good example

Criteria for cost pools	Principles for cost drivers	Criteria for model selection
<ul style="list-style-type: none"> ▪ complementarity: Is there a strong technical/economic reason to believe that activities or groups of expenditure are complementary and should be benchmarked together and a consistent set of cost drivers can be identified? ▪ cost trade-offs: Can GDNs make trade-offs in expenditure between the different activities/areas included in the cost pool, and so benchmarking those activities/costs together will help avoid biased relative efficiency results or unintended managerial incentives for the GDNs? ▪ cost boundary complexity: How complex is the boundary of cost reporting data that needs to be defined to benchmark the identified cost pool/activity (eg how well defined is the group of costs within Ofgem's regulatory reporting templates)? ▪ risk of inaccurate/biased models: Is there too much 'noise' in the data to be confident that including certain types of expenditure within aggregated regressions could lead to inaccurate model results, or coefficient estimates that are difficult to interpret using engineering/economic logic? 	<ul style="list-style-type: none"> ▪ make economic and/or engineering sense – so they can be interpreted and understood as reasonable and relevant ▪ be accurately and consistently measurable ▪ have a relatively stable relationship with the costs over time and incorporate as much relevant information as possible – in order to be able to distinguish between costs which are explained by differences in exogenous conditions and costs which are explained by differences in efficiency ▪ be beyond the control of the network company, as far as is reasonably practicable, to avoid distorting company incentives in ways which might be ultimately inefficient. 	<ul style="list-style-type: none"> ▪ economic/technical rationale – Do the model specifications and results have a clear economic/technical rationale ▪ transparency – Including the data used, the results and ease of interpretation for stakeholders ▪ robustness – Does the model pass statistical tests? Is the model sensitive to the underlying assumptions

Ofgem review of CAWG priorities

CAWG	Areas Covered
CAWG-1 14-Jan-20	<ul style="list-style-type: none"> • Introductory session • Terms of Reference • Responses to Open Letter Consultation • Ofgem priority areas • Experience and views from ED1
CAWG-2 11-Feb-20	<ul style="list-style-type: none"> • Benchmarking principles • Key principles for Cost Assessment • Cost Assessment priorities and work plan • Totex and Disaggregated Models
CAWG-3 25-Feb-20	<ul style="list-style-type: none"> • Review of Ofgem at RPI-X@20, random effects and ED1 totex models. • Review of ED1 totex models • Business Plan Incentive • Regional and special factors
CAWG-4 13-Mar-20	<ul style="list-style-type: none"> • Review of ED1 disaggregated models • GD2 disaggregated models • Middle models • Ofwats approach to PR19
CAWG-5 27-Mar-20	<ul style="list-style-type: none"> • Productivity and frontier shift • Real Price Effects (RPEs) and indexation • Regional and special factors
CAWG-6 08-Apr-20	<ul style="list-style-type: none"> • Uncertainty mechanisms • How it all fits together • Forecasting
CAWG-7 28-Apr-20	<ul style="list-style-type: none"> • CBA development • EJP development

At CAWG-1 we outlined the following list of priorities:

- Ofgem's costs assessment approach to be outlined in July consultation
- Developing and refining totex benchmarking
- Disaggregated benchmarking
- Data (do we have the necessary data and comparative data for benchmarking)
- CBAs
- Capturing costs for DSO functions
- Justification papers and commentary
- Whole life costs and efficient solutions
- Scenarios (range of scenarios, common view)
- Historical v future performance (how projections are made)
- By group, by DNO
- Transparency
- Use of outputs in benchmarking
- Business Plan Data Templates
- Conversion to allowances

What areas do we still need to spend time on prior to the Sector Specific Methodology Consultation?

Ofgem presentation on Scenarios and Forecasting

From RIIO-ED2 Framework Decision:

- The **forecasts of growth in demand and supply** that DNOs use to establish the need for future network capacity **play a crucial role in the price control**.
- Having **consistency in these forecasts** is also important as it **allows us to benchmark companies** against each other which helps to root out inefficient costs.
- While **the energy system is in transition** it is hard to predict exactly how demand and supply levels will change in the future and so we **expect companies to plan against a range of different scenarios**.
- As we develop our methodology for RIIO-ED2 we will place **increasing scrutiny on the DFES**, to ensure these are being **developed and used in a consistent manner** and that the scenarios that they generate are credible.
- We will also require DNOs to begin work early on a **core baseline scenario** that we can use for benchmarking purposes.

- For context, demand driven revenue is only around 10% of overall network revenues in Electricity Distribution.

Different approaches – two extremes:

Allow each licensee to
propose their own
forecasts, assumptions,
parameters

Ofgem provides some
view, methodology,
scenario, parameters,
and/or forecast prior to
BP submission



- Networks forced to provide and justify their own forecasts
- Networks can be responsible for their view on outcomes (particularly if they provide multiple 'paths')
- Ofgem may end up approving a series of investment plans with inconsistent views of the future
- Greater risk of excessive returns
- Greater reliance placed on efficient operation of uncertainty mechanisms, re-openers, vol. drivers, etc
- Can reduce whole system coordination and benefits

- May constrain the ex-ante revenue pot and lead to consumer savings
- Improves consistency across networks
- Easier to compare and benchmark investment plans
- Resource requirements

- The next meeting will take place on 28th April. It will be teleconference only. We will be covering:
 - CBA development; and
 - EJP development.
- We will circulate notes and an actions log from this meeting.