

9 February 2022

Dear RIIO team

Ofgem Call for Evidence on ED2 Business Plans

Thank-you for the opportunity to contribute to the Call for Evidence on the ED2 Business Plans.

Sustainability First is a think-tank and charity with a focus on social, environmental and economic issues in essential services and in particular energy and water. We have significant experience of the RIIO price control process through involvement in the Ofgem Challenge Group, Consumer Engagement Groups and Ofgem working groups. We have also carried out significant work on how regulatory models need to adapt to meet the challenges ahead including our Regulation for the Future [report](#) as part of our major Fair For the Future project.

There is a huge amount of material contained in the Business Plans and supporting Annexes and Appendices and we have therefore had to focus our attention on those areas where we consider we have most to add – essentially around the energy transition and the environmental action plans.

We have structured our response by starting with some high-level observations on the plans and how far they have progressed since ED1; we then pull out some of our key messages in terms of how we would like Ofgem to approach the draft determinations. We have then worked through providing comments on individual chapters / sections of the plans, with annexes providing more detailed assessments of the plans in two of the areas that we are particularly concerned about – losses and SF6.

We would of course welcome the opportunity to talk through any of these issues with the Ofgem teams if they would find that helpful.

Overview of the Plans - Progress since ED1

We would like to start by reflecting on the extent to which these ED2 Business Plans represent a significant step change on ED1, building on the clear direction that Ofgem has provided:

- The companies have all visibly embraced the net zero challenge both in terms of their role driving and supporting the energy transition and in terms of their own carbon impact;
- The companies have also all made a step up in terms of their approach to enhanced engagement with elements of co-creation, in particular working with stakeholders such as local authorities who also have a key role in the transition. There are some good examples of customer engagement and thoughtful approaches to triangulation of different forms of evidence. We hope that this is now business as usual in the companies and will be continued into ED2 (justifying Ofgem's decision to drop the stakeholder engagement incentive);
- There are also good examples of a much stronger focus on local communities, interest in supporting jobs and the regional economy and a wider social contract. This reflects the themes that Sustainability First has been promoting through its Fair for the Future work which a number of the companies were involved in and wider thinking on a just transition;
- On vulnerability, our review was limited but the plans seem to build on the good foundations from ED1 but with questions around whether the plans go far enough in the

light of the fresh challenges brought about by the pandemic and the energy and cost of living crisis.

While generally supportive of the substance behind the Business Plans, we faced a serious challenge in dealing with the materials produced. Understanding relative performance is one element in judging the ambition of the plans. We have sought to do this as best we can but our response has been hampered in places by the sheer difficulty in engaging with the material and hence in many areas we have not been able to provide a view on relative ambition levels in the way that we had hoped to.

As an expert (albeit small) stakeholder in this area, we consider that **the lack of readily comparable metrics** should give Ofgem cause for concern and raises questions around procedural justice and what meaningful accountability looks like in this context.

In particular, we would highlight:

- The sheer volume of material. While Ofgem had limited the page length for the Business Plans to 200 pages, in most cases it was also necessary repeatedly to cross-refer to detailed Annexes and the Appendices to the Annexes simply to be clear exactly what was being proposed. By our estimate the plans run to tens of thousands of pages combined and as a result it is possible that we may have missed some relevant information;
- The volume problem was exacerbated by poor readability in the design of some plans (especially when read electronically) plus weak signposting, broken links and some “locked” documents (SPEN) making it hard to pull extracts together for comparison;
- Critical cost-information is absent and often opaquely described for the main investment programmes - and some companies (eg SSEN) have redacted even the most basic cost information.
- Cost information is not presented in the plans on a consistent basis (eg what constitutes ED1 average). More generally across all metrics the ability to base-line and compare the companies is extremely difficult. While Ofgem may have set out tight definitions for the data to be included in the business plan templates (spreadsheets) these are not published and the summary figures presented in the plans are not necessarily taken from these templates. The strategic summary template that Ofgem developed as a one pager of key statistics could have been a helpful source but none of the companies apart from SSEN have published it.
- For key ED2 areas, there is a dearth of simple clear comparable tables – with all relevant information in a single place (measure, baseline, target, cost) – eg on EAPs, DSO, load growth
- NPG, SPEN and ENWL provide a clear summary list of their commitments – but not all companies do. This is important not just in assessing the plans but also in holding them to account for delivery in ED2 (where Ofgem is increasingly reliant on reputational measures).

In summary, while we welcome that the business plan process has become far more open and inclusive, it has arguably also veered towards “death by information”. Our own experience on this is by no means unique.

Ofgem itself also faces a huge challenge in how to benchmark and compare across the plans but it is crucial that for Draft Determinations Ofgem presents information on a comparable basis across the companies in ways with which stakeholders can engage. We would also encourage Ofgem to consider any lessons learned for RII03.

Key messages

Aside from the vital need for comparable metrics as set out above, the key messages that we would highlight as Ofgem considers the plans and its Draft Determinations are as follows:

Costs and overall bill impact: Affordability is a critical customer issue, in particular at this current time. It is therefore vital that Ofgem should challenge unwarranted or poorly evidenced costs and set stretching efficiency targets. However, this focus on short term bill impacts should not lead Ofgem to cut back on necessary investment to improve resilience (an area where [CCRA3](#) has identified that more action is needed in the energy sector and where recent experience with Storm Arwen has highlighted current issues) and to meet net zero. On the Environmental Action Plans there was extensive stakeholder testing – and considerable support from both consumers and wider stakeholders for DNO ambition on de-carbonisation and net-zero. Also, once you set aside oil and PCB compliance costs, the overall EAP spend is not that material compared to other parts of the plan.

Losses is a neglected but vital area: Losses cost customers £15-20 pa which is significant when viewed against the typical DNO share of the customer bill of c £100pa. They also account for around 1.5% of the UK's carbon emissions. We therefore have a significant concern about the very limited attention given to losses across the Business Plans and the way the DNOs' "net zero" targets often exclude losses. Given Ofgem's decision to remove any financial incentives from this area this is not a surprise. The plans read complacently: companies seem to have succeeded in persuading Ofgem that losses are outside their control and that the carbon impact will be addressed anyway as the grid decarbonises. However it is clear from the Losses Strategies accompanying the plans that there are a wide range of actions that the DNOs could in practice take to help mitigate the impact of higher losses as grid utilisation increases. Our concern is that they currently have no incentive to pursue these initiatives in ED2 (beyond a "reputational" incentive which is wholly ineffective in a complex area like this). In our view this is a prime example of a whole-system issue where action (or inaction) by the DNO imposes wider costs on the system. Ofgem urgently needs to acknowledge and signal the importance of this issue and provide appropriate financial incentives or regulatory mechanisms to redress this balance. We have set out a number of proposals in our response (and more fully in a separate annex).

SF6 Strategies are a material but neglected area for DNO asset-management given science-based targets and net-zero. SF6 is a long-lived and highly potent greenhouse gas found in around 200,000 bits of equipment across the networks. DNO SF6 strategies - for dealing with SF6 leakage and ultimately replacing relevant equipment - are of highly variable quality. We consider company approaches to their long-run management of this potent green-house gas in a separate annex. As a priority, DNOs must put in place the common reporting methodology proposed by Ofgem. Otherwise, it remains impossible to fully understand the bigger picture - not just on leakage but also to gain a clearer view of the 200,000 equipment items that contain SF6 held right across DNO networks. On the basis of our own detailed look at DNO SF6 strategies, Ofgem reliance on reputational regulation alone seems wholly inadequate to the task of gaining assurance that the companies are managing-down their long-run future SF6 risk in ways that align with their commitments on science-based targets and net-zero. Ofgem must support a change of gear in ED2 on DNO SF6 Strategies through financial incentivisation. The companies must demonstrate long-run cost-efficient approaches for tackling their SF6 holdings – right through from leakage, to future SF6 asset-management (including potential cost-impacts) and active engagement with the supply-chain.

The extent of anticipatory investment that Ofgem will allow is a key strategic issue but the information provided in the plans does not allow the trade-offs to be understood or commented on by stakeholders. It is crucial that Ofgem sets out clearly the basis for the approach that it adopts at

Draft Determinations. While it is hard to unpack the figures, our sense is that UKPN has taken a different approach to other DNOs with a focus on “maximum utilisation” with strategic investment downplayed in its baseline plans for ED2. In contrast NPG have argued that there is a need to invest strategically in ED2 to avoid an unmanageable bow-wave in subsequent periods. While we understand Ofgem’s focus will be on minimising short term bill impacts, there has also been strong support at various times from the CCC, NIC and BEIS for more strategic approaches to investment to hit net zero cost-efficiently. Many regional stakeholders have clearly endorsed the approach that DNOs are taking on strategic investment. All DNOs are committed to a “flexibility first” approach to investment, so the key question is how that balance is struck in terms of the point at which one invests. We hope that Ofgem will make effective use of its own Net Zero Committee to help inform its decision on this balance in ED2, taking account also of the recent open letter from Kwasi Kwarteng highlighting the importance of strategic investment in supporting economic growth and resilience.

Energy efficiency needs further thought: One significant gap in the Business Plans is the failure to properly consider energy efficiency – and more specifically thermal insulation - alongside flexibility as an alternative to reinforcement, despite this being a licence requirement. Sustainability First had previously advocated the need for a beacon energy efficiency pilot in ED2 to build learning ahead of ED3 when heat electrification will take off at scale. This also has potential to contribute to a just transition. We would suggest that Ofgem looks across the elements of ideas in the Business Plans (including SSEN’s Energy Efficiency CVP which has some merits but which we cannot support in its current form), to clarify DNOs’ role in this space and drive more progress in ED2.

Collaboration must be encouraged: While we recognise that there is value in the competitive process that RIIO engenders in encouraging companies to be ambitious and creative, ultimately in many of the key areas that require fresh thinking across the sector we also see a strong need for greater emphasis on DNO collaboration as we move into ED2. This applies across the environmental action plans, DSO transition, workforce planning, vulnerability and beyond. As well as being important in terms of joint learning, improved benchmarking and efficient innovation there is an interest in this from stakeholders who interface with different DNOs and do not want to have to deal with different processes. While to date the ENA has provided a central resource in some of these areas none of the plans propose this as a key route for tackling the major challenges that are faced. We would like to see the importance of collaboration reinforced and would suggest Ofgem sets aside an element of funding for collaborative initiatives in key areas.

In addition, we would flag the need for:

- **Support for vulnerable customers** to be bolstered given the energy and cost of living crisis. In particular we suggest Ofgem reconsiders whether a use-it-or-lose-it allowance like that in GD2 is now needed for ED as well, to strengthen the individual company proposals.
- Consistent presentation of net zero targets, focused on the **SBTi accreditation** that Ofgem set out as a requirement in its Business Plan Guidance. Ofgem should align its approach to offsetting with the latest [SBTi Standard for Net Zero Targets](#);
- **Biodiversity targets** to take account of the new legislative requirements in England under the Environment Bill (with equivalent legislation expected in Scotland) which require biodiversity net gain for all major infrastructure projects;
- The **cost of carbon** in Ofgem’s CBA model to be updated in line with the latest figures from BEIS. Trebling of the cost of carbon is likely to mean that a range of projects would now be justified that were not previously. Ofgem should therefore consider how to reflect this in the baseline allowances that it provides. We suggest a new UIOLI mechanism to deal with this in relation to losses (and potentially more broadly);

- A stronger focus on **climate adaptation** as highlighted by the government in its recent Climate Adaptation report (which noted the particular challenges on energy). We note in the context of Storm Arwen that none of the plans included reference to increased winds as a climate risk that they needed to address (and which CCRA3 identifies as an amber risk for the sector);
- A clear, over-arching and consistent vision around the **role of the DSO**. This needs to be developed with a wider set of stakeholders not simply bilaterally between Ofgem and the DNOs through the ED2 working-group process;
- A stronger focus on **circular economy** principles: While all DNOs reference these – as required by the Business Plan Guidance – there is very little of substance to convince us that this is being taken seriously.
- More thought given to **the balance between financial and reputational incentives** including how to make reputational incentives effective. At present the EAP scorecard financial incentive risks dealing with only second order issues.

We hope that Ofgem will find our assessment of the plans of value and we would be happy to discuss any aspects that you would find helpful.

Yours faithfully,

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cc Sharon Darcy, Director Sustainability First

Sustainability First Comments on the ED2 Business Plans by Chapter

While all the companies have followed slightly different structures for their plans there is a level of consistency and we have organised our comments in line with the structure in Ofgem's Business Plan Guidance. As noted above, given the amount of material, we have focused our comments on the chapters that relate to the theme of accelerated progress towards a net zero world (covering both the companies' support for the transition and their environmental action plans). We also comment briefly on a few other areas.

The structure of our comments is as follows:

1. Delivering value for money services for customers
 - vulnerability
 - a safe and resilient network
 - an environmentally sustainable network (the Environmental Action Plans)
2. A smart, flexible energy system
 - digitalisation and DSO
 - DSO and flexibility
 - whole systems
3. Keeping customer bills low
 - forecasts and scenarios
 - uncertainty mechanisms
 - cost benefit analysis
 - overall bill impact
4. Financial information – asset lives
5. CVPs

Annexes on key elements of the Environmental Action Plans:

- Losses
- SF6

1 Delivering value for money services for customers

1.1 Vulnerability

Summary: While the plans all include a strong focus on vulnerability it is not clear that this is sufficient in the context of the current energy and cost of living crisis. Ofgem should reconsider a standard UIOLI allowance (as used in GD2) to help with this. A wider debate is needed on the boundary of the role of DNOs in ensuring no one left behind in the energy transition.

As a charity with no core funding, we do not have the resources to explore this area of the plans in as much detail as we would wish given the volume of material, often with the relevant detail buried in Annexes.

Our sense is that the companies have built on a solid foundation of ED1 in terms of their approach to the PSR, provision of support during outages and advice through partners to those in fuel poverty.

However, we have a real concern that the level of support proposed will fall well short of what is needed given first the pandemic followed by the energy and cost of living crisis. While Ofgem may hope that the impacts are to some degree transitory, we note the geo-political risks and our view is that at best these crises have a long tail and will certainly still be an issue in the early part of ED2, if not longer.

We are also concerned about a potential postcode lottery in terms of support as different DNOs are envisaging different levels of spend. While at one level their plans should have been shaped through engagement with local stakeholders taking account of local needs, it is not clear that the engagement has been sufficient to clearly identify an appropriate level of support, recognizing that this is funded by customers.

In GD2 Ofgem set a standard UIOLI allowance across GDNs– which was increased post draft determinations to take account of the pandemic (with an uplift for Cadent who had some specific proposals). While Ofgem in its SSMD chose not to pursue a UIOLI approach for ED2 it is an option that might merit reconsideration given the level of hardship we can expect to see.

There is also an important question around the role that DNOs can play in ensuring “no one left behind” in the energy transition. While some of the DNOs came up with interesting proposals for how they could support vulnerable customers acquiring LCTs (SSEN) , ways of providing community level support (SPEN), and supporting those without access to off street charging (UKPN) some of these do raise questions around the boundaries of the DNO role (and the knock-on implications for a level playing field on flexibility). We would encourage Ofgem to open up a wider debate – including consumer and fuel poverty experts - on what is appropriate for DNOs to do in this space. This wider activity could then be included within the scope of a new UIOLI allowance as suggested above.

We would also like to see more emphasis placed on cross sector working on vulnerability and look to Ofgem to satisfy itself that the companies are looking ahead, to take account of eg long term covid impacts and growth in the numbers of elderly / long-term sick, in terms of the scale of support they may need to provide.

1.2 A safe and resilient network – climate resilience

Summary: A much stronger focus is needed in this area based on CCC advice and the lessons from storm Arwen. There is also a need for a cross sector view.

As Ofgem is well aware, Storm Arwen hit just as companies were submitting their final business plans and as most of the CEG reports highlight there is a clear need to revisit the requirements in the plans around resilience in the light of the lessons learned exercise that Ofgem is undertaking. This may point to a need for far more focus, for example, on vegetation management or the asset health of wooden poles.

More broadly, recent storms underscore the need for a stronger focus on **climate adaptation** as highlighted by the government in its recent [Response to the CCC's Climate Adaptation Progress Report](#) (which noted the particular challenges on energy). We note in the context of Storm Arwen that none of the plans included reference to increased winds as an explicit climate risk to address (although preparedness for high-winds is of course already well-integrated into operational planning). The CCC Adaptation Progress Report acknowledges that the evidence linking strong winds with climate change is less clearcut but advocates that companies monitor the emerging research and carry out early thinking on potential mitigating actions.

In Ofgem's Business Plan Guidance¹ there is a requirement for each DNO group to set out their climate resilience strategy, including plans for long-term adaptation with adaptation pathways, considering risks as set out by the NIC, government and CCC. Ofgem also expect the energy sector to coordinate with other sectors, including water, transport and local authorities, and for DNOs to consider the impacts of climate change in relation to 'cascading and escalating failures of infrastructure across independent sectors'.

Importantly however, Ofgem refrained from prescribing the structure or content of the climate resilience strategies and also stood back from explicitly requiring DNO coordination through a climate resilience working group. Possibly as a result it is not clear that the level of strategic focus and attention being given to this area is consistent with the emphasis that the CCC and the government have placed on it, recognising the very significant interdependencies across sectors that are reliant on the grid. The National Infrastructure Assessment (NIA2) placed a strong emphasis on climate resilience and the Kwasi Kwarteng open letter to the regulators² also placed a strong emphasis on resilience more broadly and the need for more cross-sector engagement.

The most comprehensive climate resilience strategies would seem to be SSEN's which looks at the risks by geographical area and includes some thinking around adaptative pathways and UKPN's which looks in more depth than the others at the impact of strong wind.

¹ September 2021. Paras 3.29 – 3.32

https://www.ofgem.gov.uk/sites/default/files/2021-09/ED2%20Business%20Plan%20Guidance%20-%20September%202021_1.pdf

² 31 January 2022.

<https://www.gov.uk/government/speeches/strategic-priorities-and-cross-sectoral-opportunities-for-the-utilities-sectors-open-letter-to-regulators>

While the climate risks do vary across regions it seems clear that Ofgem should revisit their earlier guidance and now place a clear coordinating action on the ENA as part of a collaborative effort, recognising that they have led much of the work in this area to date.

We would also ask that Ofgem reinforces the need for more cross sector working in this area. None of the plans suggest that there has been any meaningful engagement with other sectors. This is important in both understanding their needs around resilience but also how initiatives working with the water sector might provide an alternative approach to flood risk management, for example. This is just one example of the need for whole systems thinking spanning across sectors as set out in a recent Sustainability First [Viewpoint](#) on “Do water and energy mix?”. The inter-dependencies with the communications sector also urgently need proper consideration.

1.3 An environmentally sustainable network (Environmental Action Plans)

Overview

We welcome the much stronger focus that has been given to this area through the requirement for an EAP and annual reporting through the AER.

On the scope and ambition of the EAPs, it seems clear across all the plans that potential costs and trade-offs were comprehensively tested with stakeholders and with consumers and that there was strong encouragement for companies to show real ambition in this area. This gives considerable assurance that there is widespread support for expenditure relating to net-zero delivery, business carbon footprint reduction, reduction of SF6 and losses, improvements in bio-diversity and pollution mitigation.

This is the area of the Business Plans that we have given most attention to. We have structured our comments below in line with Ofgem's EAP Baseline Expectations to cover Business Carbon Footprint; SF6; Losses; Embodied carbon / supply chain management; Resource use and waste; biodiversity; fluid filled cables; noise pollution (no comments) and PCBs. We also comment on the proposed EAP scorecard metrics that some DNOs include in their plans.

We note that some of the plans look more widely and also consider water efficiency (UKPN, ENWL), air quality (UKPN) and the use of VOCs in cleaning products (ENWL). We commend the companies for looking beyond the areas highlighted by Ofgem, drawing on expert stakeholder input. With rising expectations across all areas of the environmental agenda it is important that companies are looking to understand new and emerging risk areas, to stress test their plans against these and to operate in line with emerging best practice, not simply to follow Ofgem guidance.

On the downside – and in line with our comments on other areas of the plans - it is extremely hard to understand the costs associated with EAPs and / or compare these across DNOs. A single standardised EAP table is urgently needed to give a clear account of projected costs of ED2 EAP measures, ambition of ED2 targets baselined clearly against ED1 - and associated costs and proposed funding mechanism. ENWL do present this clearly³ but for example SSEN have redacted all relevant cost information in their EAP making it impossible to judge either the scale or value for money of what is proposed. Others fall somewhere in between. For Draft Determinations, Ofgem must rectify this lack of relevant comparable information.

From the cost information that is presented it would appear that the cost of actions to address pollution measures for oil-filled cables and for statutory elimination of PCB are orders of magnitude greater than any of the costs associated with BCF targets. For example, UKPN's total EAP spend is £246m – of which fluid filled cables is £155m (ex ante) and PCB elimination is £45m (ex ante with a PCD). In contrast they are proposing to spend a mere £6m on reducing losses and £18m on decarbonising business transport. Given the real and immediate customer benefits from reducing losses and the relative scale within their carbon footprint this seems out of balance. Having a clear summary of the costs across all DNOs would be helpful in being clear where the balance of EAP expenditure lies to help stakeholders in judging the relative balance of priorities.

³ ENWL EAP. Annex 13. Appendix F 'Overview of EAP deliverables/initiatives for RII0-ED2

Business Carbon Footprint

Summary: We strongly support the use of SBTi accreditation to provide a comparable measure and external expert validation. SSEN, NPG and WPD have targets accredited against a 1.5 degree target. UKPN has a “well below 2 degree” target and now needs to catch-up. ENWL and SPEN are in the process of getting targets accredited. In addition to these formal targets many of the companies also include in their plan headline “net zero” targets for ED2. We are concerned that these exclude losses (which account for around 90% of their BCF) and rely heavily on (an often unspecified level of) offsetting.

We discuss in turn the SBTi accredited targets, other “net zero” targets, offsetting, scope 3 emissions, actions to reduce operational emissions, SF6 and losses.

SBTi accredited targets

We were pleased that Ofgem set out in the Business Plan Guidance that companies were expected to get their business carbon footprint targets accredited by SBTi. This use of external accreditation was one of the recommendations of our Regulation for the Future report and ensures a consistent approach, validated by experts in the specific area for issues that are outside Ofgem’s core expertise.

It is also clear to us from the plans that those companies that have secured accreditation are more sophisticated in their approach to BCF in their plans – demonstrating the benefits of going through this rigorous process. We are pleased that all companies do now appear to be making progress towards accreditation. While the SBTi targets are not always clear in the plans we have summarised below our understanding of the current position drawing on the summaries on the SBTi website – as a definitive source. This table shows the DNO’s SBTi scope 1 and 2 targets (with other “net zero” targets and scope 3 emissions discussed below). In line with the SBTi framework these targets must all include losses as a scope 2 emission, which we welcome.

Company	Status according to SBTi website 7/2/22	Comments in Business Plan
SSEN	1.5 degree target: to reduce absolute scope 1 and 2 GHG emissions 55% by FY2033 from a FY2020 base year.	
UKPN	Well Below 2 degree target: to reduce absolute Scope 1 and 2 GHG emissions 25% by FY2029 from a FY2019 base year.	Commit to updating to a 1.5 degree / net zero target by the end of ED2. Plan talks about exceeding this 2 degree target.
SPEN	-	Plan talks about reducing scope 1,2 and 3 by 67% by 2035. Target to be accredited early 2022
NPG	(2022) 1.5 degree target: to reduce absolute scope 1 and 2 GHG emissions 63% by FY2034 from a FY2019 base year.	Business plan refers (p86 EP1.2) to this being a target excluding losses which would be inconsistent with SBTi methodology
WPD	1.5 degree target: to reduce absolute scope 1 and 2 GHG emissions 63% by FY2035 from a FY2020 base year	
ENWL	Letter of commitment	Expect accreditation early 2022 (for a 2035 target)

Although presented slightly differently the three companies with a 1.5 degree target are all committing to the same underlying level of ambition reflecting a reduction of 4.2% pa (although as noted below this creates a particular challenge for SSEN given their high levels of diesel generation). UKPN with a “better than 2 degree” target is only committing to 2.5% pa reduction.

Going forwards the SBTi has confirmed that all targets must align with 1.5 degrees. They have also recently introduced a new Net Zero Standard, including explicit guidance on the treatment of offsetting (discussed below).

While we are strongly supportive of SBTi accredited targets we note that one downside from a standpoint of DNO comparison is that targets tend to be set against potentially different years depending on when the process began – but seemingly most often a 19/20 baseline. While a common baseline is very helpful, we are also concerned that a historic perspective may also be lost against all of ED1 - which remains a very important context in judging ambition levels for particular BCF elements in ED2. We encourage Ofgem to ensure that historic performance is included in future reporting requirements.

One of the benefits of an over-arching emissions target is that encourages the companies to look at the most cost-effective ways of reducing emissions. In this context we found the SPEN concept of applying a carbon marginal abatement cost curve of great interest (A4C.3 – Ch6 p 83 – Fig 27).

Other “net zero” targets

While all the companies are committed to securing SBTi accredited targets (for their scope 1 and 2 emissions including losses), we have a concern that some companies continue to focus on a headline message around meeting net zero in ED2, using a measure which excludes losses which comprise over 90% of scope 1 and 2 emissions. Also, relatively short-term ED2 targets are likely to then rely on an often undisclosed level of offsetting. Longer term “net zero” targets are more likely to be aligned with SBTi but their status is unclear. These various targets are:

	ED2 near term targets (excluding losses and including offsetting)	Long term goals (unclear but assumed to include losses but with an element of offsetting)
SSEN		Net zero by latest 2045
UKPN	Net zero on operations by end 2028 (Also - exceeding a 1.5 degree target for scope 1 and 2 excluding losses without offsetting)	
SPEN	Carbon neutral in 2023 for scope 1 and 2 (excluding losses)	Achieving net zero by 2035
NPG		“Carbon neutral” by 2040 (without offsetting but reliant on grid decarbonisation)
WPD	Net zero in their own operations by 2028	Net zero (inc losses) by 2043
ENWL		Net zero by 2038 in their own operations (with offsetting)

While these ED2 targets may be driven by a welcome desire to align with regional net zero ambitions, we would be concerned if this risked detracting from a proper focus on the most effective means of reducing overall carbon emissions over time – or of being seen as greenwashing. UKPN does provide an explanation of the different metrics that it is using and the reason for them whereas others do not to the same extent. There is rarely any explanation of how these ambitious headline “net zero” relate to their SBTi accredited targets.

As well as presenting a confusing picture with different definitions, in our view this focus on headline “net zero” targets excluding losses plays down the importance of losses which, as we set out below, is a crucial area that urgently needs more focus. In some cases it would appear that companies are more willing to include scope 3 emissions in their headline targets than they are to include losses - whereas in our view the company has more control over losses than it does over its supply chain emissions. While we support the companies working to reduce scope 3 emissions as discussed below, it would be a matter for regret if the companies used that to avoid action themselves on losses and SF6.

Offsetting

Another issue with these net zero targets is their reliance on offsetting where the companies all seem to take different approaches.

On the question of offsetting and more generally on net zero targets we would draw Ofgem’s attention to the latest SBTi Standard for Net Zero Targets for corporate entities⁴ which is clear that net zero targets need to cover all of a companies’ emissions and that actions on offsetting should be separately reported. Their headline recommendations are:

- Focus on rapid, deep emissions cuts of scope 1, 2 and 3 emissions delivering 90-95% reductions;
- Set near and long term targets: making rapid emissions cuts now, halving emissions by 2030. By 2050, organizations must produce close to zero emissions and will neutralise any residual emissions that are not possible to eliminate;
- **No net-zero claims until long-term targets are met:** A company is only considered to have reached net-zero when it has achieved its long-term science-based target;
- Go beyond the value chain: The SBTi recommends Companies to go further by making investments outside their science-based targets to help mitigate climate change elsewhere. However, these investments should be **in addition to** deep emission cuts, not instead of them.

At present the levels of offsetting assumed in delivering the DNOs’ “net zero” targets are not made clear, but in some cases would appear to be significant. For example, in the case of UKPN, emissions for offsetting to meet their “net zero” target would appear to be as high as 38% of their overall 2028 emissions. Also, different approaches are taken to ensuring that offsetting measures meet appropriate standards. For example, several DNOs highlight that they will follow the Oxford Principles on offsetting. SPEN also talks about removing or offsetting emissions in line with PAS2060. By contrast, NPG indicate that they do not plan to offset their carbon emissions at this stage in their path to net-zero operations (BP p 81) as their stakeholders did not support it.

⁴ <https://sciencebasedtargets.org/net-zero>

SSEN in their proposals for reforestation and peat restitution appear to have taken account of the SBTi guidance on net zero targets. Their proposals recognise that reforestation requires time before it starts to capture carbon and they have set the level of reforestation they need to undertake to align with the residual emissions that they will not be able to deal with in the long term (ie in meeting their 2045 net zero goal) while recognising that reducing emissions has to be the priority.

WPD talk in their EAP about stakeholders having shown support for offsetting to meet net zero and note their intention is to “develop a portfolio of UK based offsetting [in their licence area] including habitat creation eg tree planting, peatland and seagrass restoration and eg solar panels for schools”. While this holistic approach is positive it is not clear that they have thought through issues such as the time required for nature based solutions to deliver carbon reductions. There can also be tensions between “high quality offsets” (which require a high level of validation) and supporting community based schemes which a number of the companies say they want to explore. This suggests that the planned approaches to offsetting are still relatively immature and there would be merit in a more consistent approach across DNOs underpinned by the SBTi net zero guidance.

Scope 3 - Embodied carbon / supply chain management

In thinking about their carbon emissions, it is right that the DNOs think also about the impacts from their supply chains. In the SBTi framework these “scope 3 emissions” do not have to be included in the company targets but voluntary targets can be set. According to the SBTi website, both SSEN and UKPN have set scope 3 targets but these are very different in form – SSEN’s relating to the % of suppliers with SBTi targets and UKPN’s being a target reduction in their scope 3 emissions (reducing in line with their scope 1 and 2 by 2.5%pa). NPG has similarly set an internal target for its scope 3 emissions to reduce in line with its scope 1 and 2 (ie by 4.2% pa). ENWL and SPEN both have internal targets around suppliers signing up to SBTi targets.

While SBTi is seen as the gold standard in relation to emissions target setting it has come in for some criticism on its approach to scope 3 emissions (which has been [criticised](#) for being too soft). They have committed to issue updated guidance on scope 3 emissions by the end of the year. Clearly this is an evolving area and it is important that Ofgem’s own approach is flexible to take account of changes to what is seen as best practice.

Scope 3 emissions can be difficult to track and most companies will simply be using sector-based conversion factors (tCo2/£ spent) to set baseline figures. We would therefore encourage caution in respect of any headline targets around reductions in scope 3 emissions at this stage – looking instead behind the figures at what is actually being done.

Importantly this is another area where we would hope that Ofgem will press for clear baselining and more standardised reporting over the course of ED2 given the very different metrics that are being proposed.

We have not reviewed the detail of DNO proposals on scope 3 and embodied carbon but each commits to work closely with their major suppliers, indicating a variety of cooperation schemes for liaison, information, encouragement, a target-setting process and monitoring of supply-chain performance to reduce scope 3 emission reduction (eg NPG Responsible Procurement Charter, SSEN supplier school). Targets for the proportion of the supply chain that are signed up to SBTi targets will also help provide a way of managing scope 3 emissions and we would support them provided this is not simply a way of passing the buck.

The SBTi guidance makes clear that embodied carbon is strictly an element of scope 3 emissions (a point also made by SPEN and UKPN in their Business Plans) but it is one that is often separated out given the difficulties in measurement. SPEN's thinking seems relatively well developed in this area. Like several others they commit to introduce a measurement tool for embodied carbon and other capital carbon emissions, to establish a baseline and set a target to reduce carbon on new projects during RIIO-ED2. However they also describe at length their **Capital Carbon Approach** (looking at the emissions associated with the creation, refurbishment and end of life treatment of an asset) and their use of external standards – including PAS 2080 Carbon Management Infrastructure Management. They have also incorporated an assessment of embodied carbon into their CBAs for infrastructure investment using the Carbon Trust framework.

The fact that none of the companies seem to have yet got a baseline for their embodied carbon is another reason to be cautious about headline scope 3 reduction targets.

Again, we would emphasise that this must be a priority area for industry collaboration given significant commonality in the DNO supply chain. There would also be value in collaboration across sectors (eg with water) as they are grappling with many of the same issues around embodied carbon. A clear signal from Ofgem about the importance of collaboration in this area would be very helpful.

Overall, these sections highlight how difficult it has been to compare company SBTi and net-zero targets, given different approaches to time-periods and target-setting, the inclusion / exclusion of losses plus varying treatments of both scope 3 emissions and offsetting. In developing the AER Guidance we hope that Ofgem will provide a tight and clear structure for the companies to report progress towards SBTi and other BCF targets. Well-founded comparison will be an important regulatory requirement for this area going forward.

Scope 1 and 2 - Actions on operational emissions

While reiterating that the focus should be on the full BCF including SF6 and losses (which are discussed separately below) our comments on the key steps that companies are taking on their operational emissions are as follows:

Replacing operational vehicles with EVs: Our starting position is that these targets should simply be based on the natural replacement cycle for vehicles (5-7 years). While we can see merit in the argument put forward by many stakeholders that DNOs should lead by example, we also believe that this would need strong justification to demonstrate this to be an effective use of customers' money compared to other ways in which they might reduce their carbon footprint. Companies like SSEN that have differentiated their programmes by size of vehicle have clearly given the issue more thought. It is also often unclear how the costs split between vehicle purchase and the installation of charge points at depots and whether the reduced running costs of EVs (including any tax benefits) have been properly taken into account.

Reducing vehicle emissions: While ICE vehicles continue to be used a focus on promoting measures to reduce emissions is welcome. ENWL also outline a comprehensive ED1 'Colleague EV Incentive Scheme' (EAP p 21)

Reducing diesel generator emissions: This is a particular challenge for SSEN given their extensive use in the Scottish islands and is an example of where their SBTi commitment has forced them to engage properly with this issue in a way that others do not seem to have yet done (despite indications that they plan to). This is clearly an area for innovation and collaborative effort.

Building efficiency: This ought to be a cost-effective action for the companies to undertake as part of BAU. For example, ENWL set out their ‘energy hierarchy’ for non-operational sites – including a one-a-year net-zero site show-case plan. We note that a number of DNOs claim to address building decarbonisation through the use of green tariffs. While this is acceptable as part of the SBTi framework, we would caution against too much reliance being placed on REGO backed tariffs given the issues highlighted by BEIS in their recent consultation on this topic⁵. SPEN are unique in using PPA backed tariffs which is generally considered a better approach.

Substation energy efficiency: This “own use” energy is included within losses and again there should be an obvious cost-effective set of actions that could be implemented. However, as substation use is unmetered there is no effective way of measuring the impacts of actions in this area (and indeed no internal business case for what would otherwise be cost effective action). We are surprised and disappointed that no DNO plans to introduce at least some meters to monitor energy use at the substation level – although UKPN do mention the idea in their losses strategy. While we understand the underlying cost-benefit questions, installing some substation metering could be a way to support improved management of losses. We also note that some DNOs have concluded that regulatory restrictions preclude them from installing solar PV at substations and would hope that Ofgem could clarify if this is indeed the case or whether de minimis exemptions might apply.

SF6

We recognise the particular long-term challenges faced by DNOs on SF6 asset management given the need to align with their science-based targets and net-zero. Distribution leakage rates (as reported against the total “bank” of SF6 on the system) are low relative to transmission. However it should be noted that in England and Wales 132kV is a distribution voltage while it is a transmission voltage in Scotland. As well as control of leakage from higher voltage equipment – the main focus of DNO SF6 ED2 commitments and spend - DNOs also have a very significant long-run SF6 asset-management challenge, especially as SF6 banks will continue to grow for some years yet with installation of new SF6 equipment. Collectively, across their networks DNOs hold >200,000 items of equipment that contain SF6, many but not all in small sealed units. Aside from leakage prevention, SF6 units need continued containment throughout life and also arrangements for safe-disposal at end of life. Suitable replacements at every distribution voltage are also presently problematic.

In ED2, for the first time, DNOs are required by Ofgem to have an SF6 Strategy. However, in the BPs and EAPs, the SF6 Strategies are extremely variable in quality. Some DNOs simply commit in ED2 to developing a strategy, whereas others set out a full strategy in their EAP – or in a separate Annex. The best are SPEN and SSEN (both EAP and EAP Appendix (SSEN)). SSEN is the lead DNO on SF6 for the ENA. Both SPEN and SSEN reflect a considered process for SF6 management – from basic inventory, to monitoring, measuring, leak-detection, replacement (including supply chain involvement). As well as holding DNOs to the requirement for an SF6 strategy for ED2 we would like

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1011032/carbon-content-energy-products-cfe.pdf

to see Ofgem stressing the importance of collaborative work in this area, in particular on long-term solutions, working with the supply chain. The upcoming F-Gas reviews (both EU & DEFRA) are relevant – and SSEN is actively engaged for the ENA on behalf of other DNOs.

DNOs report their leakage rate relative to their total bank to Ofgem on an annual basis (back to 2013-14) – but in practice provide little additional information. DNO SF6 leakage will of course vary subject to their own asset-mix and asset-condition. But, in looking at individual DNO targets for SF6 leakage reduction in ED2 EAPs, it has proved extremely hard (1) to properly understand individual DNO ambition for ED2 baselined against ED1 and (2) to meaningfully compare across DNOs about their relative ambition levels on leakage reduction. As a priority, DNOs must put in place the new SF6 common reporting methodology proposed by Ofgem. Otherwise, it remains impossible to fully understand the bigger picture - not just on leakage but also to gain a clearer view of the future SF6 asset-risk attaching to the 200,000 DNO equipment items containing SF6.

Given the importance of tackling SF6 and for alignment with science-based targets and net-zero we believe that DNO SF6 Strategies should be explicitly financially incentivised – either as a part of the balanced score-card ODI-F or separately. The strategy output delivery incentive (S-ODI) approach provides a model for rewarding / penalising performance against their strategies.

See Annex 2 for a detailed look at DNO EAP material on SF6

Losses

We were disappointed with the limited ambition from the DNOs on losses, which in our view reflects the way that Ofgem have de-prioritised the issue in ED2 compared to previous price controls, at a time when the focus on carbon emissions and the cost of energy should mean they are more - not less - important. They are the prime example of a whole systems issue and need to be treated as such.

In cost terms the analysis underpinning the price cap announcement showed that the cost of losses is £15-20 (varying by region). Set against the average distribution network charge of c £100 this clearly merits more focus from a cost perspective. In terms of carbon emissions, losses make up around 90% of the companies' scope 1 and 2 emissions but the companies seem typically to rely on grid decarbonisation to deal with the impacts (with the exception of SSEN that has the additional challenge of diesel on the Scottish islands and hence seems to have a more strategic focus on losses). And from an energy transition perspective, with losses expected to increase as demand rises and more use is made of flexibility, this will increase the requirements in terms of renewable generating capacity if we are to meet net zero. For all these reasons losses needs to be treated as a priority issue.

One reason for Ofgem down-playing it in ED2 is the argument that the DNOs have made – and which comes through strongly in the Business Plans and EAPs – that losses are outside their control. However a review of the Losses Strategies reveals that there are a huge number of initiatives that the companies are exploring (prompted by the ED1 Losses Discretionary Reward) which puts paid to the idea that losses are uncontrollable. There is also a clear commitment across DNOs to over-size equipment when it is replaced for other reasons, which we welcome as addressing losses as well as helping “future proof” the network.

Obviously we recognise that the DNOs do not have full control over losses and that they can be expected to increase going forwards with the uptake of LCTs. However someone has to take responsibility for these emissions (which account for 1.5% of total GB carbon emissions) and we can

see no alternative to this being the DNO - which is in line with the SBTi determining that losses fall within their Scope 2 emissions. Moreover, as part of their shift to DSO the companies are increasingly working on how they can use flexibility to help manage peak loads – and in our view managing losses should be an integral part of this.

In Annex 1 we set out these arguments in more detail and also review the range of initiatives that have been identified in the Business Plans. We then outline the strengthening of the regulatory framework that we consider is needed to ensure that the commitments made are delivered and that there is an appropriate incentive to pursue the full range of opportunities identified. Given the complexity of these issues we do not believe a reputational incentive is adequate.

Specifically we argue for:

- a means of Ofgem holding companies to account for the commitments they have made around the use of low loss equipment and early replacement of some high loss equipment (which could be either through a PCD or the inclusion of avoided losses in the EAP scorecard – or possibly a new engineering standard);
- a UIOLI pot (or other financial incentive) for companies to progress initiatives that were not included in their plan but would be justified with BEIS’s new higher cost of carbon (that aligns to net zero);
- a financial incentive to help drive forward innovation and the work to better understand losses – based on an annual assessment by Ofgem of company performance (similar to the reputational incentive SPEN propose but with financial teeth);
- a consistent basis for reporting avoided losses and a 5-10 year projection of overall losses to help inform wider system planning.

Resource use and waste

In the Business Plan Guidance Ofgem requires the companies to set targets from avoided waste to landfill and for resource use / recycling. The companies have all complied with this basic requirement while noting that waste from streetworks (and other potential contaminated waste) needs to be treated separately.

We do however have a concern that for most companies the focus is on their “zero waste to landfill” target and that in general they will be looking to achieve this through increased use of “energy to waste”. As the CCC highlight in their report on Waste, emissions from energy to waste are growing and there needs to be more focus on circular economy principles – thinking about resource use from the beginning of the procurement cycle and aiming to reduce waste as a first step even before thinking about reuse and recycling. While all DNOs reference circular economy principles – in line with the Business Plan Guidance (to “Update procurement processes to embed Circular Economy principles”) – there is very little of substance to convince us that this is being taken seriously.

We would like to see the companies being required to report in their AERs on a broader set of metrics that reflects efforts to reduce both resource use and waste and then also covers the full range of routes that can be taken for dealing with (including explicitly identifying the amount sent to energy from waste).

Biodiversity

As we flagged in our response to the Business Plan Guidance this is an area where there has been a very significant increase in focus in the UK since Ofgem produced its Sector Specific Methodology Decision in December 2020. In particular we have seen the Dasgupta Review and the passing of the Environment Act which includes (for England) requirements to comply with biodiversity net gain requirements on significant new infrastructure that involves planning. Government have also committed to halt biodiversity loss by 2030 as mentioned in the Kwasi Kwarteng open letter. Similar obligations are expected to be introduced in Scotland shortly. As such Ofgem's baseline requirements in this area fall some way short of where wider policy requirements and expectations now sit. Only UKPN explicitly link their biodiversity targets to these new legal requirements (committing to go further than the obligations).

One feature of the Environment Act is that the obligation around biodiversity net gain will be measured in terms of *biodiversity units* using a methodology set out by Defra. As such there would seem to be a strong case for all DNOs to adopt that methodology (unless devolved nations ultimately adopt a different approach). Doing that would then allow commitments to be expressed in terms of biodiversity units (as eg SPEN already does) rather than simply the number of sites improved (where 'improved' is a very vague term).

One issue linked to biodiversity but only touched on briefly by a couple of the DNOs is the implications of their tree-cutting programmes for biodiversity and carbon emissions. As part of their safety obligations, and to comply with engineering standards, the DNOs all undertake major programmes of tree cutting. However for the most part they do not make the connection between that and their efforts on biodiversity or carbon emissions. SPEN and SSEN make the link – which we welcome - but in both cases they are only just starting to work through the implications. We would like to see Ofgem encourage all networks to consider the wider impacts of their tree cutting programmes and how to mitigate these while meeting their safety obligations.

More broadly we would highlight the importance of companies looking holistically at the actions they are taking to address biodiversity together with the carbon impacts and wider societal benefits (in terms of recreation, air quality etc). We would highlight SSEN's focus on restoration of native woodlands as part of its carbon emissions management and its seagrass CVP as examples of this holistic approach.

Fluid filled cables and PCBs

ED2 spend - both on oil-pollution and PCBs - is relatively very high compared to other EAP spend. While spend in both areas is a compliance matter and necessary, we would expect DNOs to demonstrate a more strategic approach to both these programmes right through from inventory, to detection, remediation, replacement and safe disposal - including making clear linkages with their wider investment programmes. Innovation should have a part to play in reducing the need for replacement of oil-filled equipment. Replacement of PCBs provides an opportunity to move to low loss equipment.

Given the very high levels of spend involved, Ofgem should ensure that activity on oil-leaks and on PCB elimination is delivered as bid for in business plans (through a price control deliverable for example) and that the approaches taken provide value for money for customers.

EAP scorecard, ODI-F and Annual Environment Report

EAP Scorecard / ODI-F

A number of the companies have set out proposals in their plans for how they see the EAP scorecard financial incentive working and we have also participated in the Ofgem working group on this topic.

While we are supportive of the concept of a financial incentive in this area – emphasising the importance of the environmental agenda – we have real concerns that as proposed it is focused entirely on second order issues, a point also made by the ENWL CEG for example.

This is critical to get right in terms of sending the right signals without over-rewarding companies. A balance is needed between financial (ODI-F) and reputation (ODI-R) incentives. This balance has not been appropriately struck in our view.

In terms of the scope of the proposed balanced score-card incentive by ignoring the largest sources of carbon emissions – losses and SF6 – and by ignoring the highest cost elements in the EAP – oil filled cables and PCBs – the scorecard and associated financial incentive is left dealing purely with second order issues. Moreover, some of these (such as the number of EVs) are easy for stakeholders to understand and hence if anything would be more susceptible to a reputational incentive than the other more complex measures.

One reason for the narrow score-card focus seems to be a desire to limit the incentive to quantified metrics only. We have argued previously that having established elsewhere the model of a strategic delivery incentive including qualitative assessments (eg for DSO), we can see no reason why this same model cannot be applied also to the EAP scorecard. As highlighted above on losses there are a range of steps the companies could take and their progress on innovation, building an understanding of losses and sharing learning could very valuably be included as a qualitative element in the scorecard (drawing on the approach that SPEN suggest for a reputational losses incentive). Even if Ofgem is determined to stay with quantified metrics it would be possible to create metrics around avoided losses, SF6 leakage and bank, and oil filled cables and PCBs that could be used to hold companies to account for the commitments they have made – including some relatively high cost commitments - and encourage them to go further in terms of the outcomes in this area.

In terms of the scale of the scorecard incentive at least one DNO proposes that the value of the ODI-F should be up to 0.25 % of base revenues. This is a very considerable sum (payable annually). It must be a clear principle that the level of reward is linked to the benefit delivered (eg linked to the cost of carbon) in line with the approach taken in T2.

Reputational Regulation (ODI-R) and the Annual Environmental Report

Where Ofgem is relying on reputational incentives it needs to have a much clearer view of how this mechanism is expected to work. As we set out (in some detail) in our response to the SSMD consultation in September 2020⁶ this involves ensuring comparative data is readily accessible to enable benchmarking within / beyond a sector; reflecting on the sources of reputational influence (and how best to strengthen them) and making a link to the regulatory framework. Stakeholders will expect Ofgem to know what is happening in the sector and see Ofgem as a trustworthy source of information looking across the DNOs.

⁶ https://www.sustainabilityfirst.org.uk/images/publications/consultations/Sustainability_First_-_ED2_SSM_Submission_-_250920_-_final.pdf

These are all vital considerations in the design of the Annual Environment Report. It is therefore vital that Ofgem provides prescriptive guidance to ensure that information is presented on a consistent basis – but equally that Ofgem is clear who the audience is for these reports. They must be accessible to key environmental NGOs for example. As highlighted in our cover letter there are real lessons to be learned from the approach to the Business Plans themselves which are completely inaccessible despite ostensibly being transparent and open. We see a potential role here for the ENA in producing an annual environmental summary report which draws on the DNO AER materials, including good-practice examples.

We would also actively encourage Ofgem to commit to producing an annual environmental report which benchmarks the DNO AERs. To be worthwhile, this would need to be more comprehensive than the current Ofgem annual reports on other aspects of the networks performance.

Finally, we note again the benefits of accreditation by external expert bodies as a simple way for external stakeholders to be assured on a company's performance. We have highlighted above the important role of the SBTi accreditation on carbon emissions and would also flag the role of ISO140001 as evidence the companies have a certified environmental methodology to drive improvement. Five out of six of the DNOs already have this, some already for many years. SSEN are aiming for certification by the end of ED1. We also note that SPEN have adopted PAS 2080 on carbon capital which would seem a positive step.

2 A smart, flexible energy system

2.1 DSO Transition and digitalisation

Summary: There is significant variation across business plans in the DSO vision. Through its ongoing work on the DSO role Ofgem will need to work towards a more consistent view of the DSO role, bringing in a wide range of stakeholder voices. Specific deliverables and costs are hard to identify in the plans which span digital strategies and DSO development, as well as asset monitoring. We also see a crucial role for the DSO in better losses management, which is neglected in the DSO plans.

There is a significant variation across the plans in the ‘DSO vision’ and how a future DSO is expected by Ofgem to sit and develop in each business. Beyond the BP process, the DSO role needs an extensive and very open debate as a matter of priority - with consumer, citizen and system efficiency interests and design principles at the heart. Such fundamental thinking goes far beyond development of the DSO role in the BPs through bilateral ‘local’ stakeholder engagement (although that is of course helpful). For stakeholders working across DNO regions a consistent approach is vital.

Correct national framing and facilitation of the DSO role will be a defining factor for a just transition and for achievement of net-zero. It is important that Ofgem’s DSO governance review adequately take forwards this fundamental debate but to date we are concerned that many wider voices are missing. The debate must be open, inclusive and non-technical. It must also be made far clearer how Ofgem and BEIS thinking on DSO is expected to integrate with their current consideration of the scope and role of the FSO. While the ENA Open Networks project can play a role – including in supporting wider engagement – there clearly is a crucial role for Ofgem in setting the over-arching framework.

So far, DSO baseline expectations and metrics have been developed in Ofgem / company working groups. These are fundamentally shaping the ‘common core’ of what progress towards DSO will look like for the next five years. This process of shaping key measures around what the DSO is – how it performs and how it will evolve - is far too important to leave to effectively ‘closed bilateral discussion’. This must be opened to much wider stakeholder input by both BEIS and Ofgem.

At a more detailed level across the plans there are fundamentally different start and finish points on a range of topics - LV monitoring, network modelling, separate / independent DSO. We hope that Ofgem will look closely at what the companies are doing in each of these areas and set this out at draft determination. As things stand it is very hard to compare DSO models (including costs) in any meaningful way.

At the core of future DSO capability is effective and extensive low-voltage monitoring plus 21st century digital & data capability (modelling & AI, operational integration, skills). We fully support investment in this area which also needs whole-hearted Ofgem support. We are aware from the CEG reports that many of the plans do not adequately justify the investment proposed in this space but that the CEGs typically view this investment as critical – a view we share. There must also be first-class checks and balances in place on digital spend via board-level governance / external assurance.

While all DNOs place an emphasis on increased visibility of network loads at the LV level they differ in the role they see smart meter data playing in this (and more widely). Some DNOs reference making use of smart meter data to support operations, planning (e.g to pin-point locations to install LV monitoring - UKPN), voltage regulation (NPG etc). The £11bn of consumer-funded investment in smart metering should be leveraged by DNOs and Ofgem should be wary of funding

extensive additional LV monitoring costs until DNOs have clearly addressed how far smart meter data can help with that task.

Moreover, in line with Sustainability First's PIAG recommendation – now endorsed by the Energy Digitalisation Taskforce - we would like to see DNOs starting to make use of de-personalised smart meter data as part of their commitment to make more system data available to third parties (eg via Network Development Plans and wider work on their Digitalisation and Data Plans). Given this data provision is seen as a key strand of the DSO role we would ask Ofgem to set out this expectation more clearly at draft determinations, noting the gap in the plans as they stand. We are aware from our PIAG work that this might require Ofgem to revisit the company privacy plans but would like to see a clear commitment to this as a way forward.

In ED2, there must be a strong focus on the DSO driving both operational- and investment-level efficiency of distribution losses – including via greater integration of voltage regulation, approaches to balancing loads across the system – and also through greater efforts to promote demand reduction generally. For all these areas improved LV visibility is also crucial. We have highlighted elsewhere the need for a much stronger focus on losses and see this as integral to the DSO role in a way that is entirely neglected in the plans. A first step would be to drive performance in all these areas more explicitly in the DSO baseline metrics.

More generally we would like to see greater focus on DSO performance in driving reduction of carbon and other green-house gases in the proposed baseline metrics.

2.2 DSO Transition, flexibility and electricity demand reduction

Sustainability First strongly supports the emphasis that has been placed on encouraging the use of flexibility services and sees this as a key role for the DSO. All companies are committed to a “flexibility first” approach which in our view should mean that flexibility is always considered as an alternative to reinforcement. It does not mean that it is always a better solution. As such we support the use of the ENA Common Evaluation Methodology to ensure tradeoffs are made on a fair and objective basis. This methodology needs to evolve to ensure that it is properly valuing the losses associated with running the networks harder but also the real option value associated with using flexibility. Ofgem must urgently review the ED2 CBA modelling approach to carbon price, wholesale electricity prices, asset lives and discount rates to ensure that tradeoffs are being made appropriately.

Another significant gap in the Business Plans is the failure to properly consider energy efficiency – and more specifically thermal insulation - alongside flexibility as an alternative to reinforcement, despite this being a licence requirement (SLC 31E). As Ofgem is aware we had advocated using ED2 to carry out one or more beacon thermal insulation pilots that would allow learning ahead of the real uptick in heat electrification in ED3. SPEN has adopted a cost benefit methodology for their ED2 load-related expenditure which assesses energy efficiency alongside flexibility across all proposed new projects (BP Commitment 3 plus pp 41 & 46) but also indicate that no such project has so far made-the-cut on cost-benefit grounds. UKPN also plan an energy efficiency flexibility product with six- monthly tenders starting in 2023. Despite these two statements of intent, we have not seen any real detailed ED2 proposals on how to make thermal insulation work as a meaningful tool for avoided network investment. The SSEN energy efficiency CVP starts to explore the issue but is not sufficiently focussed for us to be able to support it at this stage.

We also note the request from Kwasi Kwarteng for Ofgem to set out how its regulatory framework will deliver on net zero for 2050 and the interim carbon budgets. Ofgem needs to be clear that deferring investment in ED2 is not creating an undue workload in subsequent controls, adding to costs and risks for future consumers. Given that this is a long-term programme Ofgem needs to have some view of the likely demands through to ED3 which only one or two of the companies currently provide (although their ten-year network plans should give this).

On our reading of the plans the companies have taken very different approaches to anticipatory investment and it is vital that at Draft Determinations Ofgem clearly sets out its own thinking on the tradeoffs on 'spend-to-save'.

2.3 Whole systems

The companies vary in how they see the whole systems role evolving. However a common strength is the strong focus placed on working with local authorities on their local area energy plans which should integrate thinking around heat and transport. Perhaps inevitably there are differences in the approach that the DNOs propose taking in each of these areas which could be difficult for individual authorities that span more than one DNO area. With this work at a relatively early stage it may be hard to identify a single best model but Ofgem should ensure that there are arrangements in place for the DNOs to collaborate and share learning to move to a more consistent offering to local authorities through ED2. We hope that Ofgem will support the funding that is needed for DNOs to build the resources they need to effectively support local authorities in this area. In this regard we particularly note that SPEN has a Just Transition Strategy, and puts forward a business plan proposal for a £30m UIOLI Distribution Net Zero Fund of which almost half would be set aside for community-led projects.

The other point that we would make on the whole systems front is that losses should be viewed as a prime example of a whole systems issue but very regrettably losses are not addressed in those terms in any of the plans. What is clear is that actions by the DNOs (on operations and investment) have a significant impact on the amount of generation required – adding to cost in both the short and long term. This “blind spot” on losses in whole systems thinking needs to be addressed. NPG talk about not taking steps that would add to losses at transmission level but not about the impact that increasing losses will have on the need for increased transmission investment.

3 Keeping customer bills low

3.1 Forecasts and scenarios

Summary: The focus on local area forecasts is welcome but the different approaches to uncertainty make the plans hard to compare. Ofgem will need to make clear the assumptions underpinning its Draft Determinations and continue to test the companies on their practical ability to flex. The design of the uncertainty mechanism in this area is key.

All of the companies have developed local versions of the FES (DFES) and in our view this is a crucial step in building a more granular understanding of the potential growth in their regions, recognising that for DNOs it matters where the growth happens as well as how fast it happens. The DFES have typically been developed in close collaboration with local stakeholders and are a key step towards the development of local area energy plans, led by local authorities with strong DNO support. As highlighted above we see this as one of the successes of ED2.

In contrast the scenarios themselves have served to simply muddy the water. At one point in developing the ED2 methodology, Ofgem had indicated that they could set a central scenario that the companies should build their plans around (with variants from that forecast to be explained and justified). While this may have been problematic in ‘top-down’ terms it would at least have aided comparability. In the end Ofgem did not do this but simply required the companies to show how their plans could flex to accommodate uncertainty as reflected in any of the FES or CCC scenarios. The companies have done this but they all take different approaches as to what they use as the central scenario. This makes it impossible to compare across plans. Indeed, the companies even differ in how they interpret the impact of particular scenarios with UKPN seeing consumer transformation as the lowest cost scenario (as it would point to greater uptake of flexibility) while others view it as high cost (with more EVs and heat pumps). We hope that Ofgem will find a way to effectively compare the plans as it moves to draft determinations with a clearer view of what it considers a reasonable baseline scenario to be.

We would also question how effectively the companies have demonstrated that they could indeed flex to accommodate alternative scenarios. While all have focussed on the need for uncertainty mechanisms, with quite some difference in thinking on what form these should take, there is limited discussion in most of the plans about the practical implications of dealing with such a huge range of uncertainty. We would like to have seen evidence that the companies were moving to a more “adaptive” approach in how they think about their investment programmes.

3.2 Uncertainty mechanisms

As set out in our Regulation for the Future paper and [presentation](#) on adaptive planning and regulation, the use of uncertainty mechanisms by Ofgem is an important element of adaptive regulation and being able to respond in a timely way to a fast-changing external environment.

Probably the most fundamental element of the ED2 control in this area is the way that the uncertainty around load growth is handled. We welcome the fact that Ofgem seems to be proposing some form of volume driver – to avoid creating delays in the system for what are high volume, relatively low cost investments. However we are concerned that there still does not seem to be a consensus on the methodology to be adopted.

In our view, whatever approach is adopted, it is important that there are caps and collars beyond which Ofgem would need to review the expenditure through a reopener. Calibrating a volume driver so that it does not under or over reward the companies (and so it does not lead to under or over investment) is extremely difficult and given this is a new area it is vital that there is both ongoing monitoring and a full review if outturns deviate by more than a certain amount from the forecast.

Where major reinforcement projects are proposed we would expect these to be covered by a PCD in line with Ofgem's overall approach.

Overall Ofgem and DNOs need an appropriate tool-kit to ensure that net-zero investment is not needlessly impeded by undue short-term cost considerations – but which at the same time can also provide assurance that load-related spend is cost-efficient and has in fact been delivered.

We also have concerns that the consumer end-bill impacts of different scenarios are not always made clear – in particular in cases where the company has consciously taken a conservative view for their baseline projections but assumes that substantial load-related sums will later be funded in addition via uncertainty mechanisms. For example, we note that SPEN (which is not exceptional in this regard) envisages that uncertainty mechanisms could add 50% on top of its baseline load related expenditure, equating to around 6% on totex with a further 10% for the proposed reforms to access charges. These represent significant variances to the headline bill impacts which need to be transparently presented.

3.3 Cost benefit analysis

Cost of Carbon

The cost of carbon is an important parameter that the companies are required to use in the cost benefit assessments they carry out for projects with environmental benefits – for example on losses, SF6 and energy efficiency projects.

As highlighted in our response to the Business Plan Guidance consultation the cost of carbon that BEIS now says should be used in assessing proposals has effectively trebled to reflect the fact the UK is now committed to net zero. The Business Plan Guidance and CBA template has not been updated to reflect this. Ofgem has acknowledged in working groups that there may be a need to consider the question of how to treat a substantially higher cost of carbon in its assessment of the business plans. However, there will inevitably be proposals that companies have not included in their plans because they could not be justified using the existing cost of carbon but which would be justified using the new figure. For example, SSEN note in their Losses Strategy that environmental projects have been hard to justify using the cost of carbon that Ofgem proposes. We would also expect this to be the case as well in assessment of replacing SF6 assets ahead of end-of-life (although we recognise as well that, as WPD highlight, the embodied carbon costs would also need to be taken into account when considering early replacement). Given the scale of the change in the cost of carbon we would expect this effect to be material on projects where carbon emissions are the main driver, but Ofgem should test this with companies as a matter of urgency.

Given where we are in the process we would suggest that an additional source of funding may be needed to allow companies to develop proposals that would now meet revised CBA criteria but which were not included in their plans as they did not pass the hurdle based on the old cost of carbon. We suggest above in our comments on losses that a mechanism such as the Net Zero and Reopener Development use-it-or-lose-it allowance (NZARD UIOLI) or the Net Zero Pre-construction

Work and Small Net Zero Projects Re-opener from GD2 /T2 could be a model for a mechanism to fill this important gap.

As noted above SPEN have incorporated capital carbon assessments into their CBAs which we commend and would hope is an approach that could be adopted more widely to deal with embodied carbon. What is unclear is how any appraisal of new infrastructure would then also take account of the extent to which it facilitates decarbonisation of the wider energy system and would suggest this may be a topic for further research.

SROI

We welcome the effort that the DNOs have put (collectively) into developing an SROI tool based in large part on Green Book methodologies which takes account of the wider social benefits of their investments. At present the tool is largely only used in the context of vulnerability initiatives or CVPs although SPEN have also used it to assess the benefits of their EAP which their figures suggest are substantial (with Gross Benefits of £421m for a spend of £70m).

The Treasury Net Zero Review places strong emphasis on the wider co-benefits of investments to achieve net zero – and indeed Ofgem itself endorsed that concept in its Green Recovery funding. While clearly Ofgem does not have lead responsibility for tackling wider social and economic problems it cannot make sense for decisions on investments in energy networks to ignore these wider impacts.

We would hope that Ofgem will be supportive of the work the DNOs are doing in this space and look to build on it further for RII03.

3.4 Overall bill impact

Given the current energy crisis there will rightly be a very strong focus on the near term bill impact of the Business Plans and affordability. We support Ofgem benchmarking and testing the Plans to ensure that costs are justified and to impose stretching efficiency targets. We find it hard to see how companies can justify a lower rate of ongoing efficiency savings than the 1% pa that the CMA supported in the RII0 T2/GD2 appeals – and which currently only UKPN and ENWL propose in their plans. However it is important that this focus on the near term bill impacts does not lead to necessary investment in resilience and net zero being postponed.

Current distribution charges equate very roughly, on average, to around £100 p.a. in household end-bills. Extensive DNO consumer and stakeholder research has tested ED2 BP proposals and the associated costs. The expected impact of baseline spend on the network bill is clearly spelt out by DNOs. However, more clarity is needed on the likely additional impact on the network charge of non-baseline spend expected (rightly) to be funded via uncertainty mechanisms.

Two factors unrelated to the ED2 business plans are also set to push up electricity distribution network charges. From April 2022, customer network charges (both electricity and gas) will increase substantially due to the SOLR levy (supplier of last resort) and the attempt to smooth the impact for customers of the crisis in wholesale energy costs. Ofgem's announcement on 3 February shows average network charges across gas and electricity rising from £268 to £371 (a 39% increase). This cost of supplier failure is a cost which Ofgem and government choose to pass-through to consumers via the mechanism of network charges. Network charges are also set to increase as a result of the changes to network access charges and the connection charge boundary. In our view, in discussions about future end-bills, both of these factors need clearly separating out from any consideration of

the ED2 plans and funding commitments, and should not detract from the clear desire that customers have shown for the companies to invest towards a net zero future.

4. Financial information – asset lives

While we have not looked at the financial information in any depth we note the response by Maxine for Grid Edge Policy which considers at length the issue of asset lives raised by NPG. As part of its Sustainability Principles work, Sustainability First has been looking to place a greater emphasis on the issue of [inter-generational equity](#) and the need for a framework within which to consider these issues. This included commissioning a report by Frontier Economics and hosting a roundtable with relevant experts. Based on this we would endorse the conclusions of the Grid Edge Policy response that:

- the issue of asset lives has substantive inter-generational impacts and as such needs an open debate (not to be buried in the depths of technical annexes);
- this tradeoff between the interest of current and future consumers needs to be expressed in terms that consumers can understand – focusing on the outcomes in terms of bill impacts over time rather than just the inputs in terms of technical parameters;
- in particular Ofgem needs to set out what the impacts will be out to 2060 (the period for asset lives) not simply the impacts in ED2.

We are aware of course that the energy crisis will place considerable pressure on bills in the short term but a focus on what is a fair profile of bills over time is key to resolving these difficult tensions.

5 CVPs

We have not got the resources to look in depth at all the CVPs that the companies have put forward. However, one observation that we would make on the process is that there does seem to us to be a need to distinguish between a question of whether the initiative is worthwhile (and hence should be funded in ED2) and whether it is sufficiently stand out to merit a specific CVP reward. For example, we would support the case for SPEN's MAAV project to reduce losses to be funded but do not see why it would merit a reward given UKPN have already rolled it out.

We are also aware from looking at the CEG comments that a number of the initiatives are trying to tackle what might be considered valuable areas but where the evidence is not sufficient for the CEG to be able to support the initiative as proposed. We would hope that in such cases there might be a route to allow the company to work further on the proposal in the light of feedback from the CEG and from Ofgem.

In particular Sustainability First has encouraged the companies to look at what they might do to support energy efficiency, specifically thermal insulation as a prospective tool to avoid network investment. As such we were pleased to see that SSEN had put forward an energy efficiency CVP. However, the proposal looks very broadly at a range of energy efficiency measures (where our interest was primarily in thermal efficiency in readiness for heat electrification) and we would agree with the CEG that it does not merit funding in its current form.