

RIIO-ED2 Overarching Working Group Meeting 2



17 January 2020

Item	Timing
1. Welcome and introductions	10:00 – 10:10
2. Minutes of previous meeting and updated terms of reference	10:10 -10:20
3. Update on activity since previous meeting and recap of group function	10:20 - 10:30
4. Presentation: SP and SSE on OAWG priorities/subgroups proposal	10:30 -11:30
5. Presentation: Northern Powergrid on Overarching framework and asset lives	11:30-12:30
Lunch	12:30-13:00
6. Presentation: SP on Strategic Investment	13:00- 13:45
7. Presentation: E.ON Provision of EV connections to vulnerable customers	13:45-14:15
8. Presentation: ENWL on Smart Street – Overview and RIIO-ED2 framework considerations	14:15 – 15:00
9. AOB	15:00 – 15:15

- December minutes
- Terms of Reference
- Activity since previous meeting

Topics for discussion	Areas where we would be particularly interested in hearing proposals
February (17 February - tbc)	
Reflecting regional priorities within the price control	Approach to reflecting ambitions of Local Authorities and devolved administrations within the price control
Forecasting and scenarios	An appropriate approach to developing a common view of the future in RIIO-ED2
March (date tbc)	
How to set price controls for DSO functions	Treatment of DSO functions undertaken by DNOs
How to set price controls in a big data environment	

Focus areas:

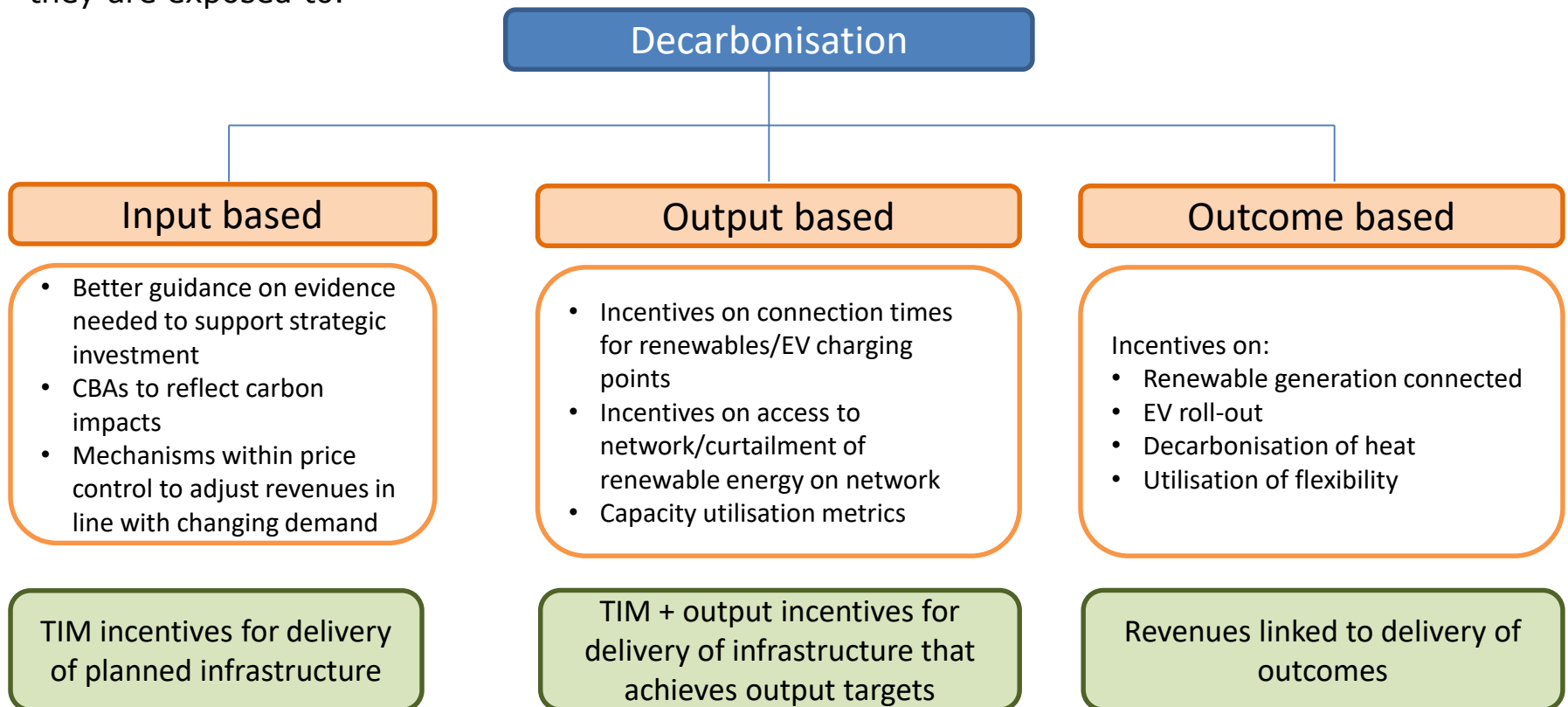
How to set price controls that support decarbonisation goals	How to set price controls for a smart, flexible energy system
How to set price controls that support strategic investment	How to set price controls in a big data environment
How to set price controls for DSO functions	Approaches to forecasting and scenario planning

We want to hear and understand your suggestions for, and assessment of proposals for methodological changes that could better achieve these goals, for instance:

- Do we need to change how we evaluate costs and benefits?
- Do we need new uncertainty mechanisms?
- Do we need to remove outputs and incentives or introduce new outputs?
- Do existing incentives (such as on totex) drive the appropriate behaviour? If not, what would need to change?

- Separately, other workstreams are looking key related issues – access reform, DSO functions, flexibility markets. And some of our decision making – for instance in relation to competition – will largely be determined once we have sight of business plans.
- This group should consider these issues in so far as they may impact upon the type of price control we set & how this may change depending on the decision we make, for instance in relation to the range of DSO functions undertaken by DNOs. But this group will not be considering which DSO functions DNOs should undertake or whether in principle we should introduce competition, for example.

- In considering changes to the methodology, at a high-level we may in due course have to choose between different options for the type of price control that we set.
- This is particularly relevant for issues relating to decarbonisation where the actions of the DNO in RIIO-ED2 are intended to contribute toward the achievement of net zero carbon emissions in 2050.
- The approach we take may have different implications for the role of the DNOs and the risks they are exposed to.



17th January 2020

OAWG priorities/subgroups proposal

OAWG draft ToR and previous suggestions for OAWG scope

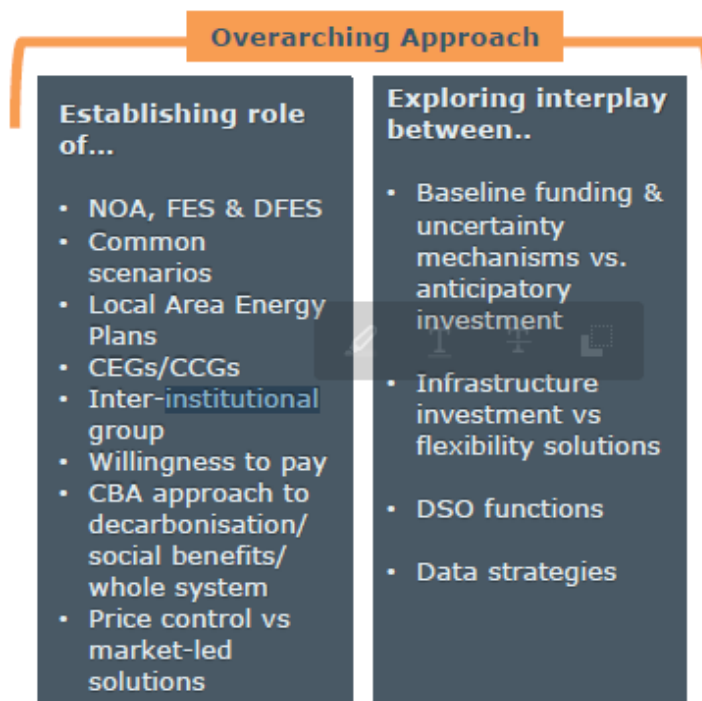
1.10 In doing so, it is expected that the Group will consider primarily these topics:

- i) How best to set a price controls consistent with the achievement of the Net Zero target (including the approach to strategic or highly-anticipatory investment)
- ii) The treatment of Distribution System Operator activities within the price control framework
- iii) The valuation of network flexibility
- iv) The approach to forecasting and scenario planning to be adopted by DNOs in preparing their RII0-2 business plans, including how to take into account regional priorities
- v) The effective use of DNO data and development of data strategies

1.11 The Group may also consider the below cross-sector issues with regard to ED-2:

- i) The approach to innovation and innovation stimulus
- ii) Competition models
- iii) The approach to whole system.

1.12 However, the cross-sector issues in the paragraph above may also be discussed in other workshops or working groups, including alongside other gas and electricity network licensees and the electricity system operator.



Limited time (April?) and many topics – prioritisation and use of focussed Work Packages is key

Sources:

(i) OAWG draft ToR;

(ii) Ofgem slides from 29th Oct WG workshop

SPEN/SSEN Initial suggestions of proposed priorities – each with a subgroup where necessary (work packages to be expanded)

Achieving Net Zero including Strategic Investment	National/Regional Planning and scenarios	DSO considerations	Role of Competition
<ul style="list-style-type: none"> • Definition of strategic investment – creation of common principles and differentiation of different categories e.g. value and risk • Examples of a range of investment projects across DNOs • Matrix of scale/value/certainty/risk and possible mechanisms for funding • Options around outputs and incentive • Low carbon drivers • How to measure outputs associated with low-carbon transition. 	<ul style="list-style-type: none"> • Role of national plan and common scenario • Role of local plans and regional scenarios • Interaction between national/common approach and local/regional planning. • How should regional / local plans be updated and validated • What level of granularity of local plan is expected • What happens when reality differs from the scenario 	<ul style="list-style-type: none"> • Definition of DSO functions within ED2 – separate outputs or within DNO • Rational for them sitting with DNO (risks and benefits) – separate outputs or within DNO • Appropriate outputs, funding arrangements and incentives for DSO 	<ul style="list-style-type: none"> • Clarify objectives (risk and benefits) of early and late competition. • If appropriate propose competition models considering differences between T and D, including in thresholds. • Consider whether DSO model is one model of early competition • Clarify expectations, opportunities and risk for native competition • Ensure models provide appropriate protection and risk mitigation measures for customers

Each group should also consider:

- Lessons from Transmission and Gas Distribution under RIIO-2
- Consequential licence/code changes and impact and interaction thereof

Some suggestions from others on additional topics to be prioritised (1 of 2)...

Topic	Description	Suggested way forward
Making the case for the regulatory model and Asset Lives	How long should asset lives be?	Cost Assessment WG with update to OAWG
Incentivisation to drive consumer benefit	Review the overall balance of the incentive framework and how incentive based regulation should continue into RIIO-ED2 to deliver optimal outcomes for consumers	
Making the best decisions for customers each time	How ensure the best decisions for consumers over the right time horizon for example CBAs. Is key to choosing between flex, EE and traditional network solutions.	What would the outputs be in this area? If the expectation is that this sub-group will set out the length of CBAs, the value of incentive rates, the key things to incentivise then this may be a group for later?
Data accessibility	Building on the work already happening in the T2/GD2 timescales,	OAWG to consider ENA Data group output
Principles for dealing with uncertainty (e.g capacity)	Explore where items might be reopeners, baselines or volume drivers. For example providing capacity to meet customers' needs as these may rapidly evolve need to address how the uncertainty is managed (e.g capacity mechanism)	Proposed Strategic investment subgroup
Willingness to pay and stakeholder engagement	Role of centralised WTP and consumer/stakeholder engagement, and if this is different to GD2/T2. Clarification require	Customer Service, Vulnerability & connections WG
Financeability	Ensure financial foundations are sound, delivering at an efficient cost to customers and maintaining attractiveness to investors and lenders so consumer needs can be met.	Finance WG

Some suggestions of other topics to be prioritised (2 of 2)...

Topic	Suggested way forward
Whole Systems	Cross Sector Ofgem Group and CAM in Ofgem CAM WG
Innovation	Cross Sector Ofgem Group
CEG/CCG interactions	
Valuation of Flexibility	Load subgroup of SRR WG
Cost Benefit Analysis	Cost Assessment WG

Timeline and suggested approach

Aim is for **this meeting** to :

- (i) Agree which topic areas in slides 3-5 need to be discussed with a view to producing proposals/analysis to inform summer consultation.
- (ii) Agree which topic areas fall within OAWG or other WGs.
- (iii) Prioritise OAWG topic areas (at least the top 3)
- (iv) Identify which of those within OAWG would benefit from a subgroup. If no subgroup, identify an alternative way of progressing.

Next steps...

Governance of subgroup structure. Potential ENA role to support?

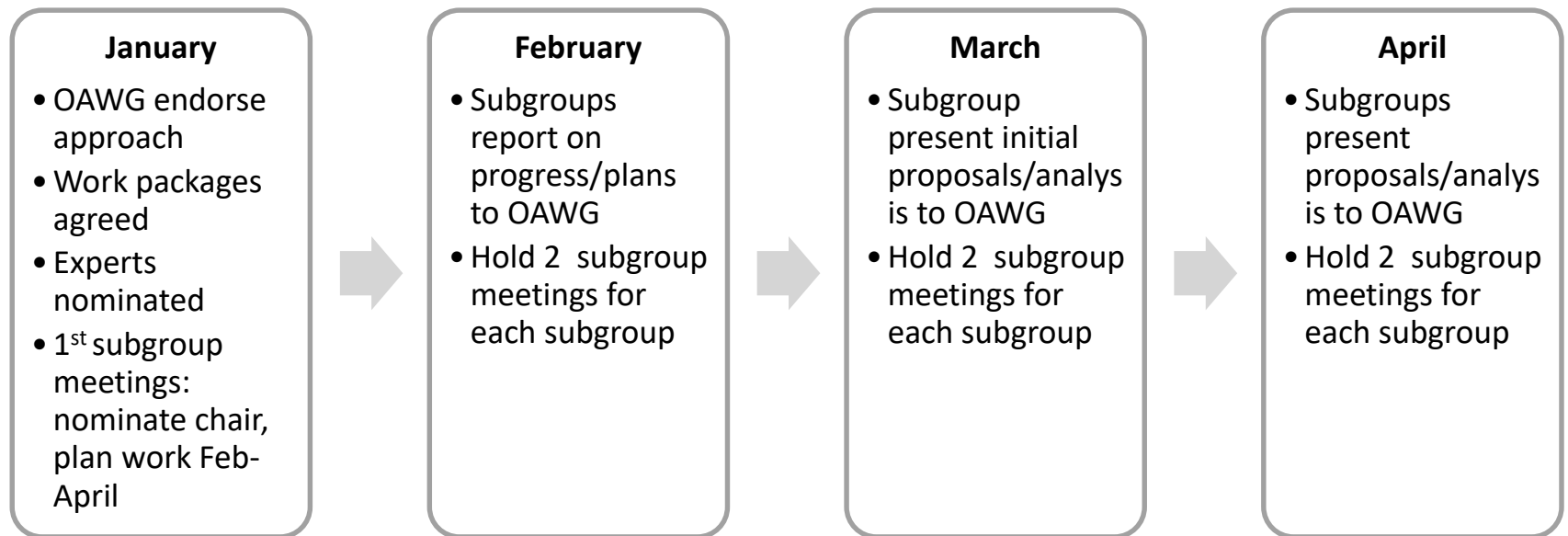
- Attendees ideally experts in topic areas. Open to all, but limited to 10(?) to promote collaboration in limited timeline? Fortnightly meetings? Volunteer chair? Ofgem attendance non-compulsory? Minimise resource burden – meetings via phone?
- Quick turnaround of proposals; reporting progress and proposals to OAWG monthly

Work Packages

- (i) All to propose potential Work Packages for each topic area by 23rd Jan? Volunteer to consolidate. How to prioritise and start work?

In order to meet the challenging timeline ...

Aim: to start 2-3 subgroups in January ... others in February ...





Overarching Framework and Asset lives

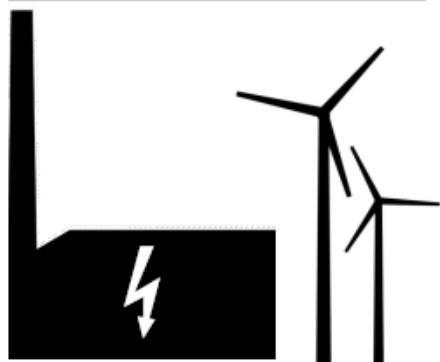
Patrick Erwin
Policy and Markets Director
January 2020

Natural Monopolies: a recap

Simple description of a natural monopoly

- Up-front fixed costs are high.
- The average cost declines over relevant output range – one firm is cheaper than two (AKA “subadditivity” – which implies increasing returns to scale).
- The marginal cost is below average cost (over relevant output range)
 - so entry pricing at marginal cost is loss-making.

Generation (Market)



Potentially competitive

Generators can compete to sell electricity on wholesale market

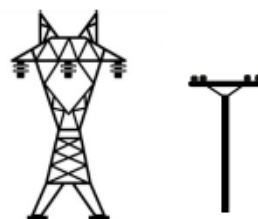
Transmission (Regulated)



Natural monopoly

Inefficient to construct multiple competing transmission networks

Distribution (Regulated)



Natural monopoly

Inefficient to construct multiple competing distribution networks

Electricity supply (Market)

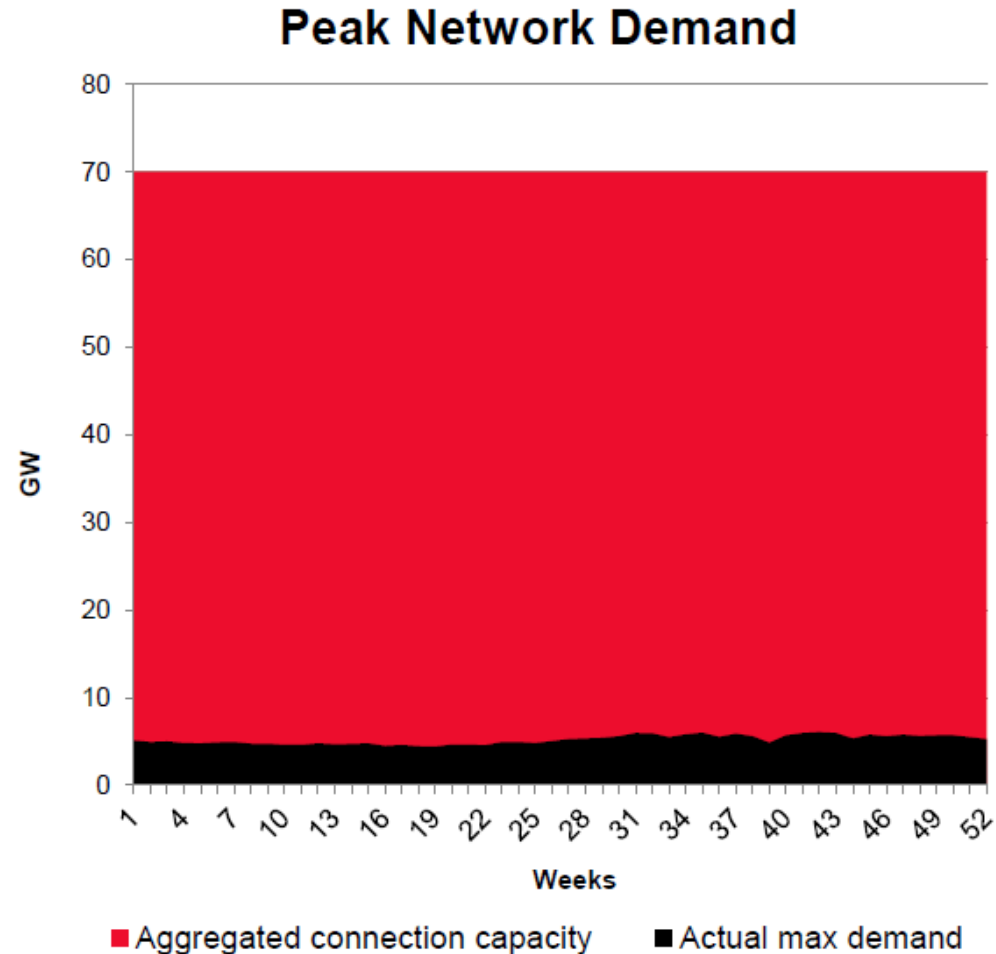


Potentially competitive

Retailers could compete e.g. by offering innovative tariffs; varying wholesale market strategies etc. Dominant incumbents or market dynamics might mean regulation is needed (e.g. GB price cap).

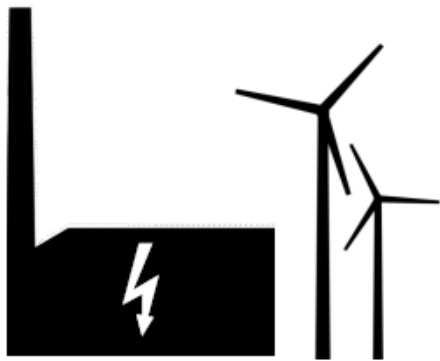
Distribution Networks – the power of diversity

- The power of diversity is another way of understanding why distribution networks are natural monopolies.
- A typical home might have a single phase 80A connection, that's roughly 18kW.
- However while very occasionally an average home's peak demand might get close to 18kW *on average* a home uses only around 1kW.
- It turns out that, even allowing for World Cups and Royal Weddings, these peaks don't fully line up.
- Similar effects are also true other classes of customers
- This means that the distribution network is something like 10 times smaller than it would be if everybody had their own "personal" connection via a shared asset.
- The use of large shared assets, rather than duplicated small assets, generates massive savings on top of this.
- Overall this represents a large collective benefit; having a public network is much cheaper than everyone having their own system.



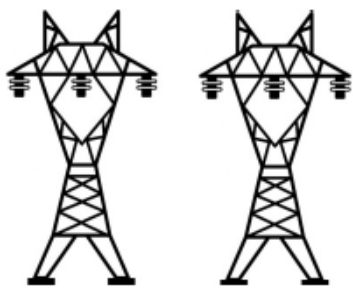
GB Electricity Industry: Today's Structure

Generation (Market)



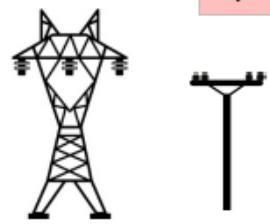
- All six major suppliers own generation
- *ca.* 150 smaller generators
- 'Dash for gas' in 1990s
- Renewables growing fast

Transmission (Regulated)



- Three incumbents
- Six new entrants competed to own new offshore links
- Likely to be extended to onshore links

Distribution (Regulated)



- Six incumbents
- New entrants (approx. nine) also compete to serve new developments
- 'Private wires' another option

Metering (Legacy vs smart)



- Six incumbents
- British Gas is the largest
- *ca.* 75 smaller entrants
- Political commitment to re-regulate and re-set

But lets not take that for granted...

...lets imagine the system was still nationalised...

...why would we privatise?

Benefits	Costs
Sale price into exchequer	Higher financing costs (borrowing money at a premium over public sector equivalent).
More efficient capital allocation (10-30%)	
More efficient operations (10-30%)	
De-politicised decision making (c.f. MPC / OBR)	
Risks taken off Government's balance sheet	

Beyond delivering monetary benefits, having a regulated “layer” in the system gives policy makers key policy tools.

Benefits
Ability to socialise certain costs
Ability to set universal service obligations
Boundary at which taxes can be raised
Ability to benchmark costs
Platform to leverage the delivery of new policy objectives

How long should we set asset lives in our newly privatised model?

Considerations

Long enough so that regulated companies have an enduring significant asset – which they don't want to lose

Long enough to smooth potentially lumpy capex requirements

Short enough to limit bill payers' exposure to higher cost borrowing costs

Ofgem has considered asset lives at every price review since privatisation

1995-2005

Regulatory asset values (RAV) were first established in the mid 1990s

The opening value was returned to companies faster than accounting depreciation would imply, in equal annual amounts

When the opening asset value was fully depreciated this caused a sudden drop in cashflows, known as the “cliff edge”

2005-2015

Ofgem smoothed over the cliff edge in 2005 at the fourth price review (DPCR4) and perpetuated the policy that had initially been applied to the opening 1990 RAV value

It achieved this by:
accelerating depreciation on assets built since privatisation; and
setting depreciation on all new RAV additions to 20 years

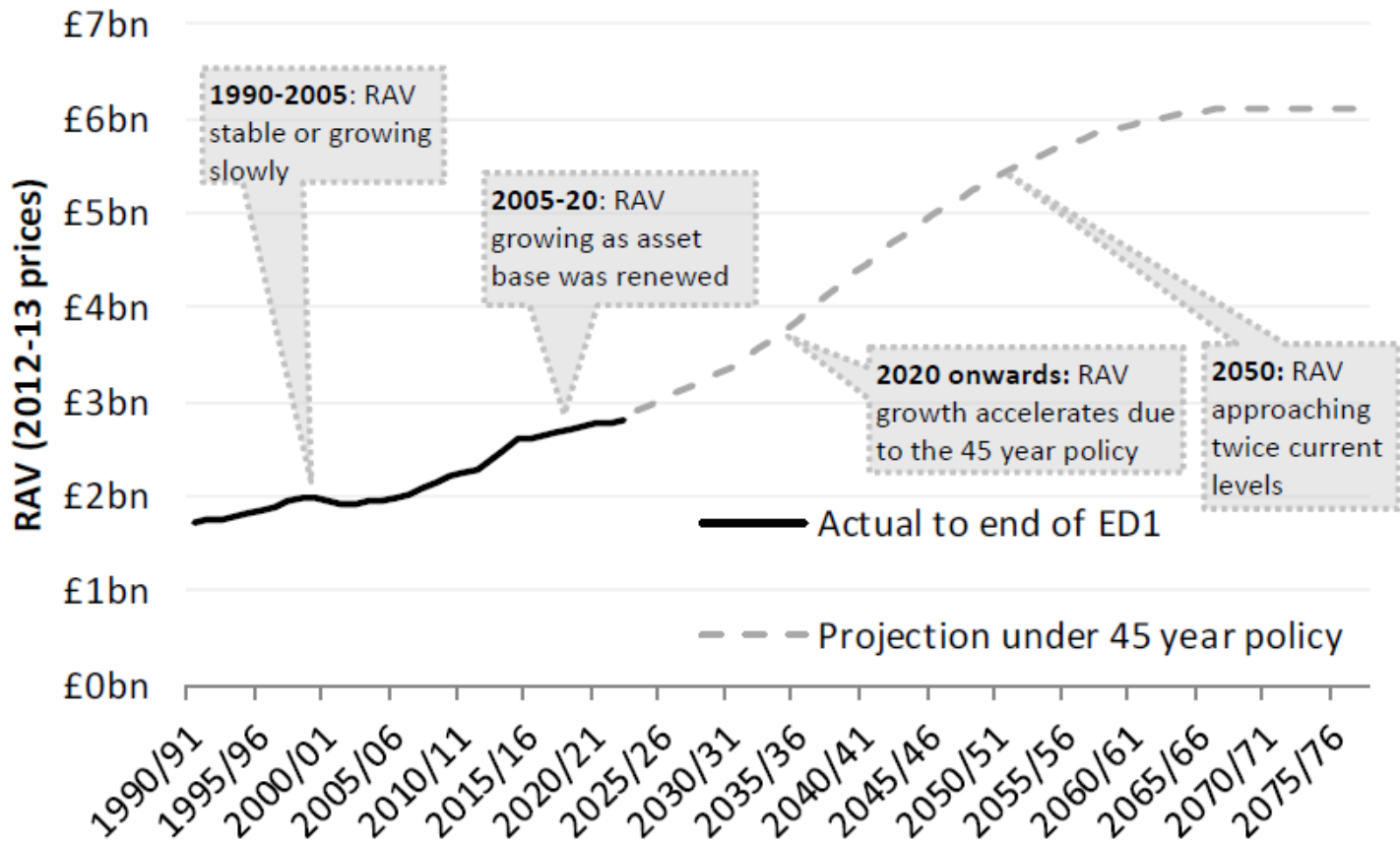
2015-23

In 2011, Ofgem decided to move to a 45 year asset life for new RAV additions by electricity networks

It allowed companies to request transitional arrangements so this change would take place gradually

All companies asked for and received this transition, which slowed RAV growth during RIIO-1

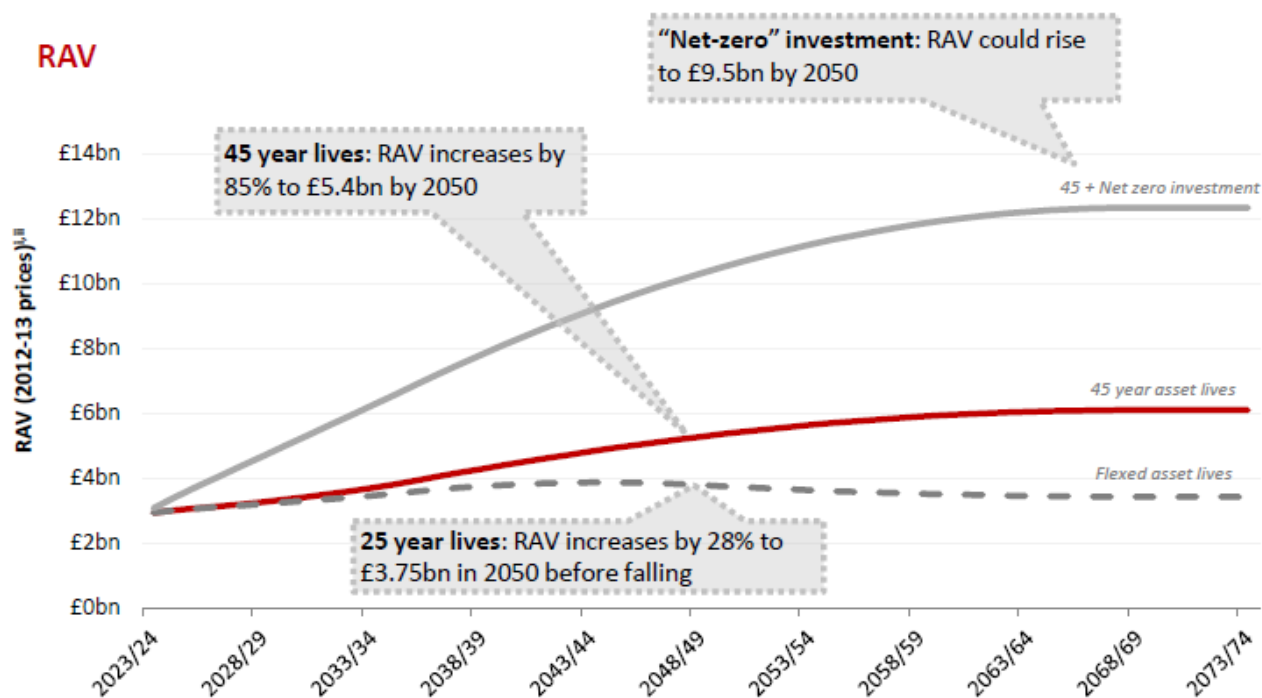
Under the 45 year policy DNO RAV would more than double, even with no rise in expenditure; straining company finances and raising customer bills



Notes:

- i. Results scaled to a Northern Powergrid sized business.
- ii. Expenditure remains at ED1 average levels.

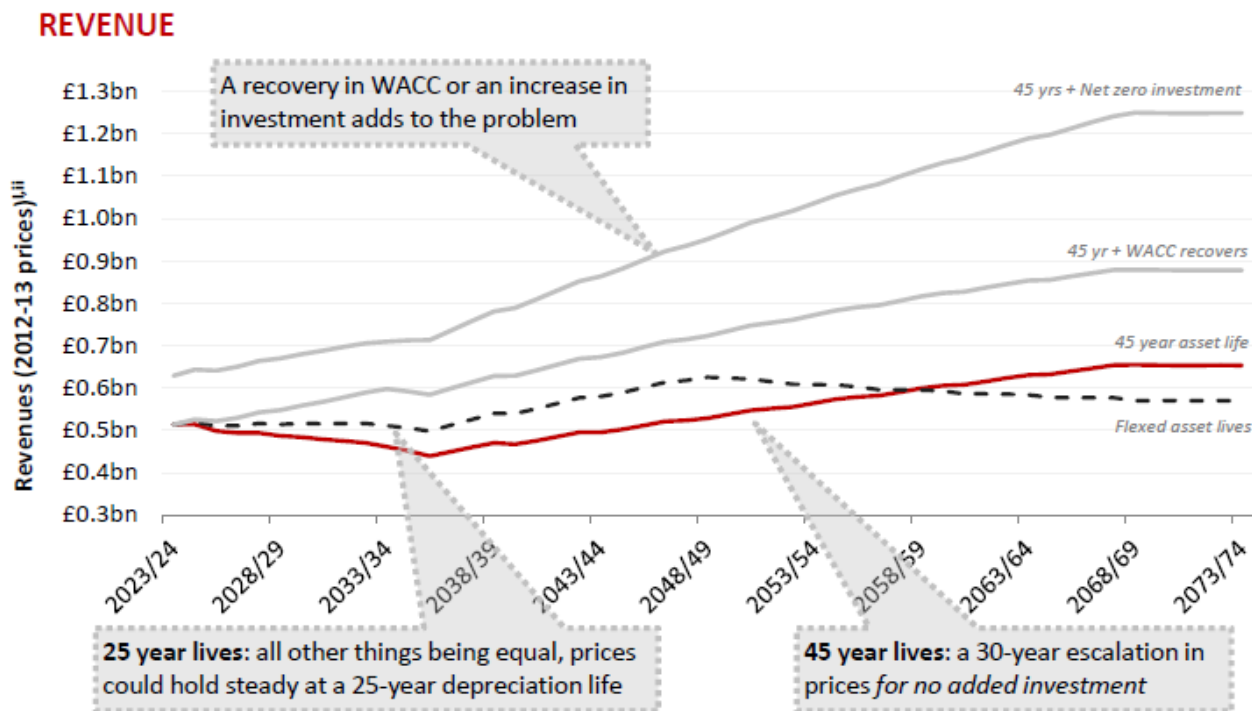
The 45 year asset lives policy is an accident waiting to happen (1 of 2)



Notes

- Results scaled to a Northern Powergrid sized business.
- Expenditure remains at ED1 average levels except in "net zero investment" where it steps up to, and stays at, the levels underlying the CCC's May 2014 report "net zero", coupled with a constant capitalisation rate.

The 45 year asset lives policy is an accident waiting to happen (2 of 2)

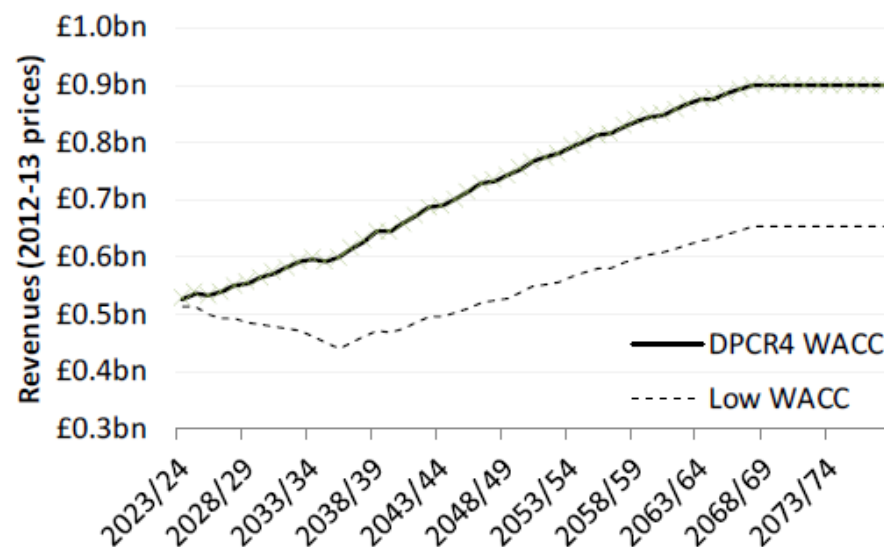
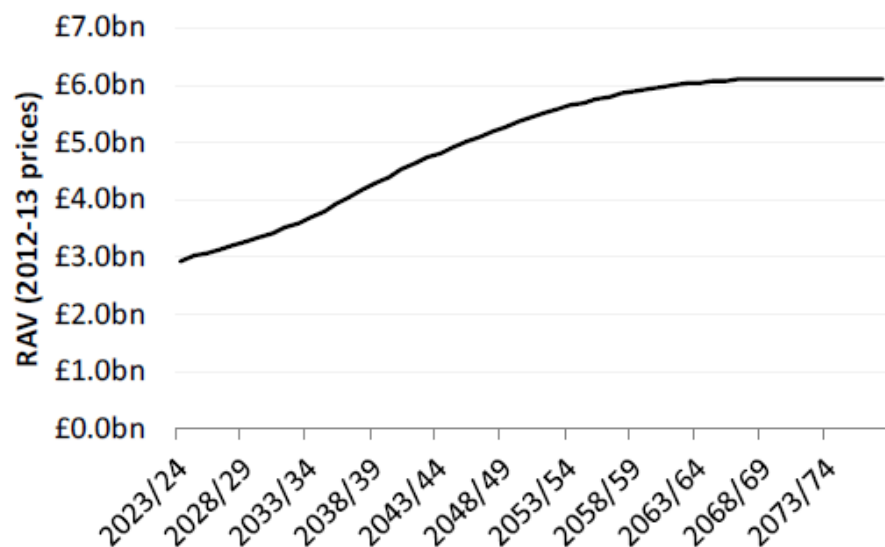


Notes:

- Results scaled to a Northern Powergrid sized business.
- The cost of capital remains at forecast RIIO-2 levels except in "WACC recovers" where it steadily increases to DPCR4 levels over two price control periods. Expenditure corresponds to the RAV chart.

Ofgem's 45 year asset life policy could see DNO charges rise by over 70% even with no change in expenditure

- Under 45 year asset lives, the size of the RAV and customer charges would have risen materially:
 - The RAV would have risen by 85%
 - Revenues could have risen by 45% if the WACC returns to DPCR4 levels, or as little as 5% if it stays at ED2 levels¹
- By 2070, these figures would have increased even further



Notes: Indicative RAV and revenues for a Northern Powergrid scale DNO

Low WACC scenario uses Ofgem's GD2 and T2 credit metric modelling parameters (4.8% cost of equity and 1.8% cost of debt, both plus CPIH)

DPCR4 WACC scenario assumes a gradual rise in WACC to DPCR4 levels, over the course of the ED2 and ED3 period

Ofgem deliberately delayed the 45-year policy to buy itself more time

*"In response, GEMA provided a new argument which it had not included in the RIIO-ED1 process or its Response. **GEMA confirmed that it did have some concerns about the end point, ie the medium-term use of 45-year indexation.** Therefore, in addition to the evidence provided in the Notice of Appeal, it confirmed that it was likely to review the end point. This reflected the pictures presented above from GEMA's analysis, which demonstrated that there would be a sharp decline in revenues over ED2 and ED3. GEMA stated that it had concluded that there was a risk to financeability in the medium term, and therefore that a more substantive review would be appropriate.*

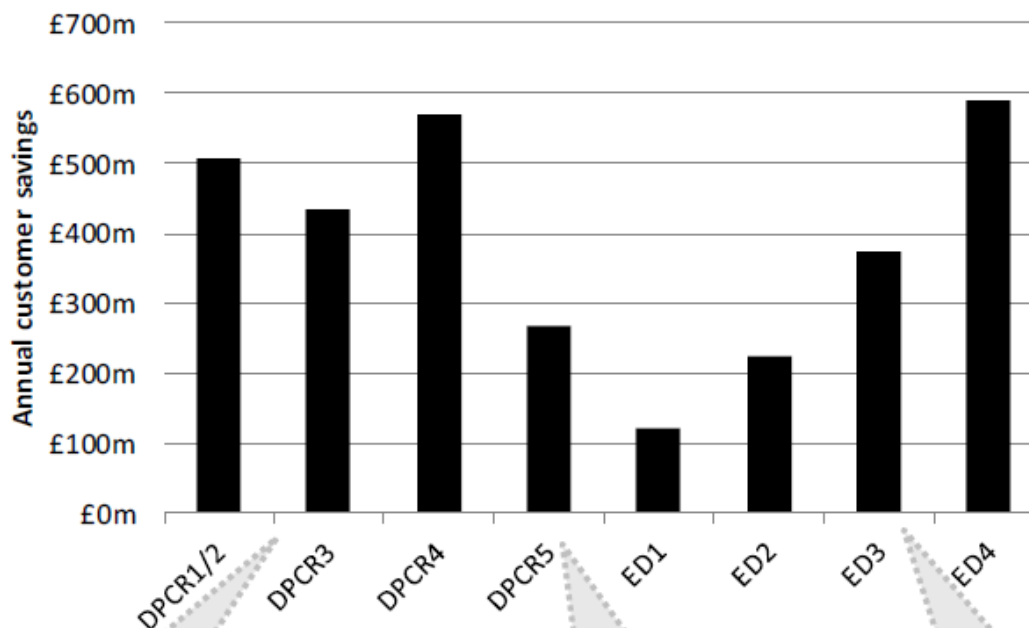
*As a result, **GEMA stated that in coming to its decision on a transition for ED1, it was also having regard to the need for such a review of medium-term effects. It was not only looking at the appropriate transition on the assumption that the 45-year asset life would be implemented in full from ED2.** For example:*

It was becoming clearer to us that it would not be in the consumer interest to [...] dive headlong into this deep valley of depreciation and that a transitional period would provide us with a somewhat softened approach, which would allow us time to reflect before we reached RIIO-ED2 as to how to take this forward."

CMA, 2015, British Gas Trading Limited v The Gas and Electricity Markets Authority, Final Determination, paragraphs 7.31-7.32, emphasis added

Current customers weren't over-paying under 20 year asset lives; they were saving money

PRE-RIIO DEPRECIATION POLICIES vs A 45 YEAR POLICY



1995-2010: Electricity distribution customers saved approximately £500m per annum thanks to accelerated depreciation policies

2010-2025: Higher investment (and the associated 20-year depreciation) was reducing these savings but current customers were still not over-paying

2025 onwards: 500m+ per annum savings would have re-emerged, at current investment levels and even if ultra-low interest rates remained

Notes:

- Results cover 14 DNOs
- The cost of capital remains at forecast RIIO-2 levels for the whole period (customer savings would be higher under higher WACC scenarios)
- Expenditure remains at forecast ED1 period closing levels

Conclusions

1 The rationale for the current, privatised, regulatory model remains sound, however its important to understand the overall nature of the “regulatory deal” before tweaking parts of it, lest we risk compromising it.

2 Ofgem’s 45 year asset life policy could see DNO charges rise by over 70% *even with no change in expenditure*
Credit ratings would also be strained during the transition which may require Ofgem to set a higher WACC
Expenditure to meet low carbon targets would compound these issues

3 If Ofgem maintains its current asset life policy, it is essentially gambling that the WACC will stay at extremely low levels; anything above a small increase in the WACC will cause major costs to distribution users
This risk would be even worse if the low carbon transition requires significant additional expenditure on networks

4 Ofgem deliberately delayed the policy in the ED1 period to buy itself more time

5 RAV growth would be curtailed significantly if Ofgem moved new RAV additions to a shorter asset life...
...while keeping the option to depreciate incremental expenditure above business-as-usual levels on longer lives, if necessary

6 This “flexible” approach would have many advantages:

- Revenue growth would be heavily constrained, compared to a 45 year approach
- Credit ratings would be supported
- There would be more headroom to fund the low carbon transition

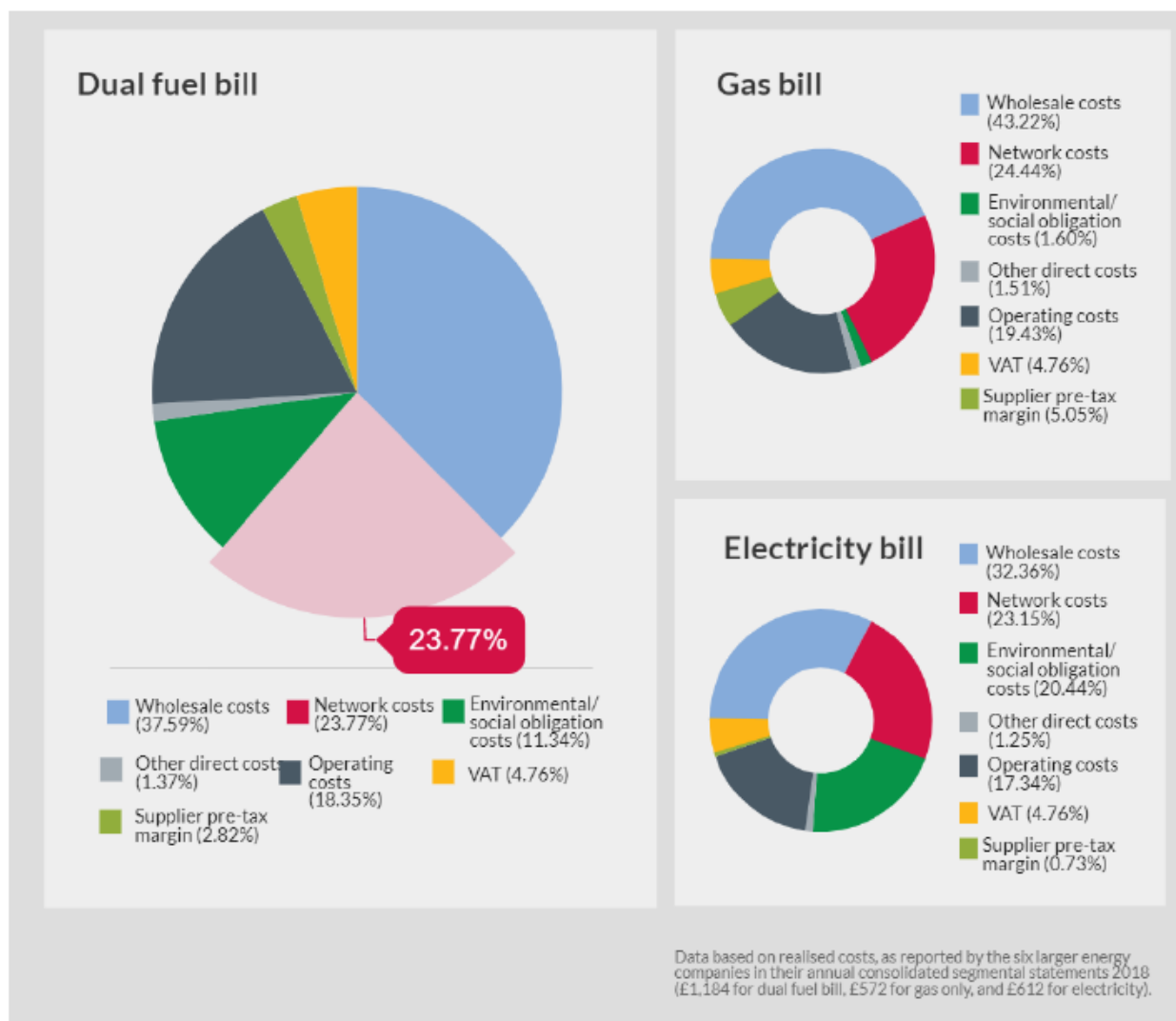
7 Current customers would not be unfairly burdened by this approach:

- Current customers are currently paying *less* than they would be, if asset lives had always been 45 years, thanks to the benefits they already enjoy from a lower RAV
- These benefits would be preserved for future customers too – ***intergenerational inequality is an obvious issue***
- If the transition does require a major uplift in expenditure, 45 year asset lives could be applied to this increment, mitigating any near term bill impact and spreading the additional cost fairly over time

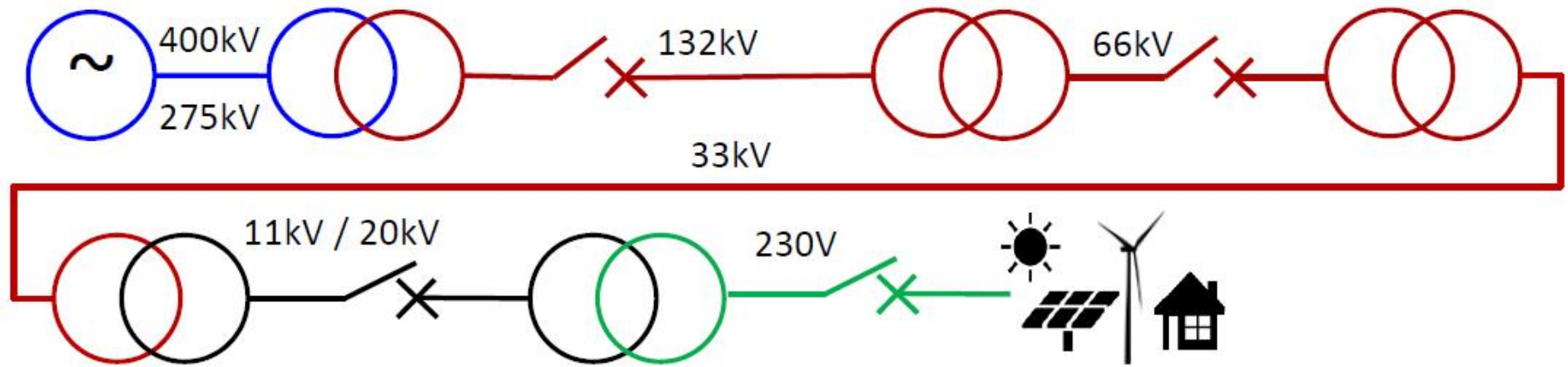


Back-up / background

Makeup of energy and electricity consumer Bills



What the network is made up of



Transmission Voltages

EHV (Extra High Voltage)

HV (High Voltage)

LV (Low Voltage)



HV circuit breaker



11kV Cables



HV (20kV) o/h lines



Distribution transformer

History of UK Electricity Markets – a story of disaggregation

1880-1920s

- Nascent industry, regional electricity companies
- Weir Report leads to the creation of the Central Electricity Board and the National Grid operating at 132 kV (50 Hz)

1940s and 1950s *Rapid growth*

- Growth of industry and consolidation, creation of Electricity Generating Board (CEGB).

1989/1990 *Privatisation*

- **Privatisation**, industry broken up into Generation, Transmission and Regional supply and distribution companies.
- Pool established.

1990s-2000s *Incremental reforms*

- Regional companies split into distribution and supply businesses
- **Supplier hub model**, consolidation of supply into the “big six”
- NETTA and BETTA energy markets

Recent past – present *Paradigm Shift?*

- Big 6 challenged by new entrants “challengers”, new entrants then disrupted
- Electricity Market Reform, capacity markets and CfDs
- Smart Flexible Energy system, Supplier Default, DSO

History of UK Electricity Markets

1880-1920s	Nascent industry, regional electricity companies
1901	Newcastle upon Tyne Electric Supply Company (NESCO) opened Neptune Bank Power Station, the first in the UK to supply three-phase electric power.
1926	Weir Report leads to the Electricity (Supply) Act 1926 (repealed 1989) — created Central Electricity Board and the National Grid operating at 132 kV (50 Hz)
1947	The Electricity Act 1947 (repealed 1989). It merged 625 electricity companies to be vested in twelve area electricity boards and the generation and 132 kV National Grid were vested with the British Electricity Authority.
1957	The Electricity Act 1957 (repealed 1989). The Central Electricity Authority was dissolved and replaced by Central Electricity Generating Board and the Electricity Council.
1989/1990	The Electricity Act 1989 provided for the privatisation of the electricity industry, and introduced the Fossil Fuel Levy to support the nuclear power industry. Energy market – the pool. Beginning of the privatization of the Central Electricity Generating Board. CEGB is broken up into three new companies: Powergen, National Power and National Grid Company. Later, the nuclear component within National Power was removed and vested in Nuclear Electric.
2001	Utilities Act 2000. The Balancing and Settlement Code (BSC) was introduced as part of the New Electricity Trading Arrangements (NETA), which came into force in England and Wales in March 2001. These arrangements, and the scope of the BSC, were subsequently extended to Scotland in April 2005 as the British Electricity Trading and Transmission Arrangements (BETTA).
2013	Energy Act 2013 Electricity Market Reform introduces a capacity market and Contracts for Difference (CfDs).

Network regulation is an evolving picture of increasing sophistication ...and complexity

Privatisation

- Regional distribution and supply companies initially created
- Supply and distribution disaggregated later

Early 1990s: RPI-X price cap

- Pure distribution price cap
- RPI inflation increase less 'productivity' X factor
- Strong incentive to reduce costs: company keeps a share

Late 1990s and 2000s: 'building blocks' evolve

- Regulatory asset value (RAV) established, mid 1990s
- More incentives e.g. for fewer interruptions
- Move to revenue cap removed demand risk in 2010

2012 to present: further evolution (RIIO)

- Fundamentals retained, with more focus on output delivery
- Largely followed the 2010 to 2015 price control model
- Adjustments to encourage long term stewardship

Future trend

- The value of stability is well-recognized...
- ...but fine-tuning will continue
- Needs to adapt to changing energy sector

- We now have three presentations of proposals put forward by members.
- To consider:
 - Is this a priority for the group to focus on?
 - How would consumers benefit from the proposal?
 - What alternative solutions might there be to address the issue identified?
 - How would the framework need to change in order for the proposals to be implemented?
 - What evidence or analysis would we need to see to progress the idea?



**SP ENERGY
NETWORKS**



Scottish & Southern
Electricity Networks

OWG

Strategic Investment

17 January 2020

Level of confidentiality:

EXTERNAL USE

Background and Context

The strategic challenges faced under RII0-ED2 in relation to growth in EVs, other Low Carbon Technologies and delivery of Government's net zero policy objectives will drive a greater need for strategic / anticipatory investment to ensure the network is developed and managed to facilitate delivery of customer requirements in a **timely and efficient way**.

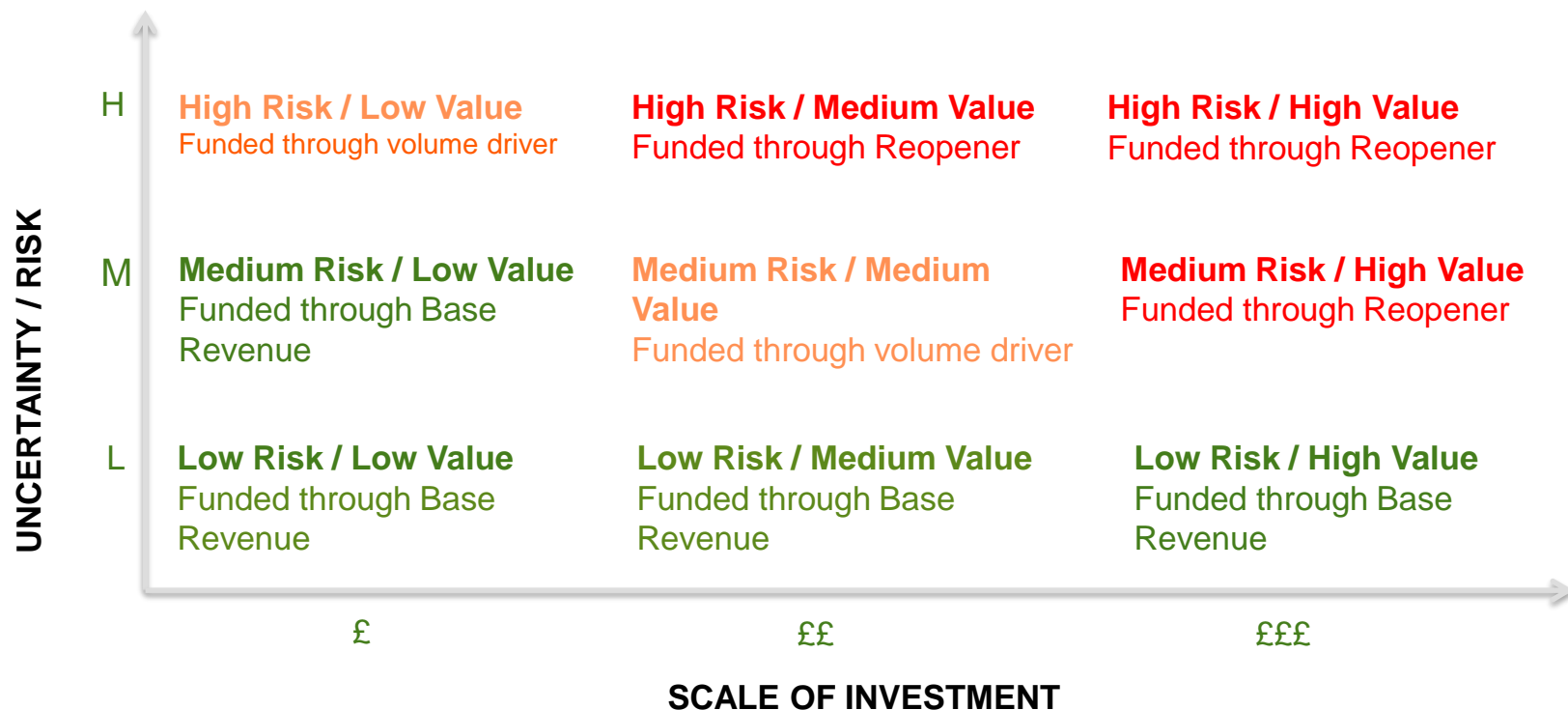
Strategic / anticipatory investment is not a new concept for networks, but there is concern that the scale and pace of change going forward will be more significant and **uncertainty regarding timing and / or scale of investment** may be greater, creating additional risk for DNOs and customers.

A robust and transparent framework is required to ensure stakeholders have confidence in decision making and to ensure risks are managed in an efficient and proportionate way.

In general, tools currently exist to deal with strategic / anticipatory investment, uncertainty and risk but further development e.g. to confirm how and when they should be applied is required. Tools include:

- Use of planning and forecasting scenarios to demonstrate value and risk under base case and extremes
- Engineering and technical justification
- Cost Benefit Analysis
- Outputs and Price Control Deliverables
- Totex Incentive Mechanism
- Close out adjustment or claw back mechanisms
- Revenue Adjustment Mechanisms

Strategic / Anticipatory Investment – Approach to Funding



The diagram above sets out a high level approach to funding based on overarching principles.

- ❖ *Definitions for Low, Medium and High Uncertainty / Risk need to be developed*
- ❖ *Definitions also need to be developed for tranches of investment*
- ❖ *Alternative approaches to volume drivers and reopeners or PCDs exist and need to be defined*

Low Risk / Low Value

- ❖ Value of investment is below a predetermined threshold e.g. <£1m. This could be applied at a project or scheme level; and
- ❖ Need for investment is known e.g. secondary reinforcement, leading indicators, asset condition

Low Risk / Medium Value

- ❖ Value of investment is within a predetermined range e.g. £1m to £10m
- ❖ Need for investment is known as above, or has been demonstrated e.g. Cost Benefit Case and Engineering / Technical Justification
- ❖ There is clear User or Stakeholder Commitment

Low Risk / High Value

- ❖ Value of investment is above a predetermined value e.g. >£10m
- ❖ Need and Commitment clear, as set out above

Medium Risk / Low Value

- ❖ Value of investment is below predetermined threshold e.g. £1m, as above
- ❖ There are elements of need that are not certain, but cost of incremental investment is low. Predetermined thresholds for appropriate uncertainty levels could be set e.g. cost associated with incremental investment / risk is less than 15% of base cost, or efficiency savings associated with carrying out work now are less than the incremental cost of deferring incremental investment until some future point in time

Medium Risk / Medium Value

- ❖ Value of investment is within a predetermined threshold e.g. £1m to £10m
- ❖ There are elements of need that are not certain giving risk score of more than a predetermined amount or incremental cost of more than a predetermined amount e.g. +25%.

High Risk / Low Value

- ❖ Value of investment is below a predetermined value e.g. £1m
- ❖ Some level of investment is required and supported by customers or stakeholders but scale or timing is not clear
- ❖ User or Stakeholder Commitment is not provided

Medium Risk / High Value

- ❖ Value of investment is above a predetermined value e.g. >£10m
- ❖ There are elements of risk that are not certain, giving a risk score of more than a predetermined amount or incremental cost of more than a predetermined amount e.g. +25%

High Risk / Medium Value

- ❖ Value of investment is within a predetermined threshold e.g. £1m to £10m
- ❖ Some level of investment is required and supported by customers or stakeholders but scale or timing is not clear
- ❖ User or Stakeholder Commitment is not provided

High Risk / High Value

- ❖ Value of investment is above a predetermined threshold e.g. >£10m
 - ❖ Some level of investment is required and supported by customers or stakeholders but scale or timing is not clear
 - ❖ User or Stakeholder Commitment is not provided
-

Note: All figures shown above are for illustrative purposes at this stage, to facilitate discussion.

Funding Mechanisms and Considerations

- ❖ **Base Revenue** – where the cost of investment, risk or uncertainty is within acceptable parameters, funding should be provided through base revenue.
- ❖ **Volume Driver** – volume drivers can be used to release revenue in increments as need becomes clearer and risk reduces. Mechanisms currently exist and have been used in distribution and transmission e.g. £ / unit of incremental capacity applied for or delivered.
- ❖ **Reopeners** – where uncertainty, risk and value are material, reopeners can be used to ensure due consideration is given to all factors e.g. triggered for specific events and at specific points in time. Some modification may be required for ED2; consideration should be given to whether frequency and thresholds should be more flexible than they are at present. There is also generally some form of materiality test applied e.g. project has to be greater than X% of base revenue or greater than a predetermined amount e.g. 25m for HVPs. Consideration should be given to whether this is still appropriate.
- ❖ **Layering Approach** – a combination of base revenue, volume drivers and reopeners are likely to be required for ED2 reflecting the different value and risk associated with individual projects. Base revenue would be provided up front to cover projects where need and cost are reasonably certain. Reopeners and volume drivers could be used on top of base revenue to “check in” and release incremental revenue as appropriate.
- ❖ **Cost Benefit Case** – the need and level of risk / uncertainty could be analysed for all projects or schemes above a defined threshold e.g. £1m as part of the Business Plan review. Guidance around Cost Benefit, Engineering and Technical justification needs to be developed to take account of the short, medium and long term nature of projects or schemes and the broad range of benefits, including economic and societal benefits, associated with low carbon transition.
- ❖ **User or Stakeholder Commitment** – this is an essential tool to help reduce risk. Commitment can take many forms. Consideration should be given to developments in Transmission e.g. payment of a connection fee, placing of security and liabilities, planning application submitted / consent achieved, customer funding in place, customer equipment ordered etc.
- ❖ **Uncertainty / Risk** – consideration should be given to guidelines on how to reduce levels of uncertainty, including the role of stakeholder evidence and legislative requirements in reducing uncertainty.
- ❖ **PCDs** – may be appropriate for projects that are uncertain but unit costs are known.
- ❖ **Close Out** – this provides a useful tool for Ofgem to check a DNO's decisions to ensure overall, the network has been developed, operated and maintained in an economic and efficient manner.
- ❖ **Outputs** – must be **relevant and within a DNOs control to drive appropriate behaviour**. Relevant outputs could include existing measures e.g. Customer Interruptions, Customer Minutes Lost, Time to Connect, Broad Measure of Customer Satisfaction. However, additional measures may also be relevant and could be considered on a project by project basis as with High Value Project reopeners e.g. incremental capacity delivered. This may include timeliness of delivery and delivery within budget. Given the nature of strategic investment and net zero, profiling of outputs may be required along with flexibility to accommodate changes in need / delivery dates. This can be assessed as part of Business Plan and CBA assessment.

Next Steps

- ❖ Define strategic / anticipatory investment
- ❖ Review example projects to understand different values, levels of uncertainty and risk, and to test principles / approach
- ❖ Carry out further analysis to define appropriate limits and trigger points for funding each category of strategic / anticipatory investment based on value and uncertainty
- ❖ Develop a framework and guidance for supporting tools such as CBA, Engineering and Technical Justification, scenario planning etc. to ensure there is a clear and robust framework that ensures all appropriate risks and benefits are considered and quantified over a reasonable time horizon to help inform decisions
- ❖ Develop options for volume / revenue drivers
- ❖ Develop possible reopener mechanisms and parameters
- ❖ Develop thinking on outputs, time periods for delivery and review
- ❖ Provide examples of where a PCD may be more appropriate than a reopener mechanism

How to set price controls that support decarbonisation goals

E.ON UK



The just transition to Net Zero

Decarbonisation of electricity

- Currently, a significant contribution by all through electricity bill
- Voluntary involvement (you don't have to put PV on your roof)
- Policy has (just about) delivered grid parity for renewables.
- Clear direction of travel for future policy (continued CfDs, SEGs charged through bill incentivises low carbon investment)

Decarbonisation of heat

- Currently, a small contribution by all through general taxation
- All customers will eventually have to be involved (new heating system, either heat pump or hydrogen boiler)
- Policy is a long way from delivering parity with gas. No clear direction of travel
- No clear direction of travel

Decarbonisation of transport

- Currently, a small contribution by all through general taxation
- All customers will eventually have to be involved (new zero carbon car)
- Policy has (nearly) delivered parity with petrol/diesel.
- Mass market uptake likely during 2020s removing need for grants and making zero carbon transport cheaper though high capex will continue to be a barrier to vulnerable customers

Everyone contributes through elec bill, can opt out of direct involvement. Just transition question about fairness of contribution

Lack of policy direction makes fairness of funding mechanism difficult (esp. due to eventual mandatory involvement)

Grants likely to fall away, but eventual mandatory involvement makes just transition more difficult

Grant-enabled routes to delivery tend to see vulnerable customers miss out ...

Examples

- Feed in tariffs/SEG
- Renewable heat incentive
- Scrappage schemes
- EV/charging point grants

Uptake is lower amongst vulnerable customers, partly due to the lack of engagement



For non-mandatory involvement just have to ensure that levies are applied justly i.e. not through a regressive mechanism

Obligations maybe better route for mandatory involvement

Example

- Energy Company Obligation
- Smart meter rollout

Targets/supports vulnerable customers specifically (though not closed to non vulnerable)



As vulnerability is taken into account, obligation maybe a better route to a just transition

DNOs are in a good position to deliver a residential EV charging point obligation alongside local authorities/housing associations

For the mandatory involvement in the decarbonisation of transport, DNOs are in a good position to deliver an EV charging point rollout obligation because DNOs:

- have data on customer vulnerability via the PSR and improved data sharing with suppliers/Govt/LAs etc
- have the capability and financial backing to deliver the national rollout of EV charging points at least cost
- have existing relationships with local authorities to identify appropriate sites/potentially pass ownership to after installation
- can benefit from knowing where EV charging points are being installed (better forecasting) and contracting with the local authority to deliver local flexibility services

Vulnerable customers are less likely to have off street parking so its is imagined that the obligation would best work for 'set-aside' charging bays in identified target residential areas. This is broadly similar to the On-Street Residential Chargepoint Scheme which opened to local authorities in 2017.

Residents must be able to charge their cars at the same price as a domestic property.

Funding for the obligation would be through a progressive mechanism such as general taxation.

SMART STREET

**A brief overview and ED2 framework
considerations arising**

Friday 17 January 2020

**electricity
north west**

Bringing energy to your door




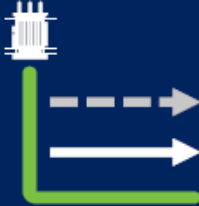


Stay connected...



www.enwl.co.uk

SMART STREET



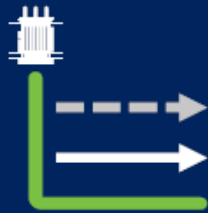
Site selection	On Load Tap Changing	Meshing	Integration
			
Integrated system approach Deployed across Electricity North West network area	Active voltage regulation	Active LV network configuration	Active LV network optimisation

"A unique application to reduce customers' bills and facilitate the transition to a low carbon economy"

Many benefit vectors....



Create capacity headroom to connect more LCTs



Prevent breach of statutory voltage limits associated with demand growth/ generation



Reduce energy consumption
Run network more efficiently
Decrease losses



Reduce carbon impact
Meet national and regional targets



Help to reduce fuel poverty gap for Electricity North West's customers

- The rollout underway in ED1 will stimulate supply chains
- Strong North West Stakeholder support and involvement to date
- Anticipated by ENWL for potential inclusion in ED2 business plans

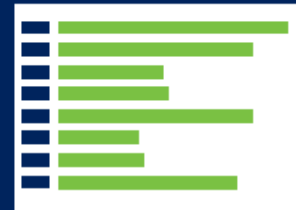
ED2 Framework Considerations



Pace of change and innovation accelerates into ED2 so regulation needs to continue to be responsive and supportive of innovation.



A “vanilla” application of the ED1 CBA may not have properly assessed the benefits.



How to assess multi Vector solutions.



Collecting relevant cost data. This and other new cost drivers and categories are emerging.

SMART STREET

Discussion

**electricity
north west**

Bringing energy to your door



Stay connected...



www.enwl.co.uk

More information can be found at

<https://www.enwl.co.uk/about-us/news/latest-news-and-views/2019/groundbreaking-smart-street-project-could-see-electricity-bills-cut-by-up-to-60-per-year/>

https://www.ofgem.gov.uk/system/files/docs/2019/06/electricity_north_west_smart_street_irm_submission_non-confidential.pdf

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.