Sustainability first Viewpoint

The independent charity and think tank shaping sustainability policy and regulatory agendas for UK utilities, for the benefit of consumers, citizens and the environment.

Ofgem ED2 Methodology : What will ambition look like on decarbonisation ?

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Introduction

Ofgem's RIIO ED2 price control has wide ramifications for sustainability including the impacts on vulnerable customers, the need for innovation and the creation of a DSO role to support the energy system transition, alongside wider environmental and governance considerations. **This paper focuses specifically on one element of this – the need for a de-carbonisation framework for ED2.** Our response to the Ofgem sector specific methodology consultation for ED2 (due to be published at the end of July) will cover the full range of issues.

In preparing this paper we've looked at the nuts and bolts of ED1 – and also stepped back - to ask what Ofgem's ED2 package might add up to for decarbonisation in-the-round. Ofgem stress how RIIO2 requires a very different approach to regulation. The next couple of months can make a big difference in how far the DNO price-control methodology delivers a sufficiently ambitious decarbonisation framework. Getting the methodology right is critical - both for encouraging the companies to be ambitious in their plans and also in providing Ofgem with a robust framework for the decisions it must take.

Our high-level look at what has been discussed to date for the upcoming ED2 package on decarbonisation and net-zero suggests the risk of undue incrementalism and limited strategic ambition. The draft methodology may well fall short on the 'step-up' needed to meet the net-zero trajectories expected in the forthcoming 6th carbon budget – and for which ED2 is time-critical. If we are to see ambitious outcomes for decarbonisation right across the full spectrum of DNO activity, the package of ED2 incentives must be framed in-the-round to send a strong coherent signal to the networks – be this for addressing their own emissions trajectories - or for their role in net-zero facilitation.

These two objectives are distinct but must also in the end be drawn together in an effective framework. The risk is that there is more focus on the exciting issues around net zero - with the important hard graft around companies' own emissions neglected. We consider each in turn.

Company emissions

First off, company **green-house gas emissions in ED1 are in urgent need of consistent base-lining**. Without this baseline - at both company- and sector-level - it is impossible to know where to focus and to successfully incentivise science-based targets for ED2 and beyond.

Second, detailed guidance is needed from Ofgem on **common approaches to reporting emissions** for the company's business carbon footprint[1]. Standardised reporting lies at the heart of successful incentives to drive down emissions. Otherwise, how will the revamped environmental action plans – a core element of DNO price-control submissions - allow Ofgem, the companies or others to even know what 'ambitious' looks like ? Or to benchmark ? Or to look whole-system ?

Third, '**science based targets**' are not just a static formula. Targets proposed by DNOs for the ED2 period should reflect latest UK commitments and thinking on net-zero. In the gas distribution and transmission draft determinations Ofgem indicate '*Greenhouse gas reduction targets are considered 'science-based' if they are in line with the latest climate science advice on what is needed to meet the goals of the Paris Agreement - to limit global*

[1] i.e how emissions are classified under 'scopes 1, 2 and 3', treatment of embedded carbon and supply-chain emissions, which greenhouse-gas conversion factors to apply, which time-periods to use for baselining and for targets

warming to well below 2°C above pre-industrial level and pursue efforts to limit warming to 1.5°C'. But DNO targets set on that basis would not be in step with the UK's statutory 1.5° net-zero commitment by 2050 which goes beyond Paris. The leading advisory body on science-based targets encourages[2] companies to sign-up to targets consistent with 1.5 degrees, although targets in line with the wider definition are still accepted. For ED2, Ofgem must recognise that stronger ambition-levels are possible within the framework of science based targets.

Fourth, development of targets needs a particular focus on emissions specific to the energy sector and energy networks. Not least, **greenhouse gas emissions associated with distribution exceed those of transmission by a factor of two. Distribution losses and SF6 contribute by far the largest share of the DNO business carbon footprint**. So far however, thinking from both Ofgem and the DNOs has been rather limited on how to incentivise better outcomes for either losses or SF6 in the ED2 period to 2028. Indeed, there is a real risk that these may be given even less focus than in ED1.

Distribution losses are a significant efficiency challenge. They also represent the lion's share of green-house gas emissions associated with DNO operation. ED2 documents to date make only one reference to losses. The topic of losses is complex - both in terms of 'who owns them' and also how to calculate the related emissions (especially given the fast increasing system-share of renewables). Also, losses are to some extent set to increase as networks are encouraged to operate nearer to their physical limits for efficiency reasons with many more low carbon technologies connecting-up. But this complexity is precisely why the ED2 methodology needs new and strong incentives to tackle distribution losses : to support the companies in getting to grips with better measurement and better management of losses and their associated emissions - be these 'controllable' or 'non-controllable'. Losses cannot simply be put on the too difficult pile.

Likewise, ED2 needs a coherent and strong framework for dealing with **leakage of SF6** (sulphur-hexafluoride) in DNO equipment, a green-house gas 23,000-times more potent than CO2. SF6 leakage seems a relatively limited problem for DNOs, but it is hard to see why the same economic incentive should not apply as is proposed for transmission. At the same time, **company collaboration must be actively encouraged and incentivised to deliver a long-term strategy for SF6 across both transmission and distribution**, working with the supply chain on new approaches for containment, safe removal and procurement of alternative technologies[3].

Some DNO actions to reduce green-house gas emissions within the ED2 period – be that for losses or SF6 – may well entail additional up-front expenditure to achieve a long-run carbon benefit. Such expenditure may sit mostly within the envelope of base-line revenues allowed by Ofgem for capital and operational costs. It is therefore important that, in its technical approaches to company cost-assessments, Ofgem appropriately addresses the question of long-run carbon-benefit as well as the cost aspect (see below on the cost-of-carbon).

Finally there is the question of how an appropriate level of ambition on decarbonisation and net-zero is incentivised in ED2. A central driver of the RIIO regulatory approach is the **framing and incentivising of outputs** – output delivery incentives – designed to signal regulator expectation on priorities in a price control period and to lift company ambition. These incentives can be 'reputational' (more a nudge-form of encouragement) or financial (a clearer, stronger signal). So far, in discussion on incentives to signal the importance of reducing company green-house gas emissions in ED2, there has been a strong leaning towards incentives of a largely reputational form, rather than financial. This lacks teeth and looks

[2] https://sciencebasedtargets.org/step-by-step-guide/

[3] Total SF6 volumes in transmission switchgear by far exceed those contained in distribution equipment. In 2018-19 transmission SF6 leakage in tCO2e was ~15-times greater than distribution. By contrast, for distribution, the major challenge is that SF6 is contained in very many more individual items of smaller switch-gear equipment and across very many more sites.

set to result in incremental but not fundamental change in company culture and delivery. It reflects a view – somewhat complacent - that many outputs relating to de-carbonisation are hard to quantify and measure – be this distribution losses or SF6. But, strong incentives which capture the need to shift gear and to start to quantify outputs and to measure progress can raise the bar – even if this is simply the start of that journey, not an end-point.

And if Ofgem ultimately decides to go down the 'reputational incentive' path, serious thought is still needed on what will make for an effective reputational tool. To 'up' DNO ambition across-the-board on decarbonisation and net-zero is not a trivial task. It is not enough to ask companies simply to publish their own individual environmental reports or to submit limited reports to the regulator each year. Ofgem also has a key role in shining a light on company performance. Disappointingly, Ofgem's latest round of annual reports on RIIO performance include minimal coverage of company environmental performance.

If, as seems likely, Ofgem wants to place more reliance in RIIO2 on **reputational regulation** then it needs to become more than a catch-phrase. Ofgem may wish to revisit earlier work by UKRN[4] and Sustainability First[5] on this topic and look to take its own thinking to the next level on what reputational regulation could mean in practice for decarbonisation and also more widely. This should include lessons learned from previous approaches, and consideration of the potential role of the customer engagement and user groups in holding companies to account on reputational incentives in particular.

Facilitating net-zero

As well as addressing companies' own emissions, the ED2 methodology must of course address and get-right the wider incentives for distribution networks to support a successful energy transition and net-zero delivery.

Within this, four areas are crucial :

- Incentives relating to new network investment, including **strategic investment to connect new low-carbon technologies at scale** – EVs and heat
- Approaches to **connecting distributed energy resources** (including the role for flexibility and network charging);
- Incentives **to shape the DSO role going forwards** and to drive far more **flexibility** across the networks through correctly incentivising DSO activity; and,
- Design of criteria to access **funding pots for strategic innovation** to accelerate net-zero.

Unsurprisingly, most debate so far on the ED2 methodology and net-zero has focused largely on these four topic areas.

In particular, there has been much detailed discussion on the **design of potential uncertainty mechanisms** to adopt in relation to expenditure for new network investment. This is an important issue but is not for now and would warrant a paper in its own right. However one word of caution at this point. It is not enough to think of the transition as an exogenous factor to which companies must respond – the typical use of uncertainty mechanisms in regulation. Rather, net-zero equates to a significant societal shift which needs the distribution networks to be proactive in helping deliver, embracing the right behaviours and culture, focused on outcomes. That means considering **incentives which will also drive these wider outcomes - and which uncertainty mechanisms alone are unlikely to do**.

[4] https://www.ukrn.org.uk/wp-content/uploads/2018/06/2040728-DataPubRepReg.pdf

[5] Project Inspire Included stakeholder views on the role of comparative information – here (p21)

Based on the draft RIIO2 determinations and references to adaptive regulation **as the way forward for strategic investment**, Ofgem will likely look to a mix of uncertainty mechanisms, use-it-or-lose-it allowances and reopeners to deal with uncertainty in ED2. It would be for regret if a piecemeal approach acted as an unintended drag on investment. A strategic whole-system view must still be feasible, rather than Ofgem simply approving individual projects in turn as they are brought forward. Given the emphasis rightly placed by Ofgem on whole systems further thought is needed on how this balance would be achieved.

The involvement of BEIS and others through Ofgem's Net Zero Advisory Group is of course helpful in providing a wider context for decisions. But clarification of government policy may yet take time, say on heat, or for hydrogen and CCUS, and there is a risk that policy delay may also leave proposals for strategic network investment in limbo – perhaps resulting in later pressure for accelerated delivery at higher costs for customers. Adaptive regulation seems the right direction for Ofgem to head in, but further thought is needed as to what this might in the end mean for medium-term network outcomes, the risks involved and how Ofgem can be confident that it will be able to make the kinds of crucial decisions required at the pace that will be needed, while still allowing adequate opportunity for stakeholder input.

Fundamental under-pinnings – carbon-pricing and the business plan incentive

Underpinning the actions needed for both companies' own emissions and on the transition are two central elements of the regulatory framework – the cost of carbon and the business plan incentive.

First there is a need for **clear guidance from Ofgem on a common approach** to the value to adopt on the **cost of carbon** in company business plan cost-benefit assessments (CBAs) and in the design of incentives. This seems like a technical detail - but is fundamental in evaluating project options and business plan priorities on a common basis – and to inform the fundamental decisions about how much it is worth spending to achieve carbon savings. This guidance is needed as much to evaluate actions to reduce business carbon foot-print emissions (i.e. on losses, SF6), as it is to assess the costs and benefits of new network investment for delivery of net-zero, strategic investment included. In ED2 working groups Ofgem has talked about companies using published figures for the cost of carbon in their CBAs. However Ofgem in their own Impact Assessment Guidance have signalled that they will carry out sensitivity analysis using a higher cost of carbon than that in the Treasury Green Book which has not yet been updated for net zero. Clarification is needed as to the approach that should be taken by the companies.

Another fundamental part of the incentive jigsaw for ED2 is the **Business Plan Incentive** (BPI). This penalty / reward mechanism is aimed at encouraging submission of high quality company business plans – both in terms of the quality of cost- justification and encouraging high levels of ambition by companies around service, vulnerability, engagement and decarbonisation. A major lesson is emerging from the RIIO2 draft determinations published on 9 July – and Sustainability First sees a re-think necessary for the draft ED2 methodology.

In particular, the approach to the **Consumer Value Proposition (CVP)**, a major driver of how companies are assessed in the business plan incentive process, needs to be re-thought. For decarbonisation, for engagement and for vulnerability the CVP does not seem to be delivering against the high level goal of the BPI to raise ambition levels. In particular it seems designed to reward individual innovative proposals rather than driving more ambition in the business plan overall. Nor does the CVP in its current form lay the ground for Ofgem to produce an 'in-the-round' assessment of quality and ambition across the company business plans overall. This seems a significant short-coming – which Ofgem still has time to fix for ED2. This could help 'up-the-game' from both a company and regulatory stand-point – and importantly – assist wider stakeholders to provide effective challenge.

RAG-ratings or (preferably) some sort of scoring mechanism may be viewed as unduly subjective measures. But better than nothing, they would provide a view on relative ambition across the companies – be this on decarbonisation or more widely. They would also avoid an undue focus on quantifiable outcomes and creative techniques for valuation. And whether judging individual initiatives or looking more broadly Ofgem needs to have confidence that it truly understands what best practice is currently and is likely to look like in the near term, to ensure it sets expectations at an appropriately stretching level.

As well as judging ambition in the round, to support decarbonisation, the BPI also needs to send an effective and strong signal on approaches to cross-company collaboration (e.g. on scenarios development, on BCF reporting and science-based targets) and on stakeholder engagement on regional and local area energy plans. These elements need to be built into any revised framework for the BPI.

Conclusion - a decarbonisation framework for ED2

Bringing these separate elements together, how then should we judge in-the-round what strong regulatory ambition will look like on decarbonisation and net-zero in the draft ED2 methodology ?

From a Sustainability First stand-point, **a strong decarbonisation framework would pass the following tests** :

- **A significant step-up from ED1** : does the ED2 methodology represent a true step-up in ambition for decarbonisation against the current incentive package for ED1 in line with shifted customer and stakeholder expectations and societal needs?

- **Net-zero ambition-levels** : does the form of and focus of different uncertainty mechanisms proposed support significant company ambition on net-zero facilitation – including from a regional standpoint ?

- **Net-zero - facilitating a strong strategic approach** : does regulatory caution result in undue reliance on use-it-or-lose-it allowances or price-control reopeners – thereby driving a focus on 'stand alone' initiatives and projects at the possible expense of more coherent network-wide or strategic whole-system approaches ?

- **Business carbon foot-print, science-based targets and net-zero alignment** : are incentives and arrangements to review business carbon footprint, environmental action plans & reporting sufficiently strong to drive delivery of science-based targets in line with net-zero trajectories implied by the 6th carbon budget ?

- **Business plan guidance** : does Ofgem's business plan guidance provide sufficient detail on, for example, calculation of business carbon footprint, classification of emissions by scope, GHG conversion factors, base-line periods, expectations on targets – and very importantly – the value of carbon to be used in appraisals ?

- **Licence compliance & penalty / reward framework** : will companies be held to account for the decarbonisation commitments made in their environmental action plans, including business carbon footprint and decarbonisation commitments? Will these be embodied in licence conditions and implemented via price control deliverables and/or sit within a sufficiently strong penalty / reward framework ?

- **Capex and opex allowances** : for losses and SF6, do cost-assessment approaches for base-line revenues appropriately factor-in long-run carbon benefit of alternatives as well as the costs ?

- **Ambition on hard-to-quantify outputs** : will incentives push companies towards greater measurement and quantification of 'hard-to-quantify' outputs – especially distribution losses ?

- **Balance between reputational & financial incentives** : does the balance in the ED2 package overall – as between financial and reputational incentives - properly signal the importance of actions in the ED2 period to decarbonise ? And is it clear how any reputational incentives will work in practice?

- **Bespoke incentives** (company specific) : further to ET2, is there clarity on the expected framing, ambition-level and stakeholder process for bespoke incentives in ED2 which might fund 'above and beyond' net-zero projects that companies opt to bring forward ?

- **Innovation-funding coordination** : is there a well-coordinated framework with the other major innovation funding-bodies (BEIS, UKRI) on priorities for DNO / DSO innovation projects for decarbonisation and net-zero ?

- **Business Plan Incentive - to drive company-wide ambition on decarbonisation and collaboration where appropriate - and also to enable cross-company comparison**: does the form and scope of the business plan incentive – especially the consumer value proposition – truly raise standards and ambition across the piece (1) for the individual networks and (2) to allow comparison – either by the regulator or even through some healthy 'self-regulation' by the companies ?

- **Legitimacy**: how has Ofgem made sure it has the buy-in of stakeholders and customers, beyond the usual sector specific companies and groups eg ensuring it has engaged with and heard the views of broader environmental groups on this high profile issue and understands the customer perspective

Taken together, these points offer an initial strawman on what a strong framework for decarbonisation and net-zero might look like for ED2. Of course, these elements need to dovetail with other incentive arrangements, in particular for DNO digital strategies, for DSO, for wider environmental action and to link with support for consumers in vulnerable situations.

Price-control design is a specialist activity but securing wider stakeholder support for the direction taken is crucial. Regulators, companies and consultants understand the nuts and bolts – but few others. And, just like an exam mark scheme, how the ED2 methodology is framed will prove critical. The companies will put forward business plans and then deliver against them within the framework that Ofgem designs. There are costs all round to getting this wrong – be this in terms of slow progress on decarbonisation – or in later effort required to put right outcomes which turn out to be less strategic. Even if stakeholders do not take an active interest in price control mechanics they will care about the outcomes.

Many different aspects of the ED2 methodology are very important – for consumers, for vulnerability and disadvantage, for service-levels, for resilience and of course for cost-efficiency and financeability. Our focus here has been on how the methodology will treat decarbonisation and net-zero in-the-round. This is because, just as for digitalisation or for shaping the DSO role, this is largely new territory – for Ofgem, for the networks, for stakeholders and investors. A great deal has fundamentally changed since ED1 was designed eight years ago. Given how much hangs on the DNO role in the ED2 period in delivering on decarbonisation and facilitating net-zero let's avoid the trap of incrementalism, let's do the hard work and let's get this framework right.

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This discussion paper builds on a presentation by Sustainability First to two Ofgem ED2 Working Groups in July 2020. See the slide set here

About Sustainability First

Sustainability First is a think tank and charity that works in the energy, water and utility sectors. We have significant experience of consumer and public interest issues, regulation, sustainability and the demand side.

Sustainability First is represented on Ofgem's RIIO2 Challenge Group and has participated in a number of Ofgem working groups aimed at developing the ED2 price control for the electricity distribution networks. Some individual Sustainability First associates are also members of company consumer engagement groups and user groups as part of the RIIO process.

Find out more about our work here – www.sustainabilityfirst.org.uk