

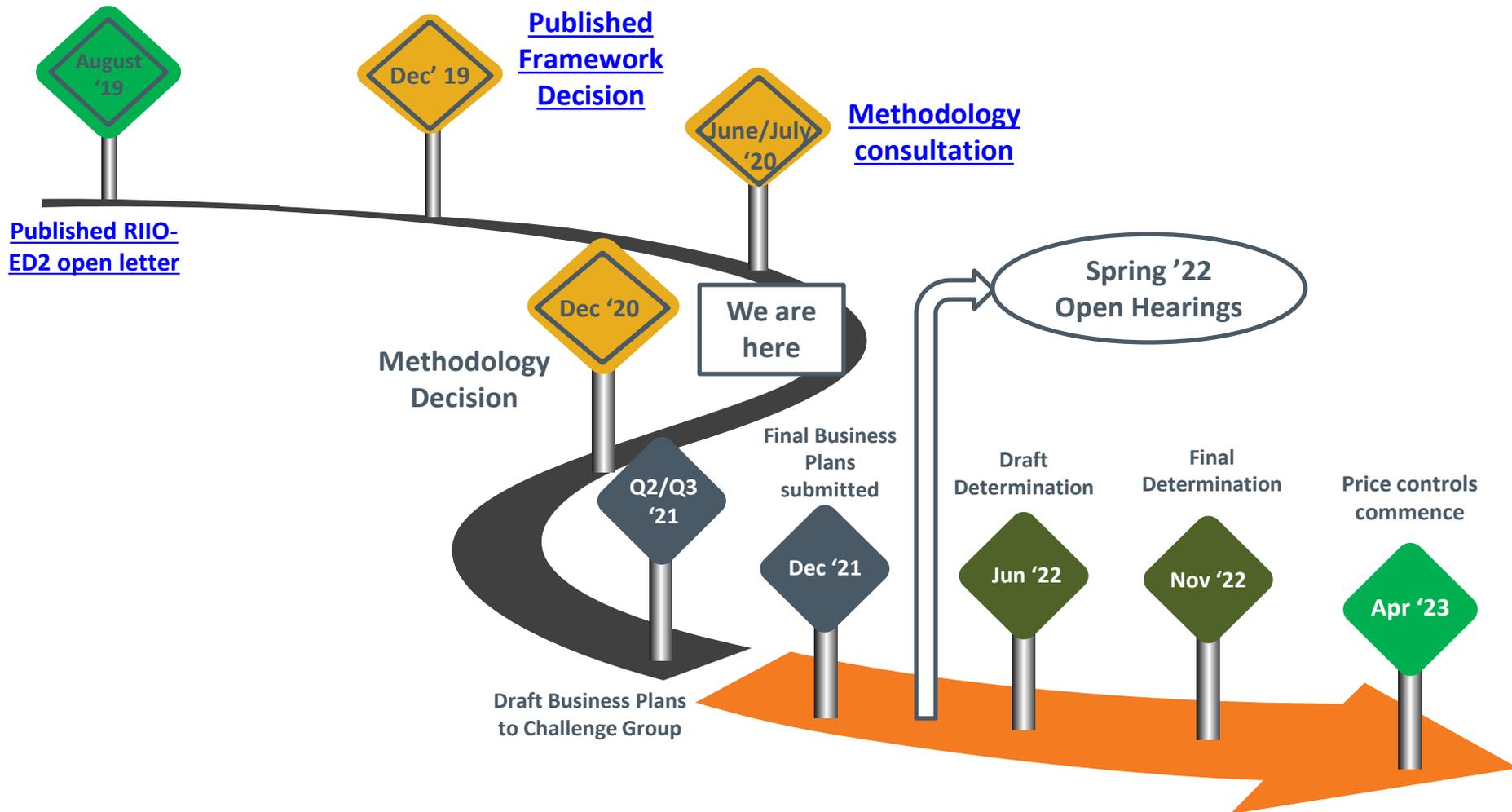
RIIO-ED2

Cost Assessment Working Group – Meeting 12



Electricity Distribution Team
8th October 2020

- Welcome and Introductions
- Uncertainty Mechanisms
- Post-SSMC and DDs discussions
- Forecasting & Scenarios
- Ofgem review of ED2 early forecasts
- DSO Cost Assessment
- Actions, Next Steps, and AOB



Uncertainty Mechanisms

- Uncertainty mechanisms allows us to make adjustments to a network company’s allowance in response to changing developments during the price control period.
- There are four main types of uncertainty mechanism that we are proposing for RIIO-2:
 - **Volume drivers** - Adjust allowances in line with actual volume of work delivered, where volume of certain types of work that will be required over the price control is uncertain
 - **Re-opener mechanisms** - Decide within a price control period on additional allowances to deliver a project or activity once there is more certainty on the needs case, project scope or quantities, or cost
 - **Pass-through mechanisms** - Adjust allowances for costs incurred by the DNO over which they have limited control and that, in general, we consider the full cost should be recoverable
 - **Indexation** - Adjust allowances for costs that network companies have very limited control over, such as general price inflation or interest rates
- The range of RIIO-ED2 uncertainty mechanisms cover several areas of uncertainty:
 - Uncertainty mechanisms to support substantive changes in external policy
 - Uncertainty mechanisms to align allowances with delivery
 - Uncertainty mechanisms for risks outside of the DNOs’ control

- The tables below sets out the summary of uncertainty mechanisms proposed for RIIO-ED2, some are cross-sector in nature, applying to all or some of the RIIO-2 price controls, while others are specific for RIIO-ED2.

| Name | Type of mechanism | Comparison to RIIO-1 |
|--|-------------------------------------|-----------------------------|
| Cross-sector mechanisms | | |
| Ofgem licence fee | Pass-through | No change proposed |
| Business rates | Pass-through | No change proposed |
| Inflation indexation of RAV and allowed return | Indexation | Revised for RIIO-ED2 |
| Cost of debt indexation | Indexation | Options for change proposed |
| Cost of equity indexation | Indexation | New for RIIO-ED2 |
| Real Price Effects | Indexation | Revised for RIIO-ED2 |
| Tax review | Re-opener | New for RIIO-ED2 |
| Pensions adjustment | Pass-through | Revised for RIIO-ED2 |
| Enhanced Physical Site security | Baseline allowance and/or re-opener | No change proposed |
| Cyber resilience | Baseline allowance and/or re-opener | New for RIIO-ED2 |
| Net Zero | Re-opener | New for RIIO-ED2 |

| Name | Type of mechanism | Comparison to RIIO-1 |
|---|---|---------------------------|
| Coordinated Adjustment Mechanism (CAM) | Re-opener | New for RIIO-ED2 |
| Specific to RIIO-ED2 | | |
| Strategic investment/Load related expenditure | Dependent on Model for strategic investment: could include volume drivers and/or reopener | New/reformed for RIIO-ED2 |
| Street works costs | Re-opener | No change |
| Rail Electrification | Re-opener | Reform for RIIO-ED2 |
| Black start | Re-opener | New for RIIO-ED2 |
| Miscellaneous pass-through | Pass-through | No change |
| Smart Meter interventions | Volume driver | No change |
| Environmental legislation | Re-opener | New for RIIO-ED2 |

- The RIIO-ED2 SSMC also sets out the RIIO-ED1 uncertainty mechanisms that we are proposing to remove for RIIO-ED2.

| Name | Type of mechanism at ED1 | Proposed treatment of costs for ED2 |
|------------------------------|--------------------------|---|
| Load Related Expenditure | Re-opener | Dependent on model for strategic investment |
| High Value Projects | Re-opener | Dependent on model for strategic investment |
| Link Boxes | Re-opener | NA |
| Subsea Cables | Re-opener | NA |
| Innovation Rollout Mechanism | Re-opener | NA |

- See attached pdf extract from OAWG meeting 10.

Post-SSMC and DDs discussion

- We set out the **wide spectrum of options and approaches** to econometric benchmarking that exists for RIIO-ED2: totex, hybrid (including middle) and disaggregated modelling.
- We also set out questions around the more **technical aspects of our econometric analysis** including estimation techniques and model specification.
- We included proposals for the selection of **cost drivers**, assessment of suitable **cost pools** for middle/ disaggregated modelling, as well as an assessment criteria for selecting suitable **regression models**.
- In ED2, we proposed **using the full suite of historical data** that we have available, where appropriate to do so. This suite of data includes up to 13 years of historical data from the DPCR5 and RIIO-ED1 price controls, and a minimum of 5 years of forecast data for RIIO-ED2.

Questions in SSMC:

- **COQ14:** Do you agree with the proposed criteria for assessing regional and company specific cost factors that we have outlined?
- **COQ15:** What are your views on our approaches to account for regional and company specific cost factors in our modelling?

Summary of Responses:

COQ14:

- Broadly agreed with proposed criteria set out. A couple of DNOs recommended that the materiality threshold should be relative to DNO and DNOs should judge this.
- Further detail and clarity should be set out in the Business Plan Guidance. Increased distinction between treatment between Regional and Company Specific Factors.

COQ15:

- Responses are generally supportive for pre-modelling adjustments for company specific factors. Responses were generally supportive of regional factors controlled in regressions or pre-modelling adjustments.
- Mixed responses for within-modelling adjustments. One respondent welcomes further work on urbanity and sparsity adjustments in particular density drivers.
- Mixed responses for post-modelling adjustments. One respondent suggested that it may skew modelling coefficients and another suggested it would be a suitable approach to address costs that are not within efficiency controls.

Points to consider and address for SSMD:

| Area | Tasks |
|--|--|
| <p>Criteria - Evolve current criteria outlined in SSMC</p> | <ul style="list-style-type: none"> Determine quantitative materiality threshold (e.g. is the claim material in nature?) |
| | <ul style="list-style-type: none"> If required, specify what is deemed by a unique claim |
| <p>Offsetting/Symmetry</p> | <ul style="list-style-type: none"> Views to whether adjustments should fully offset each other |
| <p>Submission form/template</p> | <ul style="list-style-type: none"> Views on what further clarity and information is required for the Business Plan Guidance |
| <p>Applicability of different metrics used for regional adjustments</p> | <ul style="list-style-type: none"> If a regional labour adjustment is required, views on calculation of labour indices (ASHE Data) Views on urbanity and sparsity: <ul style="list-style-type: none"> Within-modelling adjustment – views on use of density/alternative variables in econometric modelling |

Questions

- **COQ16:** Do you agree with our proposed approach to index RPEs, rather than setting an ex-ante allowance based on forecasts?
- **COQ17:** Do you agree with our proposal to have a high materiality threshold for RPEs? What are your views on the materiality level for RPE submissions, and the criteria we use to select input price indices? **COQ18:** Do you agree with the suggested common input and expenditure categories for structuring RPEs in ED2?
- **COQ19:** Do you agree with our proposed approach, and its scope, to set an ongoing efficiency assumption for RIIO-ED2?
- **COQ20:** Do you agree with our proposal to use a growth accounting approach as our primary source of evidence to set an ongoing efficiency assumption? What parameters would best support this approach?

Summary of responses

RPEs

- Stakeholders are split on ex-ante vs indexation for RPEs. Reoccurring challenge to indexation is that it exposes DNOs to more risk, as well as revenue fluctuations, against over-forecast risk of ex-ante allowances.
- Some DNOs advocated the removal of both RPEs and OE from ED2, arguing that they would net each other off.
- Mixed answers on having a high materiality threshold. Concern that it leads to exclusions of smaller cost categories, meaning that there was still a risk of high variations in the input prices of these categories.
- Broad agreement on using ED1 input / expenditure categories for the notional cost structure.

Ongoing efficiency

- DNOs supportive of placing more weight on forward looking productivity forecasts, taken into account Covid-19 or Brexit impacts on productivity. Supportive of using a growth accounting approach in ED2.
- Some DNOs argued that historical productivity of ED sector should not be used to inform the ED2 OE assumption.
- DNO pushback on GD/T2 OE methodology, particularly regarding the additional innovation challenge. DNOs all agreed that gross output productivity metrics should be used in setting an OE assumption.
- Other respondents were in favour of using past efficiency gains, including through past innovation, to inform ED2, as well as future opportunities for efficiencies with smart system benefits (eg. greater use of ANM)

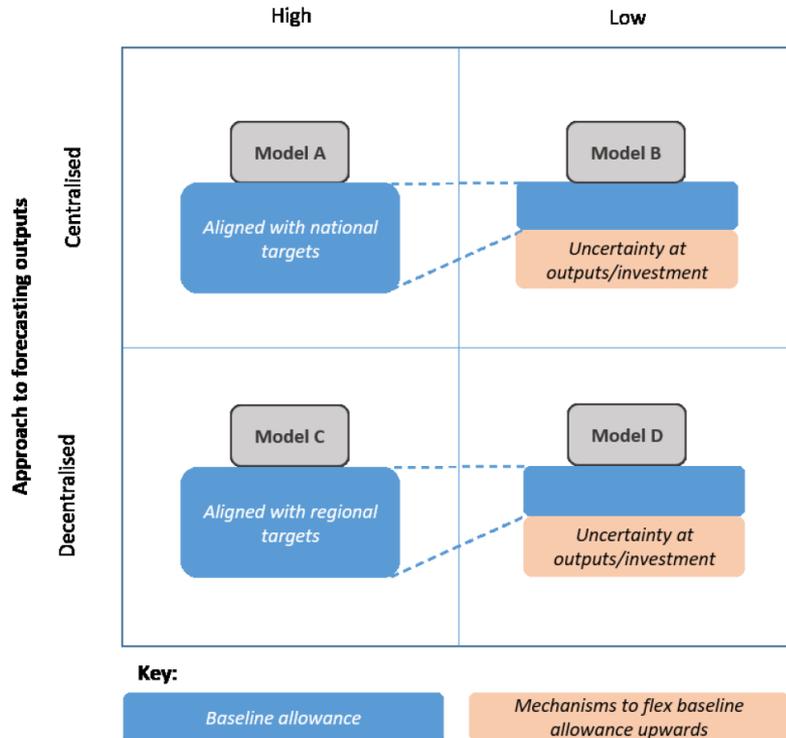
WPD presentation on Forecasting and Scenarios

Scenarios and Forecasting

Ben Godfrey

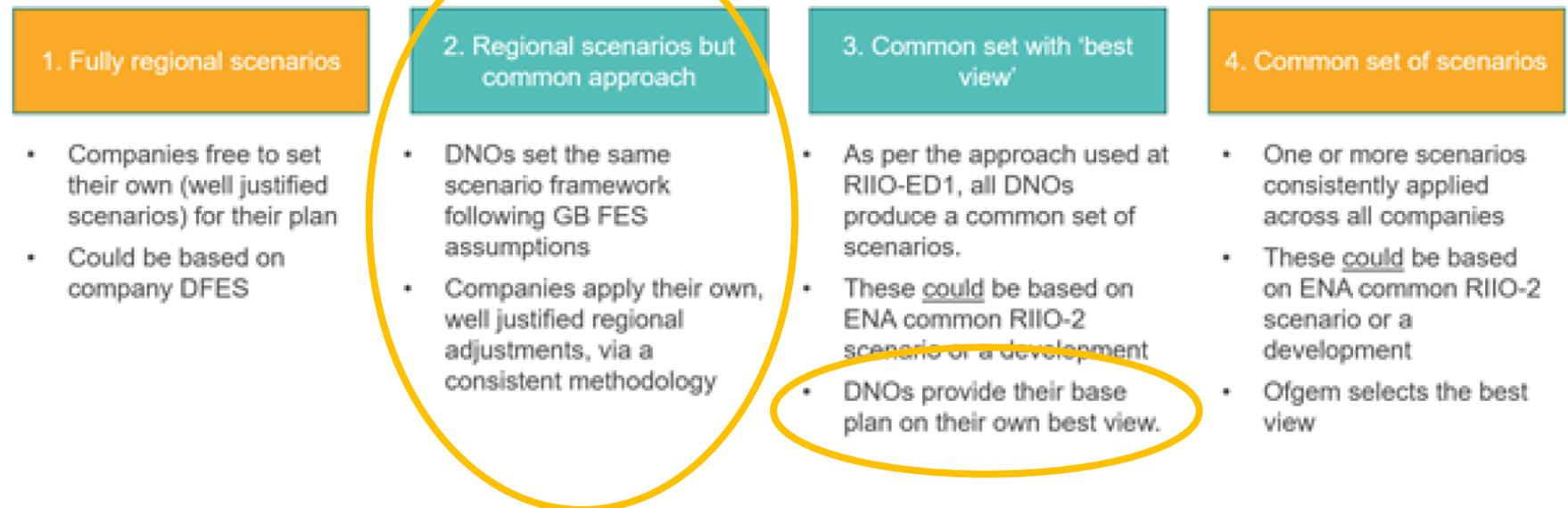


Network Strategy Manager



- Local Authority Energy Plans directly inform DFES projections
- DFES merges local connected DER and LCT volumes against longer term national targets
- DFES provides a decentralised view of high-certainty regional requirements DFES

Figure 5: Review of forecasting options



Level of Standardisation

DNOs Flexibility

| Common Scenario Framework Model | Initial Alignment & Feedback Model | Fully Integrated FES/DFES Process |
|---|---|---|
| <ul style="list-style-type: none"> The same scenario framework as the GBFES Greater flexibility for DNOs to adjust their own levers and assumptions Could lead to greater differences between national and license area trends Does not require additional resource | <ul style="list-style-type: none"> The same scenario frameworks as the GBFES The same high-level assumptions as the GBFES A process to review and address differences and take appropriate actions to update models, assumptions and data. Resource intensive process | <ul style="list-style-type: none"> All processes/models are the same High degree of interaction between the ESO and DNOs Much greater alignment and consistency May prevent each DNO from capturing and reflecting local targets and trends Much more resource intensive process |





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graph LR; A[DFES Process] --> B[Creating a company Best View]; B --> C[Informing ED2 Volumes]; C --> D[Consistency with NDP]
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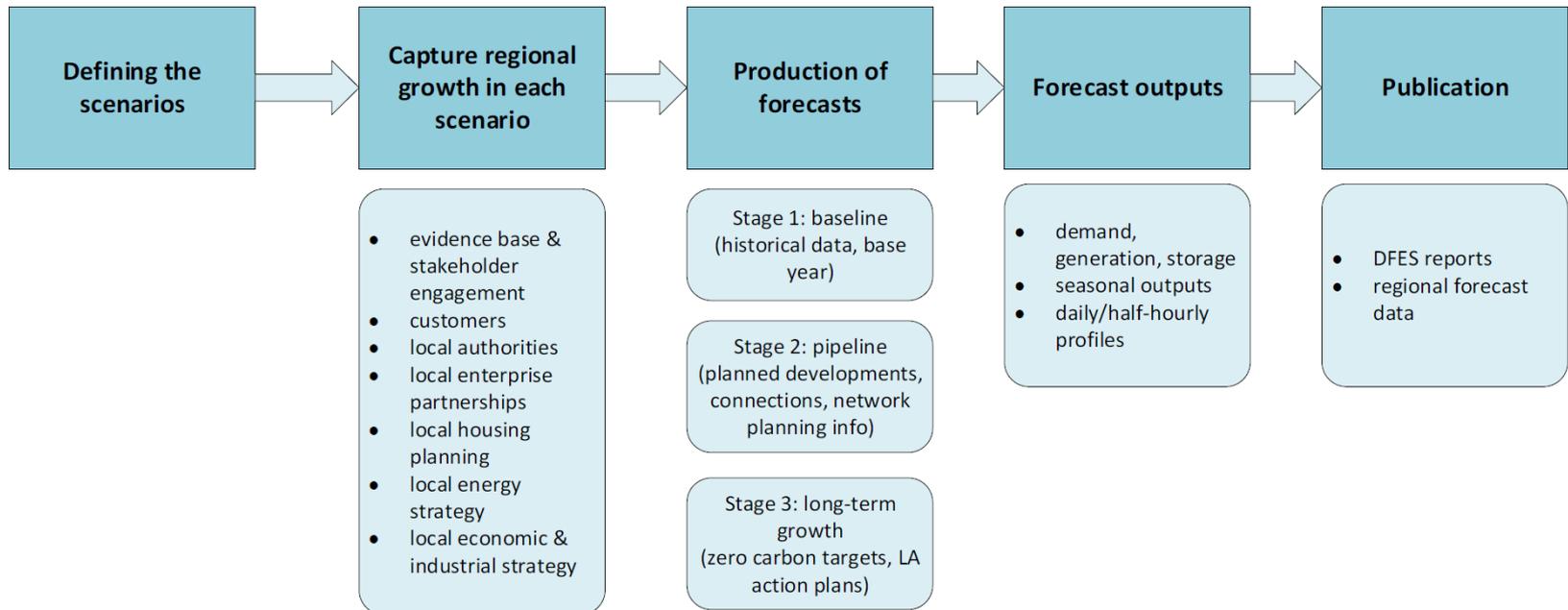
DFES Process

Creating a
company Best
View

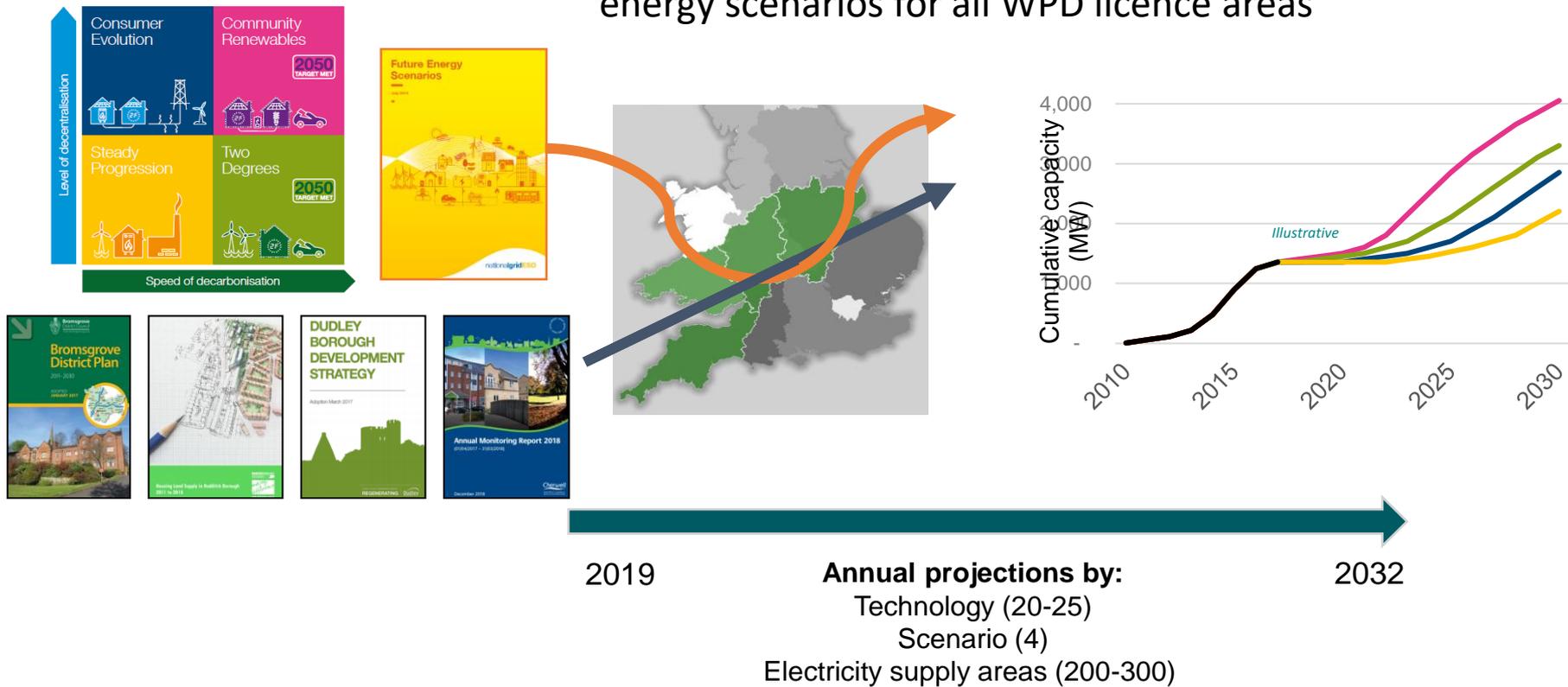
Informing ED2
Volumes

Consistency
with NDP

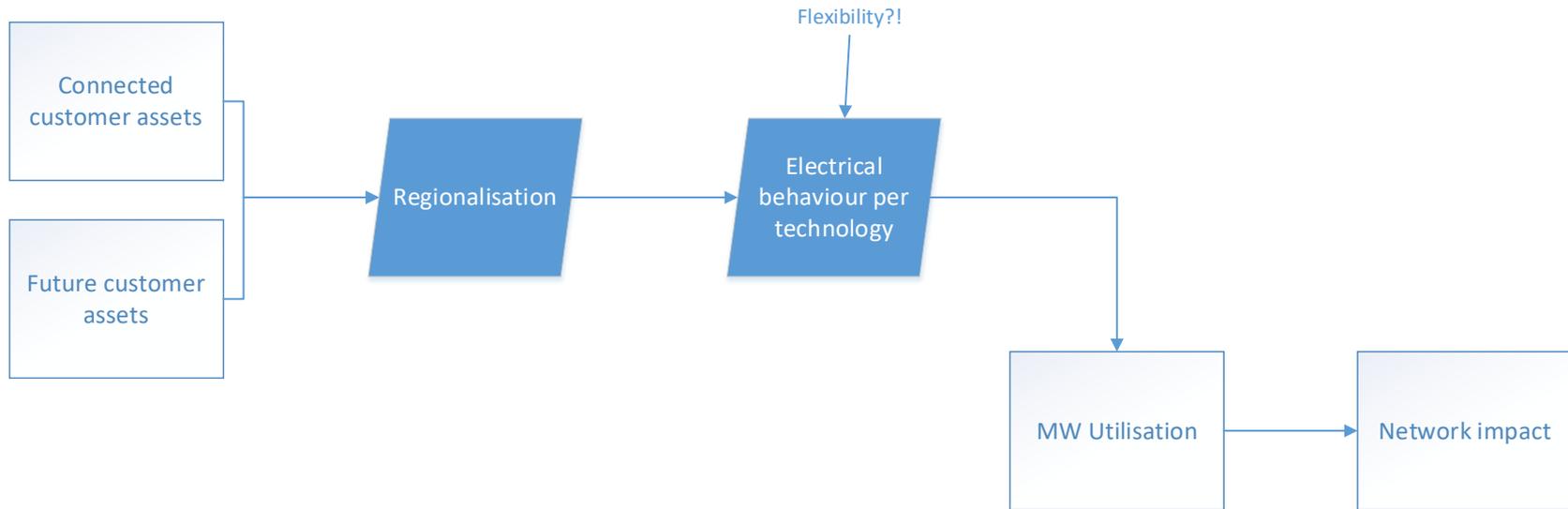
➤ Convergence of DFES production and standardisation of the format is well underway

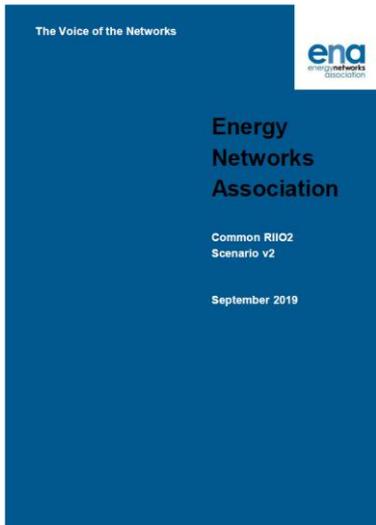


A 'bottom-up', stakeholder-informed, set of future energy scenarios for all WPD licence areas

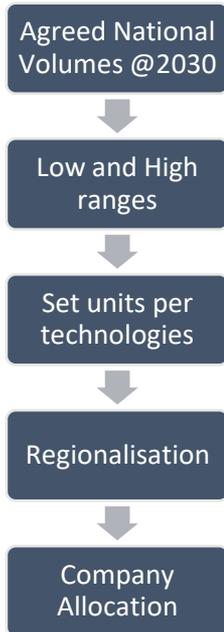


- There will be regional differences in customer behaviour – the electrical MW assumptions behind the different technologies will need to be proposed in order to understand MW capacity/utilisation.





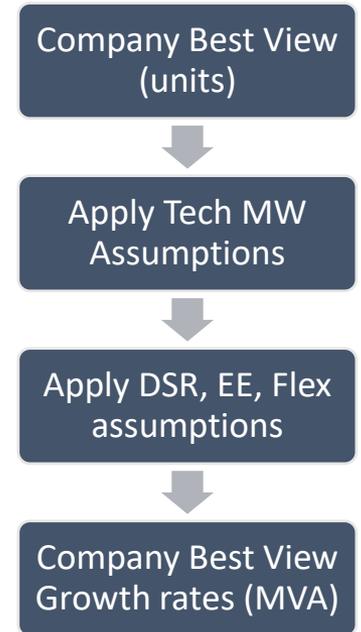
Industry Uptake

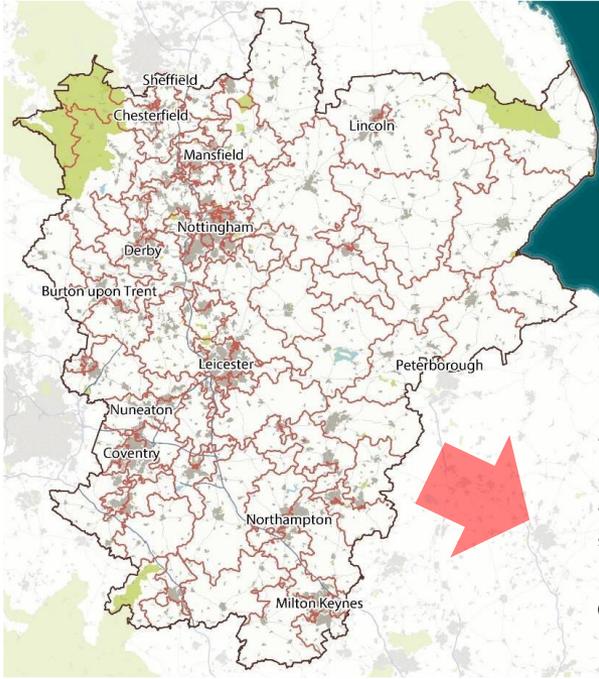


Company Uptake

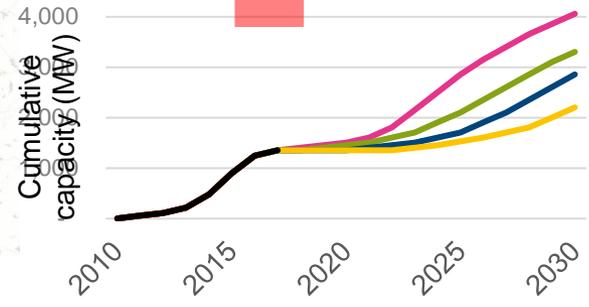
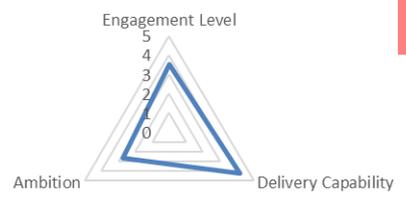


Company Network Impact





Local Authority Feedback Scoring

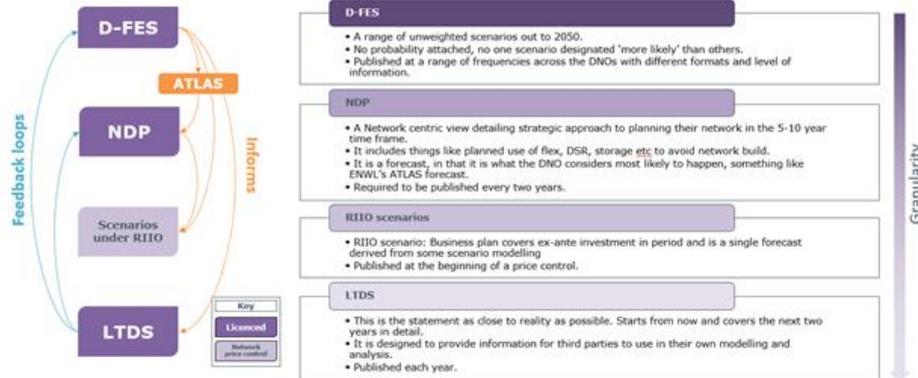


- Licence area impact:
- volumes
 - MVA
 - Capacity released

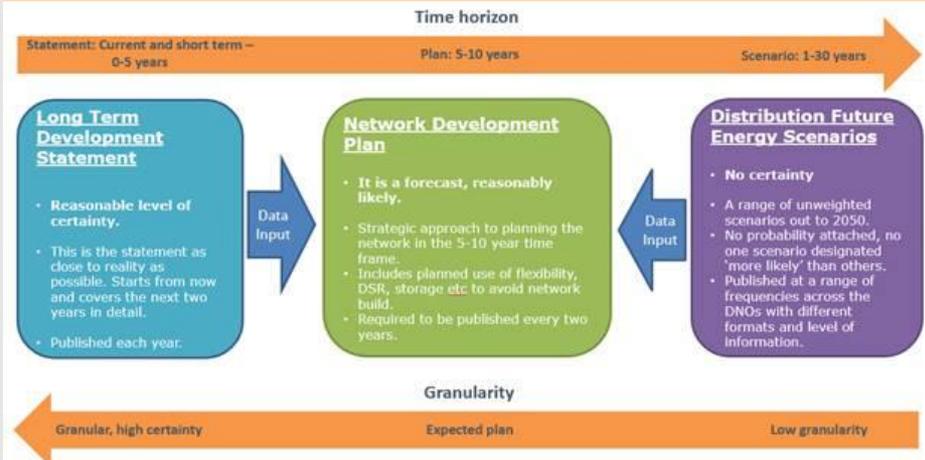
Different documents for different purposes

Distinct purposes that should coordinate

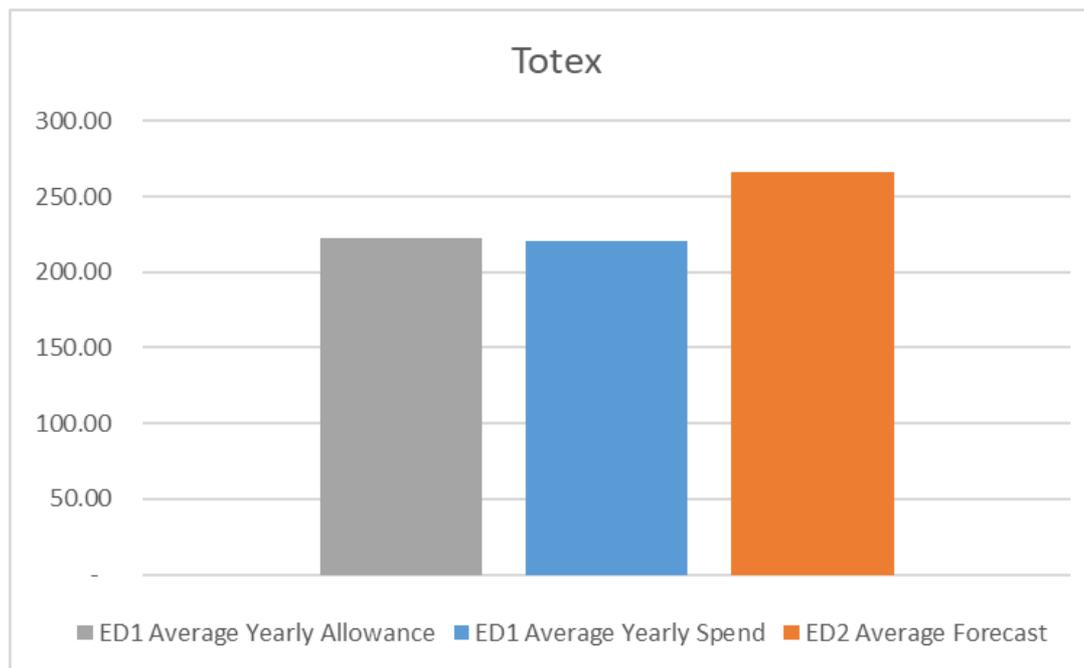
There are several documents in the space. However, they all serve distinct purposes.



Time horizons for network planning

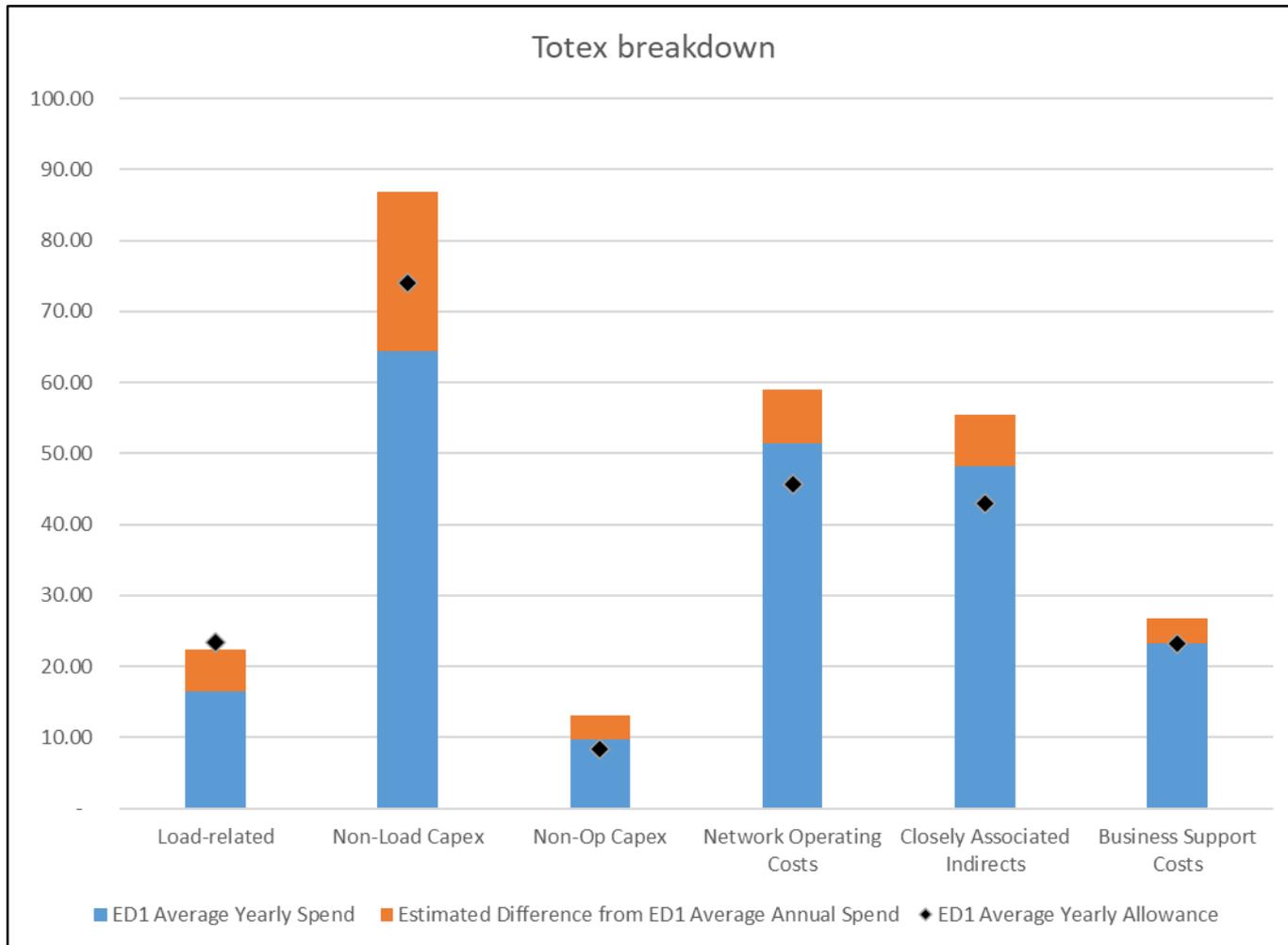


Ofgem review of ED2 early forecasts



Assumptions used to generate illustrative graph above:

- >30% = 35% increase on ED1
- >20-30% = 25% increase on ED1
- >10-20% = 15% increase on ED1
- Within +/- 10% = ED1
- <-10-20% = 15% decrease on ED1
- <-20-30% = 25% decrease on ED1
- <-30% = 35% decrease on ED1
- No further expenditure



Estimated difference from ED1 average spend is the highest DNO forecast using the assumptions on the previous slide minus the ED1 average yearly spend

- **Connections – >30%**
 - SCR not factored in to forecasts
 - Impact of SCR significantly impact Connection volumes (BPDT impact)
 - Disruption of Covid factored in which will impact connections volumes into ED2
- **Primary Reinforcement**
 - Bottom up use of DFES in production of forecast
 - all scenarios conclude a significant increase in overall reinforcement requirements is required in RIIO-ED2 as part of the Net Zero transition
 - Use of flexibility will increase through RIIO-ED1 and into RIIO-ED2; however it is not expected that the market will be able to provide services to match all demand exceedances and therefore due to these concerns regarding the availability of flexibility in required locations at required times, it has been assumed that flexibility will only be utilised on half of appropriate situations.
 - Forecasts currently focussing on constraint areas and currently targeting resolution of constraint by application of DSO contracted Flex solutions/Smart solutions/traditional solutions
- **Secondary Reinforcement**
 - Bottom up use of DFES in production of forecast
 - Forecasts likely to include significant proactive programmes of constraint removal
 - Widespread use of network modelling using asset and geographic data
 - modelling output gives a siloed output that does not consider the full view of investment cost associated with our HV and LV networks - assumptions
 - A programme of unlooping of services will allow for the uptake of LCTs and is likely to be the area of greatest increase compared with RIIO-ED1 alongside roll out of monitoring

- **Fault Level Reinforcement**
 - Trends of increasing expenditure in ED1 and expect to continue
 - This is in part due to the unprecedented increase in embedded generators, increase in rotating plant (within customer premises) and a move towards a lower loss / more efficient network
- **NTCC**
 - One proposal that these charges are scrapped in RIIO-ED2 and all Transmission Connection Point (TCP) charges are treated as pass-through.

- **Asset Replacement**
 - Generally assets will be replaced on a like-for-like basis using modern equivalents, but larger capacity assets may be used either to reduce network losses or to take account of anticipated load growth.
 - Making use of a range of different modelling techniques to determine the volumes of activity, including:
 - Network Asset Risk Measures (NARM) - re-evaluated against the RIIO-ED2 NARMs methodology once it is finalised
 - Statistical age-based modelling
 - Run-rate analysis
 - Population impacted analysis
 - Bespoke programmes
- **Refurbishment – Mix of responses but largely and increase of over 10-20%**
 - Reduction of expenditure in some DNOs due to limited scope for further refurbishment opportunities given the work done on the asset base to date
- **Operational IT & Telecoms - >30%**
 - DNOs propose that there will be significant increase in costs across 3 area:
 - People – Operation of monitoring and dispatch of flex, new local operator services for trading
 - Data – Data storage, data governance, network charges
 - Systems – ANM, Flex system management, protection systems, access rights

- **Civil Works**
 - Largely inline with ED1 proposals
 - Some DNOs note significant increases in expenditure conjunction with the increase in overall Asset Replacement activity
- **Diversions**
 - Significant increases in expenditure reported in many DNOs
 - includes current expectations based on the evolving nature of land agent activities and increases in wayleave payments as well as diversionary works.
- **Diversions (Rail Elec)**
 - New spend in some networks. Identified that only modest electrification of rail networks was undertaken in some areas
- **Legal and Safety**
 - Mixed picture across all DNOs
 - Some reporting increased expenditure due to PME earthing and also additional cut-out remedial work resulting from a new post Smart Metering rollout inspection regime
- **Losses**
 - Mixed picture across all DNOs and the majority forecasting no spend Some DNOs targeting significant reductions in losses
- **Environmental**
 - Main increases in costs are anticipated to be associated with the removal of assets with persistent organic pollutants

- **Faults, SW1in20, ONIs, Dismantlement, Substation Electricity -**
 - Nearly all within +/- 10%; assumptions made that expenditure will remain broadly inline with RIIO-ED1
- **Tree Cutting**
 - Majority forecast within +/- 10% and assumptions made that expenditure will remain broadly inline with RIIO-ED1.
 - DNOs noted that Climate Change is resulting in increased growth rates. DNOs do note that the utilisation of technology should manage costs
- **Inspections**
 - Majority inline with ED1. Increase in some network areas due to need to introduce more proactive inspections of cut outs following smart meter upgrade programme.
 - Addition of new telemetry and monitoring equipment at substations the need to visit substations is likely to increase in the future
 - Interaction with NARM noted
- **Repair and Maintenance**
 - Majority inline with ED1. Increase in some networks noted due to maintaining a growing smart device inventory as we move forward using more smart technology.

- CAI
 - Nearly all within +/- 10%; assumptions made that expenditure will remain broadly inline with RIIO-ED1
 - Growth in some DNOs as these functions due to the increases in the direct cost activities that they support (eg project management).
 - Assumptions put forward due to additional services to vulnerable/PSR customers that will increase costs in areas such as the Call Centre. Based on early views of customer priorities.
 - Wayleaves potential for growth of expenditure due to open data requirements and increase in agents continuing to drive up volumes
 - DNOs note that many DSO functions will be resourced by teams and processes that form part of Core CAI. The move towards digitalisation and increasing data policy and management could require additional headcount and resource.
- Business Support
 - Majority inline with ED1 and DNOs plan to build on efficiencies realised through ED1
 - Some DNOs expecting increased forecast expenditure in IT infrastructure to support DSO capabilities and due to increased cyber resilience costs (staff, software and hardware and increased maintenance costs)

Placeholder for discussion on DSO Cost Assessment

Actions, next steps, AOB

- The next meeting date for the CAWG is Thursday 22nd October.
- The focus of that session will be:
 - Totex models
 - Data (RIGs returns and findings)
 - Interaction with BPDT
- We will circulate notes and an actions log from this meeting.