Annex 2 – Responses to Draft Determinations EAP additional information requests from Ofgem Consultation on RIIO-ED2 Draft Determinations

Core Methodology - Appendix 1 EAP Proposals

A1.34 Fluid-filled cables

A leakage reduction target (in percentage and litres). This should also include the number of kilometres of cables expected to be replaced during RIIO-ED2.
WPD has a RIIO-ED2 core commitment on the following; 'Avoid damage to the environment by reducing the volume of oil leaked from fluid filled cables by 50% by 2028 and replacing 90km of the worst leaking circuits with non-oil alternatives putting WPD on target to remove all oil-filled cables by 2060.' Using the average annual volume of FFC losses over RIIO-ED1 as a baseline our target of a 50% reduction over the course of RIIO-ED2 is equivalent to a reduction in losses of 12,467 litres of cable fluid. The removal of 90km of the worst leaking circuits will account for 3,700 litres of this reduction in losses (approx.30% of our target volume). The overall asset replacement programme seeks to remove approximately 110km of fluid filled cables across 33kV, 66kV and 132kV networks. The remaining fluid leakage reduction will be achieved by finding and fixing unexpected leaks faster with less fluid lost to the environment. This will be achieved by using PFT in all circuits where fluid has been lost to the environment. We will also be proactive in our management of the cables by responding to any cable low pressure alarms as quickly as possible.
Further evidence and justification for the primary and secondary investment drivers, the associated costs, risks to delivery, optioneering and environmental benefits.
Our Engineering Justification Papers 044 to 045 - Underground Cable Replacement Programme provide detailed evidence and justification for replacement of fluid filled cables across 33kV, 66kV and 132kV networks. The primary investment drivers are preventing leakage of oil into the environment as a result of deterioration of cables. Replacement is carried out where the deterioration has reached a point where is not feasible to repair them. In many cases, this is due to the deterioration of the lead sheath of the cable, which can become porous over time as a result of thermal expansion and contraction. This become evident where leaks arise along the length of the cable. In addition to the deterioration of the cables there may be issues with joints, terminations or the pipework and tanks used for maintaining cable oil pressures. Where leaks arise on these items, the joints, terminations and pressure maintaining equipment can either be refurbished or repaired.

The course of action is determined by the type and location of the leak. Repairs and refurbishment are lower cost activities and therefore these actions are considered first. But if the cable has deteriorated replacement may become inevitable in order to prevent further oil leakage into the environment.

Since these types of cables rely upon the oil pressure to maintain their electrical performance, the leakage of oil will eventually lead to electrical failures. The risk of electrical failure is a secondary issue that is avoided by the replacement of cables that are leaking oil.

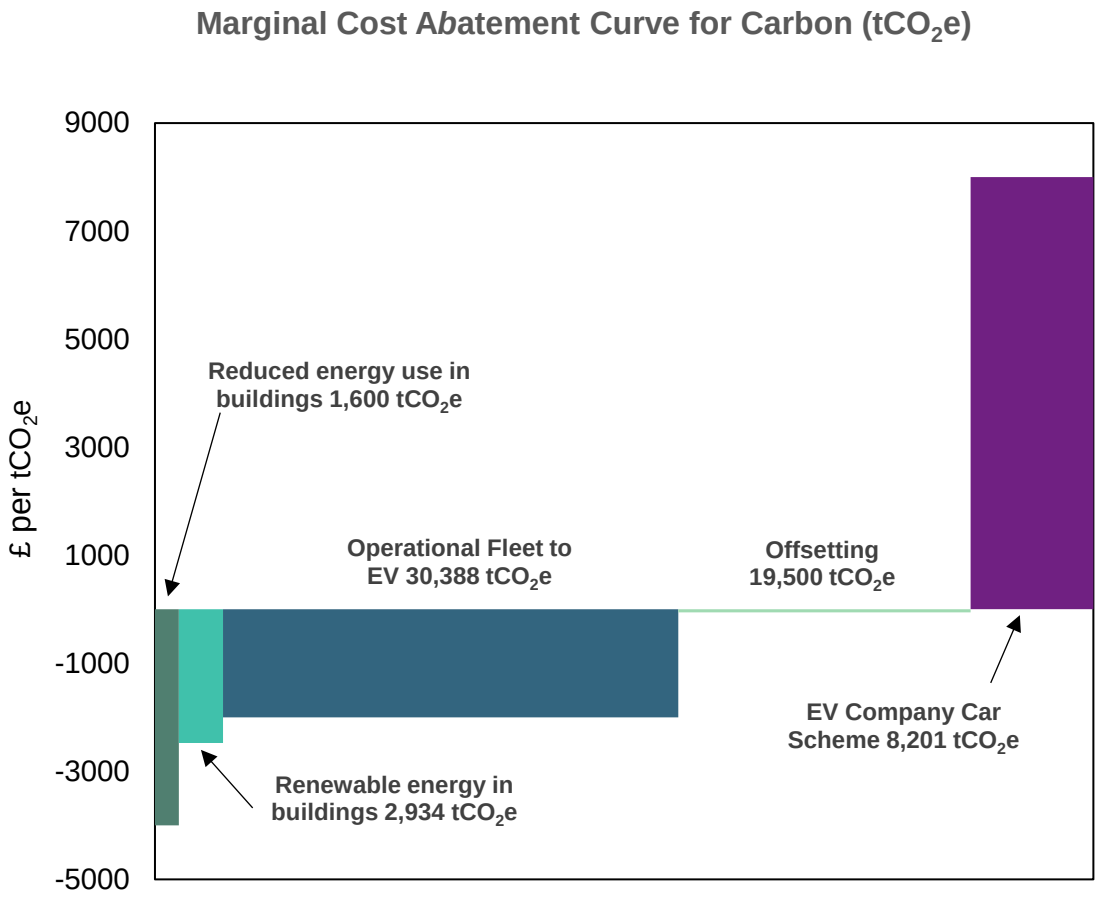
The environmental benefits detailed within our Environmental Action Plan include reductions in the following;

- risk of pollution to watercourses (surface water / ground water / drainage)
- disturbance to land, flora, fauna, biodiversity including trees habitat and crops from access and excavation
- noise, dust and emissions from transport, machinery and activity associated with installation and maintenance;
- the use and potential release of fuel, oil and hydraulic fluid;
- generation of spoil

Costs for replacement of cables and refurbishment activities are provided in BPDT tables CV7 (replacement) and CV8/CV9 (refurbishment). The expenditure for tagging cable with PFT are included in CV22 Environment.

A1.43 Carbon offsetting or removal

A marginal abatement cost curve for carbon.



The above Carbon Cost Abatement Curve demonstrates that a significant amount of carbon (19,500 tCO_2e) may be saved over the course of RIIO-ED2 through relatively low cost (£60 per tCO_2e) via offsetting schemes, such as the WPD/Heart of England Forest Partnership detailed below. This compares to the high cost of reducing energy use in buildings (£4,166 per tCO_2e) for a relatively small amount of carbon saved (1,600 tCO_2e) and the roll-out of the EV company car scheme which has zero cost implications may provide moderate carbon savings (8,201 tCO_2e) over the RIIO-ED2 price review period.

Further to the above CVP 1 - *Ensure WPD is a net zero business by 2028, and adopt a stretching Science Based Target of 1.5 ºC*, WPD have provided detailed costs as well as consumer, network and societal benefits, in terms of both carbon emissions abatement and improvements to air quality.

Within CVP1 two different approaches have been used to quantify the benefits of achieving net zero via carbon reduction initiatives and offsetting:

- Approach 1 (main quantification): Following extensive stakeholder engagement the estimated the benefit of net zero has been quantified as per the stated Willingness to Pay from our customers. This reflects the high level of support we received for this commitment and how important it is to our customers that we deliver this target. It also highlights the clear savings that this initiative will bring to WPD and the value of the reduction of emissions that will result from it
- Approach 2 (supplementary quantification): quantifies cost savings for WPD and the societal benefits in the form of reduced carbon emissions to obtain total benefits. This approach focuses on the significant value that our customers place on us achieving this target.

Using both approaches clearly quantifies the benefits of achieving net zero via carbon reduction initiatives and offsetting and provides a more holistic view of the value that can be delivered. It emphasises that even though the net present value of Approach 2 does not currently outweigh the cost, this is an initiative that is very important to a large proportion of our customers who are willing to pay a substantial amount to see this commitment delivered.

For further information including cost benefit analysis, benefits profile and Stakeholder Feedback refer to *CVP 1 - Ensure WPD is a net zero business by 2028, and adopt a stretching Science Based Target of 1.5 ºC*.

A joint consumer willingness-to-pay study for carbon offsetting and/or carbon removal projects.

Given the short consultation response timescales we consider it to be unfeasible to request and undertake a collaborative meaningful study into consumer willingness to pay for carbon offsetting. Moreover, it is unclear whether this request is for a joint DNO consumer willingness-to-pay study or a joint consumer group willingness-to-pay study to be undertaken by each individual DNO.

Furthermore considering the low costs put forward by DNOs for offsetting activities such a study would not be proportional to other costed areas of the WPD RIIO-ED2 Business Plan. It should also be recognised that customers and stakeholders often state high willingness to pay figures in relation to any environmental and sustainability issue therefore it would be difficult to gain any meaningful understanding of the stakeholder position.

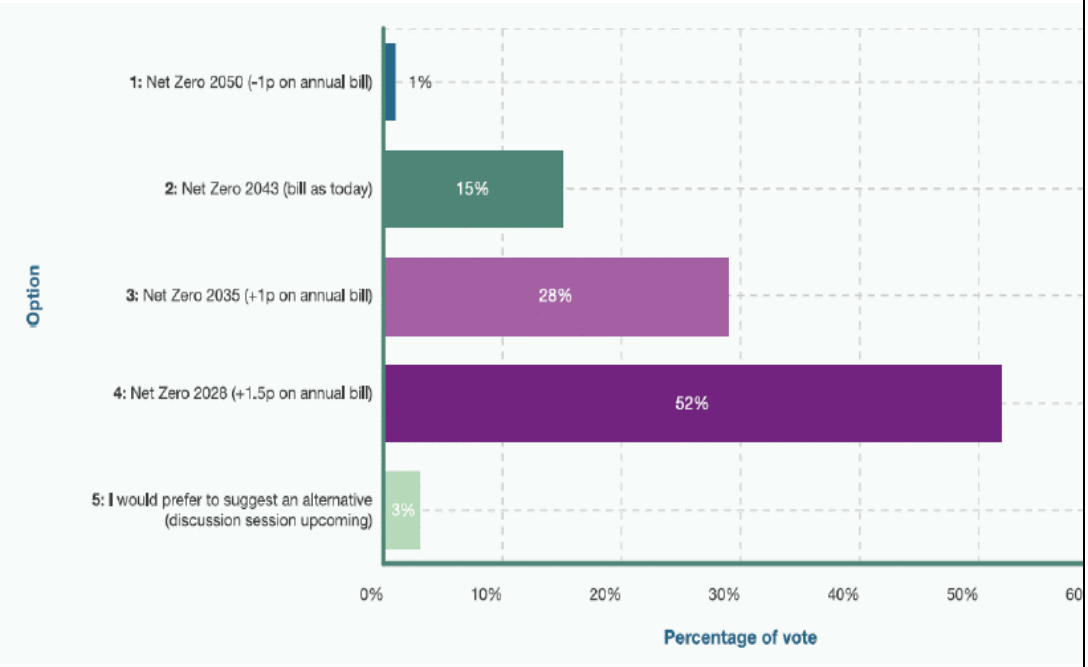
There are published studies outlining willingness-to-pay for carbon offsetting, specifically in relation to peatland restoration.
The economics of peatland restoration (tandfonline.com)

WPD have already provided details on consumer willingness-to-pay regarding our 2028 net zero target within CVP1-*Ensure WPD is a net zero business by 2028, and adopt a stretching Science Based Target of 1.5 ºC.* (Section 5, page 30)

Stakeholder and/or consumer support for offsetting activities.

The response from stakeholders to our initial proposal of net zero by 2043 in our first draft Business Plan consultation was resounding - they were highly critical, urging the company to pledge a more ambitious date and to lead by example in the industry. To ensure these views of informed stakeholders were not unintentionally drowning out the views of wider consumers, we ran a series of social media polls to test if views amongst wider customers differed to this feedback. In response, we found that their views were

echoed by others, with the significant majority stating they wanted far greater ambition, and 61% supporting the maximum level of net zero by 2028 (Option 4 – see below);



Through this cycle of playing back between different stakeholder audiences, we have refined our commitments to a point where overall acceptance of WPD's actions in this area have returned 92% support from wider stakeholders, and 80% acceptability amongst end user bill payers. In addition, the delivery of net zero was further tested with consumers as part of our in-depth social value research in 2020. We found that, in line with an increase in customer knowledge of this topic over that period, the corresponding value rose form 54p per customer (and 23rd out of 24 tested priorities) to £1.60 per customer (and 6th out of 20 tested priorities).

In relation to the achievement of net zero within WPD's BCF, we considered a number of options before consulting with stakeholders who expressed overall acceptance of the option to; achieve net zero by 2028 – with minimum offsetting.

Based on present day knowledge and the technologies currently available, the only route to achieve net zero by 2028 will require the use of some greenhouse gas removal schemes, this is due to the lack of zero carbon alternatives for the largest, specialised vehicles in our fleet and alternatives to SF6.

However the need for these schemes is not definite, and WPD will do everything it can to avoid the need for them and if developments occur within RIIO-ED2 which means we can achieve net zero without the need for any offsetting we will do so. Furthermore internal 'insetting' activities may contribute to reducing our BCF by 2028 without the use of 'offsetting' but this will only become clear in the period.

Forming partnerships with local and regional greenhouse gas removal schemes has been discussed in detail at our RIIO-ED2 stakeholder engagement events with overall support being positive.

At events held in September 2021 delegates discussed at length WPD's net zero plan, and our commitment to forming partnerships with local and regional greenhouse gas removal schemes where there is a surplus of business carbon emissions from our Scope 1 and 2 activities (excluding distribution line losses).

Stakeholder discussion has focused upon whether greenhouse gas removal partnerships are acceptable as a backup plan, and that WPD should make sure the partnerships and offsetting schemes are the best and most appropriate ones available, and are not used as a simple box-ticking exercise. The benefits in the partnership schemes, with the potential to add value and create synergies with communities in order to collectively address what is a wide-ranging challenge to remove greenhouse gases has also been widely discussed.

In the electronic voting, a majority, 88%, were supportive of WPD's proposal to form these partnerships see below;

To what extent do you agree with the following statement? "WPD's plan to form partnerships with local greenhouse gas removal schemes is acceptable to me."	
Strongly disagree	6%
Disagree	6%
Neutral	0%
Agree	**35%**
Strongly agree	**53%**
Don't know / can't say	0%

A summary of the benefits to network consumers.

Carbon offsetting and GHG removal projects provide a means to not only provide GHG reduction benefits but also co-benefits to the communities in the vicinity of the carbon offset project or partnership. Typical co-benefits of UK based schemes and partnerships may include the following;

- Improvements to community amenity access and well-being
- Local community employment and volunteering opportunities
- Improvements to local air and water quality
- Enhanced biodiversity habitat conservation
- Opportunities for community education
- Stabilise land and reducing soil erosion, reducing flood risk and surface run off
- Improvements in community social cohesion

The type and level of co-benefit is dependent on the individual schemes partnerships.

Detail on any carbon offsetting projects or schemes undertaken and/or supported, including expected emissions to be offset per annum in RIIO-ED2.

WPD is already committed to the following greenhouse gas removal and carbon offsetting partnership;

1. WPD has a signed Memorandum of Understanding with The Heart of England Forest (HoEF). Through a WPD financed Collaboration Agreement of £62k per annum

throughout RIIO-ED2, the Partnership will deliver on the following within WPD West Midlands;

- Woodland habitat creation via tree planting – WPD's support will help the overall charity objective to establish circa 300 acres of new woodlands between November 2022 and March 2023. In addition, WPD donation can fund the planting of 5 acres (circa 2,275 trees – based on average planting rates).
- Improvements to associated biodiversity, examples of which could include grassland enhancements, hedgerow restoration, wetland creation and restoration and planting pollinator pathways or patchworks which will improve biodiversity and support a wide variety of wildlife.
- Enhancements to community amenity value e.g. habitat maintenance, provision of footpaths and car parking facilities.
- Volunteer opportunities for WPD employees – circa 50 staff days per year.
- Volunteer opportunities for community groups, such as Warwickshire Community and Voluntary Action (WCAVA), Young People First and the National Academy for Social Prescribing, enabling regular public access work and to encourage and support physical health and wellbeing.
- Sequestration of circa. 4000 tCO2e per annum over the course of the Partnership (subject to external verification)
- Liaison with a third-party auditor/assessor to progress and develop potential project accreditation to quantify carbon savings and other quantitative evaluation resulting from the Partnership.

Founded in 2003, HoEF is the premier woodland creation charity in England, having already created the largest new native broadleaf woodland in the country, and continues its mission to grow a 30,000- acre contiguous forest. The Forest is provides rich habitats and stretches throughout the WPD West Midlands distribution licence area.
Unlike many UK planting projects, HoEF's objectives include purchasing and protecting the land they plant on to ensure the trees planted and woodlands created are nurtured, protected, and managed sustainably; safe and secure for generations to come. *See attached "Appendix 1 HoEF / WPD Partnership proposal.pdf".*

WPD will use the HoEF/WPD Partnership as a 'blueprint' partnership to establish similar collaboration agreements with other third party charity organisations in each WPD licence area.

To date we are currently in discussion with the following organisations to progress potential partnerships;

- The Marine Conservation Society – seagrass habitats / beach cleans / marine habitat restoration in West Wales
- An investment of £10k could help to protect an area of 5 hectares (four of seagrass habitat with the potential is sequester 4,125 tonnes of carbon.
- Trust of Conservation Volunteers (TCV) – planting approx.5000 trees per annum
- Groundwork Wales and UK Wildlife Trusts – planting community orchards / wide scale tree planting and habitat restoration