

Enertechnos response to Ofgem's RIIO-ED2 Draft Determinations consultation

About Enertechnos

Enertechnos is a pioneering UK clean tech company. We are developing innovative solutions to improve how electricity is delivered – boosting the capacity of the grid, enabling the electrification of our economy, and supporting the transition to Net Zero. Our revolutionary cable technology – the Capacitive Transfer System, 'CTS' – reimagines traditional cable design to reduce costly energy losses, delivering more power and slashing carbon emissions.

Core-Q13. Do you agree with our consultation position for the DNOs' EAP proposals in RIIO-ED2 as set out in this document?

Enertechnos does not believe Ofgem's consultation position for the DNO's EAP proposals in RIIO-ED2 meets the scale of the impact of losses and will not sufficiently address the challenges they create for the electricity grid and consumers over the price control period.

As the core methodology document sets out "losses in the electricity distribution network contribute to carbon emissions and higher system costs for consumers". This statement has been substantiated for a number of years, with the true impact of losses unveiled in the Department for Business, Energy and Industrial Strategy's latest release of the Digest of UK Energy Statistics, which showed that electricity losses came to **26,305 GWh in 2021**¹. This is enough electricity to charge approximately **6.8 million electric vehicles** and is equal to the total amount of electricity the UK imported last year. Losses in the energy system cost the UK **£1.5 billion in 2019 alone**², a figure that is burdened on consumers through their bills, which are already increasing at an alarming rate.

Whilst all DNOs have been required to provide a Distribution Losses Strategy as part of their business plans, they have not received enough empowerment or challenge through financial incentives from Ofgem or a tougher regulatory regime to take stronger action against losses.

As a result, all of the DNOs have indicated in their strategies that total losses in their networks are expected to increase during RIIO-ED2, primarily due to the growth of the distribution generation. Given the upcoming price control period is expected to see significant developments in the transition to net zero, it is disappointing that the regulatory regime is allowing inadequate infrastructure to remain in place.

In comparable regulated utility sectors, Ofwat has taken a tougher stance on water leakages, setting water companies stretching performance commitments to reduce leakage over the 2020-25 period and expecting them to adopt innovative approaches to deliver these reductions efficiently. By achieving these commitments, the water sector is expected to cut leakages by 16% by 2025, which will save enough water to meet the needs of everyone in Cardiff, Birmingham, Leeds, Bristol, Sheffield and Liverpool³. A similar level of ambition is required to tackle electricity losses.

¹Digest of UK Energy Statistics (DUKES) 2022, Department for Business, Energy and Industrial Strategy, 28 July 2022, <https://www.gov.uk/government/statistics/digest-of-uk-energy-statistics-dukes-2022>

²The road to 2050: Is our energy infrastructure ready to deliver net zero emissions?, Enertechnos, <https://www.enertechnos.com/wp-content/uploads/2021/03/Enertechnos-Policy-Paper-Sept-2020.pdf>

³Ofwat, Leakage, <https://www.ofwat.gov.uk/households/supply-and-standards/leakage/>

Although it can be argued that the Losses Discretionary Reward has not had the full desired effect of incentivising DNOs to tackle losses, its withdrawal for RIIO-ED2 without a concrete replacement (whether that be tougher requirements or a similar incentive based scheme) is concerning. Enertechnos believes that Ofgem cannot claim that this “is in the best interest of current and future consumers” given what we know about the relationship between losses and household bills.

To support greater action against losses, Ofgem should include the following in their final determinations:

1. **Reinstate the Losses Discretionary Reward** for RIIO-ED2 or **replace it with a stronger financial incentive**. Specifically, Ofgem should ensure DNOs are able to, and held accountable for, using strategic funding to invest in technologies which improve network efficiency and reduce carbon costs over the price control period and longer term.
2. To ensure the accountability and continued monitoring of the efficiency of assets over their lifetime, **Ofgem should introduce an obligation for DNOs to provide two models as part of cost benefit analysis** – one looking at business-as-usual technology and another providing an alternative plan which uses innovative equipment, such as low-loss cabling and/or low-loss transformers, to reduce losses and increase capacity. This will allow DNOs to show the regulator the carbon costs of each technology and its benefit, justifying the additional spend.
3. To ensure DNOs remain vigilant and proactive in monitoring for network efficiencies, **Ofgem should introduce an annual reporting process** whereby DNOs must report on their own network findings throughout the year.
4. No one, at present, owns the issue of losses. This means that there is little incentive for action on tackling them. As such, Ofgem should ensure that, **by the commencement of the RIIO-ED3 price control period** at the very latest, **it is written into standard licensing that network inefficiencies, including technical losses, are the responsibility of DNOs to address and to mitigate**.

Core-Q15. Do you agree with our proposed approach to design of the Environmental Re-opener?

Enertechnos welcomes the decision to bring forward an Environmental Re-opener to accommodate environmental legislative changes within the period that require a material change in the approach to DNOs EAPs. This is particularly important given that new energy legislation is set to be brought forward in this Parliamentary session. Legislation should take an ambitious approach towards gearing the energy sector for net zero, embracing greater quantities of renewables and clean-technologies, so that the UK can be a world leader in tackling the effects of climate change. Enertechnos has already begun to engage with policymakers on this.

Enertechnos greatly welcomes that electricity distribution losses have been incorporated into the scope, representing a welcome step forward for the recognition of the impact of losses on the environment.

Core-Q88. Do you agree with our proposed assessment approach for Losses?

Whilst this question addresses transformer losses only, being silent on other forms of losses in the system, the proposed assessment is pragmatic from our perspective. However, there is a lack of guidance on a continued improvement aspiration and adoption of new technology, which without wholesale adoption will not always show an economic gain initially. As we have found out in the policies adopting wind power, where an incentive for adoption then resulted in the economic gain over time and continues to drive down unit costs going forward.

If the question is changed to transformers instead of losses, it might be correct, however a question about losses should address all parts of the system, including line losses and reactive expenditure requirements.

We know as system loads increase and will continue to do so as we transition to Net Zero, initial pinch points will show severe losses (rising exponentially with load increases) followed by wider losses growing (also exponentially) if we continue along the development path we are following. No incentive is being sought to use new technologies to address these issues, which are in plain sight if modelling is used to predict responses to growth. It will be too late to address this if incentives and constraints are not enacted now and we are likely to sleepwalk into avoidable expenditure, despite the availability of other solutions.