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To: ED3@ofgem.gov.uk

ED3 Sector Specific Methodology Consultation (SSMC)

Dear Ofgem,

Sustainability First is a long-standing charity and think tank focused on social and environmental issues in the energy and water sectors with a record of engagement on approaches to policy and regulation.

We have worked on the issues around RIIO price controls over many years with several major Sustainability First projects examining particular aspects. We have also served as members of the earlier government / Ofgem Smart Grids Forum, Ofgem's Strategic Advisory Board for market-wide half-hourly settlement and Ofgem's RIIO-2 Challenge Group. We provided a full [response](#) to the ED3 Framework Consultation.

As we have flagged recently to the RIIO team, Sustainability First is a small charity and, without funding for the work we do providing input on major consultations like this, we are constrained in how much resource we can devote to responding to what are very detailed and complex questions. We know that Ofgem has valued our contributions to date and we had hoped that a way forward could be found to enable us to continue to engage. However, in the absence of specific funding support, we have had to limit our response this time to a small number of areas where we have done significant work in the past that we can draw on and which we are keen is not overlooked. In particular, therefore, this response focuses on losses and some environmental issues such as SF6 and biodiversity.

We have also engaged directly with Ofgem colleagues on thinking around vulnerability, providing access to our ESAN network to enable Ofgem to explore the issues with informed stakeholders.

We have summarised below our key messages on these themes and attach answers to the specific questions raised where we have relevant insights.

Losses

In the lead up to ED2 we provided a comprehensive [report](#) which set out the history of the losses incentive in past price controls and why losses are important. It also reviewed the range of actions that the DNOs had referenced in their business plans to help tackle losses, which demonstrated clearly that there was a lot DNOs could do if properly incentivised – but noted the lack of any concrete commitments or ambition. We subsequently produced [updated analysis](#) on the overall cost of losses which at the time (at the peak of the energy crisis) we estimated at £100 per household, meriting serious focus.

Throughout our engagement on the development of ED2 we made clear that reputational incentives (through the EAP) were inadequate in what is a crucial but very technical area. We reiterated this message in our [response](#) to the ED3 Framework consultation (Q60). The lack of new thinking or work on losses in ED2 demonstrates clearly that some form of financial incentive is needed to focus minds.

We have also consistently stressed the need to see losses as a system efficiency issue not just a carbon issue – and hence welcome the move to consider loss management as part of the DSO's responsibility.

Linked to this we have highlighted, among other things, the need to think about peak losses (which will be higher in % terms than average because the majority of losses increase with the square of current). As reflected in the move to market wide half-hourly settlement in 2027, it is increasingly the case that when energy is used is at least as important as how much is used – from this it should be clear that some losses matter more than others.

While we understand and agree with the point that decisions around losses have to be balanced with other factors, we are concerned that Ofgem's framing around loss "optimisation" sends the wrong signal and risks the whole issue being put in the too difficult box. We agree that the goal should not necessarily be lower losses in absolute terms than we have today. However, losses are a cost on the system (unlike voltage which is not inherently good or bad). The whole point of economic regulation is to use financial incentives to reflect customer costs and benefits (or externalities) so that the network weighs them appropriately in its decision making. This not happening with losses.

It is vital, in this context, that Ofgem retains SLC49 which sets out the requirement for losses to be kept as low as reasonably practical. While this acknowledges that there are other factors in play it sets a clear direction.

While, ultimately, we would like to see a return to a full financial incentive on losses (building on what was in place back in DPCR4) we recognise that, with the lack of focus there has been in recent years, the measurement challenges remain un-addressed. For ED3 the only practical option is therefore a qualitative / discretionary financial incentive – either standalone or as part of the DSO incentive and metrics. Reputational incentives are inadequate as has been shown in ED2.

A priority focus within that should be an emphasis on DNOs building a better understanding of where and when losses occur, to enable the data-driven approach that Ofgem rightly identifies as needed.

Ofgem also needs to provide clear guidance on how the system costs are to be assessed. Higher losses means more generation capacity and more transmission capacity will be needed (in the context of what are already tough targets to meet CP2030). We believe Ofgem (supported by NESO) needs to set out how this should be taken into account by the DNOs in their CBAs as these costs are beyond the DNOs' purview.

Aside from the detail of the regulatory design for ED3 we would urge Ofgem to prioritise this as an area of work internally to help signal the importance of losses to the sector. In particular:

- Ofgem should start now by reviewing what the companies have set out in their existing losses strategies and Annual Environmental Reports to get a sense of the baseline level

of activity / commitment – and provide a comparative assessment as part of the mid-period review promised in the ED2 final determination.

- We note that the latest Ofgem [Annual Report](#) on ED2 performance in 23/4 does not include any information on losses, unlike earlier ED1 reports. This should feature in all future annual reports;
- Ofgem should properly scrutinise the losses strategies that are put forward for ED3 (with the aid of an independent expert panel if needed) and make the quality of the DSO losses strategies an explicit consideration in the Business Plan Incentive.

Environmental reporting

We are very pleased that Ofgem envisages taking a more proactive role in overseeing environmental performance, including through reviewing the Annual Environmental Reports. We have repeatedly raised concerns about the reliance on wider stakeholders holding the companies to account through the publication of Annual Environmental Reports. Stakeholders (even those with an active interest in this area like ourselves) do not have the resources to review performance across companies and cannot dig beneath the headline figures to understand reasons for varying levels of performance. We are therefore pleased that Ofgem is looking to play a much more active role and can be expected to challenge the companies as they would in other areas such as reliability. We see league tables or open hearings as effective ways to focus senior level attention in the companies. Annual reports on (comparative) performance by Ofgem can then help stakeholders play their part in holding the companies to account.

SF6

Again, we welcome the focus that is given to this area. We provided a comprehensive report¹ on the DNO ED2 SF6 strategies in response to the Call for Evidence and also supported the dissemination of the Grid Edge Policy report² on the wider issues around SF6 at transmission and distribution level. We hope that this work was helpful to Ofgem in shaping its thinking on SF6 but would encourage Ofgem to revisit both of these resources in finalising its approach for ED3.

At distribution level the SF6 challenge is different to transmission and is chiefly a future asset risk management problem given the much larger number of smaller assets involved. While it remains important to track leakage the priority is that the DNOs have clear strategies and plans for how they will manage down that bank of assets over time (including replacement programmes, safe disposal, and introducing alternatives to SF6 which involves navigating complex EU exemptions to the F-Gas Regulations including potential PFAS concerns with some alternatives). There may also be lessons from the PCB removal programme where there has been good collaboration between DNOs.

That said, we are pleased that Ofgem is putting more emphasis on SF6 leakage for ED3 and that, as a part of that, it has been scrutinising the more detailed information the networks were required to provide in their ED2 AERs on SF6 by voltage etc.

¹ <https://sustainabilityfirst.org.uk/publications/project-research-reports/sf6-ed2/>

² https://sustainabilityfirst.org.uk/wp-content/uploads/2024/01/sf6_in_GB_networks_final_201123.pdf

We are slightly surprised at the low leakage rates that the networks are reporting, in particular at higher voltages where leakage appears to be below the manufacturer's boilerplate figure. While we agree with Ofgem's conclusion that the best approach is to encourage collaboration and shared learning, we would also point to the need to challenge the underlying data. In particular, as we have highlighted previously, leakage is measured in terms of top-up. With low levels of leakage (and certainly with the closed units used at low voltage) top-up may not be required or possible and hence leakage data is not being captured. Looking at how best to measure leakage, including understanding full life cycle effects through to disposal, is therefore really important.

We understand that an ENA working group has been established to look at discrepancies in reporting practices across the companies. This is a helpful step and we hope that Ofgem will be able to draw on that work in developing reporting arrangements for ED3.

We also encourage Ofgem to look at any read across from GT3 recognising that thinking there is more established.

Biodiversity

We are pleased with the increased flexibility Ofgem is proposing to provide on the visual amenity UIOLI allowance which would enable more nature based solutions to be brought into scope.

However, more generally we have a significant concern about Ofgem's framing around biodiversity which appears to limit company actions to compliance with regulation. (ie Biodiversity Net Gain for projects requiring planning consent may be a step up from ED2 but is a legal requirement).

Given the growing recognition of the urgent need to address the loss of species and habitats in GB we would expect Ofgem to be demanding action from the networks given their essentially "place based" nature, both for their existing sites and, potentially, going beyond the net gain requirements for new projects. We would note that Ofwat have introduced a nature incentive as part of PR24 and have encouraged the water companies to emphasise nature-based solutions to flooding, for example.

While Ofgem may not feel it is not in a position to set stretch targets in this area, it should not preclude DNOs from coming forward with proposals that go beyond the legal minimum if there is clear stakeholder and customer support.

Moreover, it is incorrect to say this is the approach taken in the other price controls. For gas distribution the companies were able to put forward wider programmes aimed at increasing biodiversity on their sites. GDNs do not have many projects requiring planning consent but they have a large number of sites where relatively low cost measures can have significant biodiversity benefits. The DNOs will similarly have a large number of sites and should be thinking about opportunities to do more with them to support nature and habitats.

We hope these comments are helpful and would be happy to discuss further.

Yours faithfully

Maxine Frerk and Judith Ward, Associates

Responses to Specific questions

Energy Efficiency

Q41. Do you have any views on our proposal for DNOs to play a bigger role in the delivery of energy efficiency and low carbon measures?

We have previously encouraged Ofgem to look at all of the work that has been undertaken to date in this area. This includes multiple DNO projects on energy efficiency funded via the Network Innovation Allowance and also the Strategic Innovation Fund. Sustainability First also produced a comprehensive paper to Ofgem in March 2021 on 'What is the DNO Role on Energy Efficiency?'³ which set this out.

Where new roles for DNOs are considered, the best approach, in line with good regulatory practice, is likely to be to trial alternative approaches to the new role in limited areas, before deciding which, if any to roll out on a national scale. We had made a clear proposal in 2021, sadly not pursued, for a beacon innovation project of just this kind on energy efficiency, to enable a clearer view on next steps for the start of ED3. Such an approach to addressing the evolving role of DNOs, whether on energy efficiency or other areas, would likely lead to far superior outcomes to spending time and resources trying to figure out the best model in theory and then launching it everywhere in one go.

We also continue to remind Ofgem that DNOs do have an existing licence obligation in this area. Condition 31 E.1 refers to 'promoting the uptake of measures to improve energy efficiency where such services cost-effectively alleviate the need to upgrade or replace electricity capacity and support the efficient and secure operation of the distribution system. This may include procuring energy efficiency services, where it is economic and efficient to do so'.

Environment

Q42. How should the EAP baseline expectations be revised to drive improved environmental outcomes in ED3 and beyond?

Ofgem's proposed approach grounded in an assessment of best practice makes sense.

The prioritisation criteria make sense but we would not want them treated in a mechanistic / tick box fashion. Ofgem might be better positioning them as an illustrative list.

Q43. What criteria should be prioritised in a structured evaluation of DNOs' EAP for ED3?

We support the idea of Ofgem doing a structured evaluation of the EAPs. While the ISGs will no doubt be looking closely at their company's proposed EAP, they are not well placed to look across the sector. Knowing that Ofgem will be scrutinising the EAP will ensure the DNOs give it due attention.

³ https://sustainabilityfirst.org.uk/wp-content/uploads/2021/03/RIIO-ED2_SSM_-_Note_to_Ofgem_on_DNO_Energy_Efficiency.pdf

We are aware that Citizens Advice did a review of the EAPs for ED2⁴ which Ofgem might want to revisit. We are aware that this had to be externally commissioned as Citizens Advice did not have the capacity to do it in house. In our view an Ofgem led review would be more effective.

The criteria that Ofgem suggest all seem reasonable. Our one word of caution is for Ofgem to be clear how far it is still looking for the EAP to be essentially an accessible document, setting out the DNO's commitments and aimed at stakeholders - or whether it will need to become more of a regulatory submission setting out and evaluating options. There is no doubt a middle course but as a minimum Ofgem must allow for some detail to be in supporting documents rather than the EAP itself.

Q44. Is the proposed approach to SF₆ - focusing on reducing both absolute emissions and the total SF₆ bank - appropriate and proportionate?

Ofgem is right to focus on both leakage and the size of the SF6 bank.

For leakage we agree that what matters is the absolute level. However for the purpose of comparing performance across DNOs the % leakage rate is important (including the more granular information by voltage that Ofgem has required for ED2).

Based on the data presented we would encourage Ofgem to review how leakage is measured. Leakage is generally measured in terms of top up (of units still in place at the year-end). Sealed units such as those used at lower voltages are not intended to be topped up but may still have a low level of leakage. Properly tracking the SF6 from installation to decommissioning is key to getting a proper handle on leakage. We understand that an ENA working group is now looking at getting consistent measures across the DNOs which is important. Sensor technology which is continuing to improve may help in better monitoring.

On the bank the challenge is firstly what alternative equipment will be used for the significant levels of new investment required in ED3, to avoid increasing SF6 use. On the existing bank there is no immediate need to remove SF6 equipment provided it is reliable and leakage is near zero. However given the volume of assets involved the key requirement is for the DNOs to have a clear strategy for their long-term removal and reliable records (to avoid a repeat of what we have seen with PCBs).

Q45. Do you think we should introduce a specific mechanism to hold DNOs to account for delivering on their Fluid Filled Cables reduction targets? If so, what should this take the form of?

We recall from our review of the ED2 EAPs that actions around fluid filled cables were probably the most costly aspect of the EAPs. As such we would support a mechanism for holding the DNOs to account for delivery. A PCD would seem the obvious option.

Q46. How can tools like the AER and PCDs be used to strengthen delivery and accountability of the EAPs in ED3?

The AER is helpful but as we have flagged stakeholders are not resourced to look across DNOs or to dig beneath the headline numbers. We are therefore delighted that Ofgem has committed to an annual review of the AERs. Summary reports and league tables will help give more

attention to environmental performance internally in the companies and enable stakeholders to mount more effective challenges.

DSO - Losses

Q75. Do you agree with the proposed working-level definition of loss optimisation as a cost-based, system-wide approach to managing distribution losses?

Q76. Do you support Ofgem's focus on loss optimisation over loss reduction in ED3? Why?

As set out in our cover letter, we are concerned that the framing of “loss optimisation” simply provides an excuse for inaction given the complexity of the tradeoffs required. Losses are a bad thing. One never wants higher losses – but we recognise there are other factors that have to be taken into account. Ie the aim should be loss reduction subject to other considerations.

In designing any incentive (whether on reliability, customer satisfaction, connections etc) Ofgem is acknowledging that there are cost considerations in how far outcomes can and should be improved. The aim of the incentive is to get the company to internalise those tradeoffs.

It is vital that Ofgem retains SLC49 which requires that losses should be reduced as far as reasonably practicable. In our view this should be the starting point for framing the DSO objective ie a data driven, whole system interpretation of SLC49.

As such we disagree with the framing of this as a focus on loss optimisation over loss reduction.

Q77. How should we embed loss optimisation into ED3 and what are some of the challenges with this?

For losses to be effectively managed there are two things that require immediate focus:

First DNOs need **a much better understanding of where and when losses are taking place.**

In particular what drives system capacity costs is **losses at peak times.** With the majority of losses varying with the square of current we can expect that peak losses will be markedly higher than the 5-8% average over the year.

But while proportionally we can expect peak losses to be higher, it is hard to find any robust GB data on the level of peak losses. However, a report from the US⁵ suggests that marginal peak losses could be perhaps three times the % for average annual losses. The detailed line loss factors at distribution level show ratios 50% higher in the winter peak on some networks – while other networks show little difference between time periods. There is certainly no understanding at a strategic level of what losses are at peak times – or of the need to look at marginal rates when evaluating incremental changes.

One of the challenges with losses (and the reason Ofgem moved away from having a financial incentive a decade ago) has always been a problem with measurement. Losses are currently measured as the difference between two large numbers each with a level of uncertainty attached. However, with improved data, increased smart meter penetration and a big step up in

⁵ https://www.4cleanair.org/wp-content/uploads/Documents/Chapter_10.pdf

network monitoring – together with use of AI and machine learning techniques – we really ought to be able to be smarter about how we measure, understand and manage losses.

The second is **how to value losses** to properly take account of the increased system costs (generation and transmission capacity) they impose. We assume that this is a parameter that Ofgem would set as part of the CBA framework. We are aware that in ED2 Ofgem's failure to update the cost of carbon in line with government guidance meant that networks were unable to justify certain loss reducing investments that would have been strongly justified with the new (significantly higher, net zero consistent) cost of carbon. It is crucial that Ofgem's CBA framework for assessing Business Plan proposals in ED3 properly takes account of the wider system costs involved.

Our report looking at the losses strategies for ED2 highlighted the range of initiatives that DNOs had identified as opportunities to reduce losses – but with typically no firm commitments. For ED3 these sorts of opportunities should be properly reviewed and a clear way forward set out.

Many of these opportunities would be subject to relatively straightforward CBAs and do not involve wider tradeoffs beyond the incremental cost of low loss equipment. Some others, like the interplay between voltage and losses, should anyway be considered as part of the newly required voltage strategies. It is unclear what the reliability tradeoff is that Ofgem are concerned about.

Q78. What mechanisms should be used to monitor and assess DNOs' impact on network losses, and how can loss optimisation be embedded into planning, operational, and investment decisions under ED3?

We would expect progress to be tracked by the DSO oversight panels that all companies are required to have and for this to be part of the assessment carried out for the DSO incentive.

Q79. Do you believe there is a case for introducing financial or discretionary incentives to encourage active loss optimisation by DSOs? If so, what form should these incentives take (eg direct financial, reputational, discretionary rewards), and what risks or complexities should be considered?

As set out in our cover letter, it is essential that there is some form of financial incentive in this area to focus attention. Reputational incentives have proven inadequate.

Recognising the measurement problems that exist – plus the need for a more nuanced measure focussed on peak losses / capacity – it feels unrealistic to have a full financial (quantitative) incentive in place for ED3. Ofgem should therefore be looking at some form of discretionary reward which reflects performance on building understanding and improved measurement of losses, innovative solutions and knowledge sharing – alongside progress on actions in the losses strategy.

This incentive could either be standalone or part of the wider DSO incentive.

There should also be a clear commitment to reintroduce a full incentive in ED4 (with a programme of work around improved measurement initiated at the start of ED3 rather than – as in ED2 and now in ED3 having to reject an incentive because there isn't time to address the measurement issues).

As an alternative, we note that at a European level it is common for DNOs to “own” the losses (ie to have to pay for the cost of lost energy which is then subject to the same price control

incentives in terms of benchmarking and efficiency as any other cost category). A review of the recent [CEER report](#) on losses suggests that the UK is lagging behind other countries on performance on losses – perhaps linked to this difference in incentives. The relative lack of data on GB losses in this report also reinforces our concerns about the lack of focus in this area.

Q80. Are there additional strategic or policy measures you believe should be considered in ED3 to manage losses?

Innovation should be an important route to reducing losses and was an explicit criteria in the ED1 incentive. We are only aware of one innovation project on losses since 2019. It is important that losses are in scope for innovation funding in ED3.

NESO in its system planning role should be actively considering the impact of losses. In their losses strategies the DNOs all seem to be projecting significant increases in the volume of losses through ED3 and beyond. This does not appear to be reflected in the NESO FES projections, for example. Requiring NESO to consider the system impact of losses would seem an essential step in the DNOs taking a whole system view.