Feedback on draft business plan: UKPN

The RIIO-2 Challenge Group has been established by Ofgem as part of the RIIO-2 enhanced engagement process, in order to strengthen the voice of current and future consumers in network price controls. The Challenge Group's objective is to provide an independent challenge to ensure that regulated network companies deliver the value-for-money services that are needed, with particular regard to affordability, the protection of vulnerable consumers, and the transition to Net Zero.

As part of this role, Ofgem has asked the Challenge Group to provide scrutiny of all draft business plans submitted by network companies in the course of RIIO-ED2. Our feedback on the draft business plan that you submitted on 1 July 2021 follows below.

The Challenge Group recognises the challenging nature of the work that the DNOs are being asked to carry out during the period of RIIO-ED2, and its crucial importance. In what follows, as per our remit, we have generally focussed on areas where we feel there is room for improvement. This is not to detract from the standard of your planning and its broader implications. Where we focus on affordability, we recognise that other disadvantages may be at stake if the networks are not upgraded as required, and where we focus on your environmental impacts, we recognise that other environmental benefits may be enabled by those upgrades. Nonetheless, affordability and sustainability remain vital considerations. The Challenge Group is keen that no contradiction should be seen between a business plan that meets the coming challenges and one that provides value-for-money, mitigates environmental impacts and supports vulnerable consumers.

Our feedback focuses on three areas:

1. Costs, scenarios, and DSO and whole system proposals
2. Outputs:
    i. EAP
    ii. Vulnerability strategy
    iii. Reliability
3. Finance

We expect this feedback to be reflected in the final business plan submitted on 1 December 2021.

1. Costs, scenarios, and DSO and whole system proposals

This note summarises our initial comments. Additional detail is provided in a supporting annex.

1. ED1 Track record

You have described differences between ED1 price control targets and actual performance. You are forecasting a 12% totex underspend for ED1 and output targets will be met or exceeded. Asset heath delivery is on track. ED1 demand was below forecast. You have

provided a breakdown of demand and network utilisation parameters to show the expected network capacity position at the start of ED2 - we suggest this analysis should also clarify the status of high load index substations.

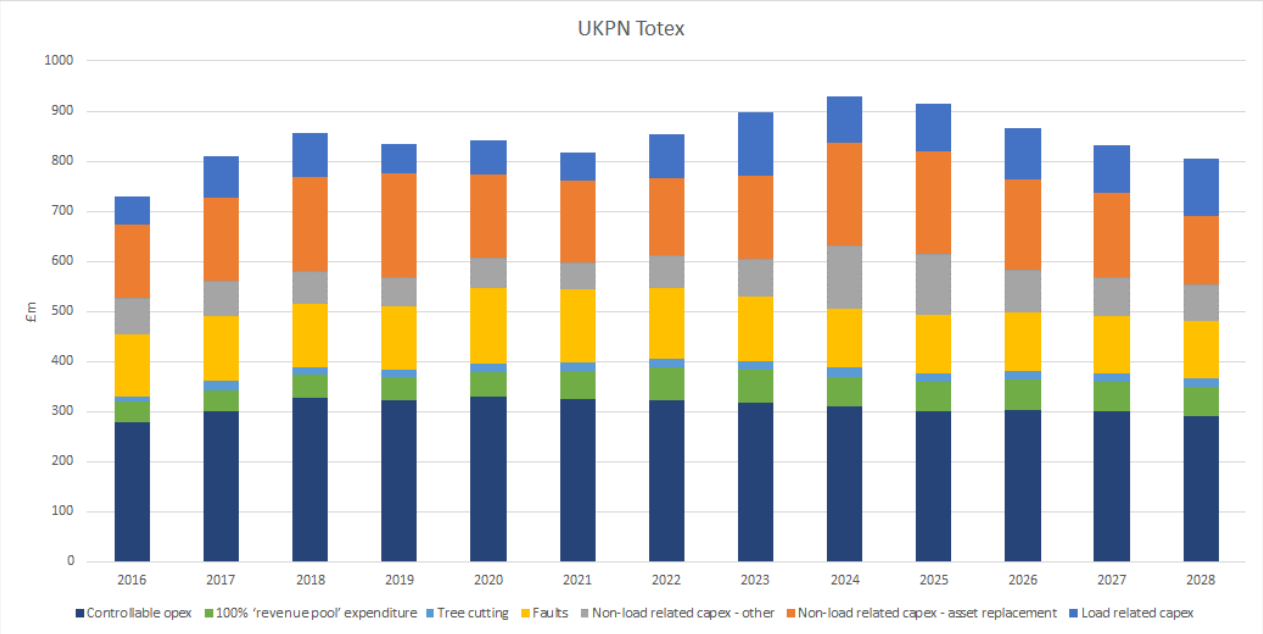
2. *Scenarios and forecasts*

You have used a 'Best View' scenario which appears to be NetZero compliant. However, our analysis suggests that the peak demand forecast appears to be higher than that envisaged by the ESO 2021 'Leading the Way' profile, and forecasts for EVs and heat pumps appear to be higher than might be anticipated.

We would welcome greater clarification about how these 'Best View' and 'Upper View' forecasts have been derived and why they appear to be higher than common industry scenarios. Evidence to show the impact of low carbon technologies on different network voltages would also be useful. For your final plan, we would welcome a clear demonstration of consistency with common industry scenarios.

3. *Totex overview (£4347m)*[1]

Your totex proposal for ED2 represents a 5% increase over average annual ED1 expenditure. A profile of the overall totex plan and main expenditure categories is shown below.



The following table compares the changes in the main totex cost categories in company plans between ED-1 and ED2. These cost categories are reviewed further below. While we think the following comparisons are representative, we have observed some inconsistencies

[1] [1] All totex figures quoted have been taken from the equivalent company BPDT or PCFM submissions for consistency. This may result in differences with numbers quoted in business plans. We have not attempted to reconcile these differences or differences between company assumptions at this stage.

in assumptions used in supporting data tables for DNO ED-1 track records and ED-2 baseline totex bids. For final plans we would request that the bids for the baseline totex (within the price control) are clear and are based on consistent assumptions so that we may assess proposed changes with ED-1 and between DNOs.

	ED-1 Average Totex	ED-2 Average Totex	% change	LR Capex	NLR capex - assets	NLR capex - other	Opex
ENWL	259	400	54%	180%	68%	124%	24%
SPEN	504	641	27%	107%	15%	188%	7%
SSEN	573	826	44%	152%	62%	150%	13%
WPD	1050	1332	27%	134%	15%	118%	6%
UKPN	831	869	5%	27%	5%	48%	-4%
NPg	470	641	36%	351%	12%	100%	10%
Total	3686	4709	28%	128%	24%	110%	6%

a) Load related expenditure (LRE): £500m

Your average annual LRE is expected to increase by 27% between ED1 and ED2 with the largest increases in connections and secondary networks. We welcome the comprehensive evidence that has been provided but we would like to better understand what investment is included in baseline or in uncertainty mechanisms. On EJP's we would like to see more evidence that flexibility options and environmental benefits of low loss assets and SF_6-free switchgear have been fully considered. For your final plan, we would like to see justifications why additional LRE is required during ED2 given that your peak demand by 2028 appears not to reach your historic levels.

b) Non-load related capex – assets: £892m

This cost category increases by around 5% between ED1 and ED2. Asset replacement expenditure is forecast to increase by 15%. We note that your asset replacement expenditure has decreased in the latter years of ED-1 before increasing sharply under the new price control. We are concerned that the ED2 increase is due to asset replacement and other expenditure in this cost category being deferred to ED2 and customers having to pay twice for the same replacement work. In your final plan we would like to see clear evidence for any expected change in asset health risk and associated expenditure.

Overall, we do not think non-load-related asset expenditure increases for ED2 have been justified and we would expect these costs to remain stable or reduce as efficiency savings are applied.

c) Non-load related capex – other: £486m

This cost category increases by around 140% between ED1 and ED2, due to significant increases in IT and telecoms expenditures. While we welcome expenditure that delivers

enhanced network visibility and flexibility, we would like to see greater clarity that these activities and the associated benefits can be delivered.

d) Opex[2] and efficiency: £2175m

You forecast a 4% reduction between ED1 and ED2 in operating costs (including network operating costs, business support and closely associated indirects) which is welcome. A 0.5% ongoing efficiency challenge has been included which we suggest should be increased to the 1-1.2% levels as for the 2020 RIIO-2 price control decisions.

4. Uncertainty mechanisms

You have proposed several bespoke uncertainty mechanisms, including measures to address uncertain LRE which transfer significant additional risks to consumers. We agree that it could be appropriate to include LRE uncertainty mechanisms but would like to see evidence that these are appropriately calibrated in terms of costs, volumes and triggers, and do not provide windfall gains for companies. Other uncertainty mechanisms you propose appear to transfer significant additional risk to customers – we consider that these are best managed by UKPN as BAU activities. For your final plan we would like to see evidence to support the calibration of proposed uncertainty mechanisms including the baseline totex assumptions.

5. DSO and digitalisation

You are proposing to spend £139m on DSO activities in ED2 compared to £19m for ED1 and are targeting 15% of secondary substations to have metering installed. DSO benefits are calculated at between £400m to £5 billion. We welcome the integrated initiatives that you are planning for digitalisation and DSO, but are concerned that the enhancements and benefits are inwardly focused and may not allow benefits to be sought via external market participants. A network-centric vision may block routes to other electricity markets, including community models. We suggest that the enabling technologies and processes should be further considered.

Overall in your final plan, we would like to see a clear justification for costs and benefits associated with your DSO and enabling investments. This should include benefits from distributed energy resources to enhance resilience, from active network management, and from interaction with the ESO.

6. Whole system

Your whole system plan includes a number of electricity focused coordination activities which are welcome. Initiatives for heat and transport appear to target reprioritisation of expenditure in the electricity network which might be considered to be business as usual for load related expenditure decisions. It is also unclear whether you have sufficient evidence to determine these priorities.

[2] Opex includes tree cutting, faults, revenue pool expenditure and controllable opex.

2.i. EAP

In reviewing the environmental commitments and EAPs in all the draft plans we have focused on decarbonisation. This is not to undermine the importance of other commitments to address environmental impact but given the need for this price control to be focused on the pathway to Net Zero, and the excellent work which stakeholders and CEGs have done in challenging all the companies in relation to all aspects of their EAPs, this seemed the area where it would be most valuable to look across the plans.

Overall, your EAP points to a strategic approach to environmental impact that takes into account vision, role and a longstanding and well-developed environmental assessment and management framework. ED2 actions are set within a long term context, including objectives to 2050s.

You are the first DNO to have a science based target (SBT) approved. In this, you have opted for a 'well below 2°C' compatible level for your emissions overall. You have also set a separate target in accordance with 1.5°C trajectory for your controllable emissions, i.e. excluding losses. The EAP sets out clearly how different measures will contribute to reducing scope 1 and 2 emissions excluding losses. You have also set a target to use offsetting to reach net zero as regards your scope 1 and 2 emissions excluding losses by 2028.

You propose a target of leakage of no more than 0.15% of your SF_6 bank in ED2. While this represents a relatively low level, because of your historically good performance we would hope to see more ambition: your average leakage levels in ED1 to date appear to have been 0.11%, already lower than the proposed ED2 target.

On losses, you propose a target to avoid 16.7GWh of losses over the course of ED2. This does not seem ambitious, particularly considering that your proportional losses have been a close second highest in ED1 to date. No new Losses Strategy appears to have been produced since 2019, and the latest version includes minimal discussion of plans under ED2. It would be good to see the quantification and justification of actions and benefits to address losses set out more clearly.

Questions and challenges

- Overarching challenge: please ensure that ED1 performance, proposed actions and benefits are expressed as clearly as possible, in consistent units (ideally both in absolute and percentage terms) and that baselines are identified and justified.
- How was decision to go for an SBT at the well below 2°C level, but including scope 3, reached? What are your plans in light of the SBTi's recent announcement that all SBTs must have a 1.5°C trajectory?
- The EAP notes that scope 3 and embodied carbon are inextricably linked. Does this mean your scope 3 target will cover embodied carbon?
- The proposed SF_6 target seems to be no lower than your current performance. Is this correct, and if so, given the stated intention to reduce emissions with further action, would it not be appropriate to set a more ambitious target?

- Do you have a plan to update your losses strategy before final submission? Has there been stakeholder input into this?
- We note that you propose a CVP that concerns three of the key initiatives in your EAP, but that this is not mentioned in the EAP itself. There, the targets covered by the CVP (60% penetration of EVs in your fleet, 30% gain in biodiversity at new substations etc.) are stated as commitments. Please clarify whether these commitments are dependent on the award of a CVP. We are also concerned that the first section of the proposed CVP, relating to decarbonisation, appears to reward measures which in any case would feed into your overall decarbonisation targets in line with the SBT. Why should they be treated separately?

2.ii. Vulnerability strategy

We welcome the following points about your vulnerability strategy:

- It sets out a clear vision – not just to be the lead DNO in this area but also to 'maximise the value delivered to customers in vulnerable circumstances'.
- The strategy is clearly informed by extensive and sophisticated engagement; insights about where you need to improve despite relatively strong performance in ED1 are set out clearly
- You plan an annual cycle of research and engagement to shape your plans and understanding further; you will formally refresh the strategy twice in the period.
- You will ring-fence 20% of your £5m Network Innovation Allowance for projects that will benefit vulnerable consumers; at least half of these will be delivered in partnership with another utility and will be further funded by 'trusted partners'. This is a good way to maximise the value of the activity.
- In terms of culture, the strategy talks about embedding questions around 'equity, diversity, social cohesion and quality of life' into governance processes.
- It commits to update PSR data every 18 rather than 24 months (though we would also like to see it focused on an outcomes/quality measure here).
- It has an ambition that your proposed net zero advice service could be used by all the DNOs. This shows an awareness that there needs to be national approach in this area.

Questions and challenges

The main themes of our questions and challenges are that your final plan should:

- Do more to define and measure the outcomes that you are aiming to achieve with your activities in this area
- Provide a detailed plan for how you will deliver your strategy, particularly when you are committing to a significant increase in activity
- Set out a clear justification for why you, as a DNO, are best placed to deliver your proposed activities.

- PSR reach: We want to compare the reach of DNOs' PSRs on a like for like basis. By 'reach' we mean the proportion of all and eligible customers who are registered. We are therefore asking all DNOs to clarify:

  - Your current (ED1 actual) and targeted (for ED2) reach as a percentage of all customers.
  - Your current and targeted reach as a percentage of eligible customers (i.e. all those who fall into any of the MDD PSR needs codes).
  - A breakdown of the percentage of eligible customers registered by each needs code.
  - If you use a definition of eligibility other than the full set of needs codes, please explain what this is, why you use it, and what your current and targeted reach is as a percentage of this group of eligible customers.

  Throughout, please be clear whether you are talking about individual customers or households, and what multiplication factor you are using if relevant. Please also give details of any customer groups that you define as 'high priority' and the reasons for this prioritisation. To what extent and in what way will your PSR recruitment be targeted on high priority groups?
- PSR quality: When you contact customers in an attempt to keep the PSR up to date, how do you currently assess the effectiveness of this activity and its impact on data quality, and how do you propose to measure this in ED2? What other criteria, if any, do you use to 'cleanse' PSR data and to remove people from the register?
- Impact of your support during a power cut: Other than the headline customer satisfaction metric, how do you currently measure the impact, reach and relevance of services that you provide to customers in vulnerable circumstances during a power cut? To what extent have you assessed any gaps between the specific needs of different groups of customers and the impact of the support that you offer? In what ways will the services that you offer to customers during a power cut be targeted on people with different needs?
- One of the strategic insights you set out is that complaints are higher among CIVS and that people want their personal challenge to be understood and recognised in the type of services and support offered. Yet overall satisfaction appears extremely high. Have you identified a more demanding metric that would help you focus more effectively on this unmet need?
- You are planning to add 600k micro businesses to your PSR register. How will you identify the scale of their vulnerability and how have you prioritised investment of time and effort on achieving this target compared with achieving a higher target for domestic consumers?
- Several of your new initiatives focus on customers who are medically dependent. Please explain the extent to which this has emerged from a systematic process to consider needs across CIVS with other needs and where you can 'maximise the value you deliver'?
- What assurance can you offer that your claims of 'shareholder funding' and services being delivered at 'no cost to customers' as a result are meaningful?
- Your commitments and metrics around fuel poverty are based on levels of activity delivered rather than the impacts that this activity might have. How does this square with your stakeholder challenge that 'demonstrable value' should be delivered by this type of activity?
- Culture: How will you measure whether you are being successful in embedding a culture of understanding and responding to the needs of consumers in vulnerable

circumstances across the business? In terms of any training you propose, how will you measure its impact or success?

- Costs: Please clarify: your total expenditure on vulnerability-related activities in ED1 (including any costs that are 'funded' by shareholders) with a breakdown by the main areas of activity. Please do the same for your proposed expenditure in ED2.
- CVPs:
    - Your proposed CVP on an £18m fuel poverty support programme seems central to your strategy. What would the implications for your strategy be if the CVP was not accepted?
    - You have assumed that almost 2/3 of customers take action on the advice provided. What evidence, for example from tests or trials, do you have that this level of take up is realistic?
    - Given that half of this activity is 'shareholder funded' why do you need additional reward to deliver it? Does that not confuse and weaken the claim of limiting its cost to customers?

2.iii. Reliability

Your general commitment is to improve reliability regardless of the volume or type of LCTs you connect in ED2. The strategic summary document says this results in a CI target of 36.1 vs 37.1 for ED1, and for CML 29.4 vs 30.2. This looks like a maintenance strategy overall, with most focus and additional investment going into improving performance for worst-served customers (WSC). This appears to be proportionate given that your comparative performance is relatively strong.

On worst-served customers you are aiming to deliver a '25% improvement in reliability' for as many WSC as possible for a total investment of £28m. You also make a number of specific commitments around short interruptions: this includes a target to reduce the number of short interruptions experienced by 10%; and a compensation payment of £25 for customers who experience more than 20 short interruptions per year. You also propose to gather and publish data around two new short interruption metrics and say you will use this insight to propose targets for both by 2024.

Questions and challenges

- CL and CML targets: Do you regard your current performance on CLs and CMLs as good enough for most people, given the cost of improving this performance further? What is your evidence for that? Are the modest headline improvements you are targetting the result of your improvements for WSC, and your 10% reduction in 12-hr outages, or will other activities be needed to achieve these?
- Worst-served customers: you seem to have started with the total sum that you think it is reasonable to invest rather than the number of customers whose service you aim to improve. Why have you approached it this way round and how have you arrived at the level of investment proposed? You say you will explore 'innovative solutions' to improve the service where the cost of traditional solutions is prohibitive. Can you give some examples? How many customers would be entitled to your £25 compensation

payment if it was available today, and will you commit to making this an automatic process in ED2?

3. Finance

We were pleased to note that the finance section of your Plan was compliant with the requirements set out by Ofgem in the Sector Specific Methodology (SSMD) and that you have carried out, and presented with admirable clarity, the full scenario analysis requested.

Although there are many positive aspects to your Plan, there are some areas which we consider need attention before submission of your Final Business Plan (FBP):

- You say that you regard the outperformance 'wedge' of 0.25% as 'inappropriate'. You should be aware that we concur with Ofgem's stance on outperformance and that we consider it to be very well supported by historic evidence. We expect to continue to be supportive of any measures which Ofgem decides to take to address this issue;
- You say you are targetting a rating of BBB+/Baa1 in the base case and that maintenance of that rating is a 'key objective'. As you will know, Ofgem takes the view that it is for individual DNOs to select their target rating, subject only to that rating never falling below investment grade (and now with arrangements that Ofgem must be alerted if there is an immediate risk that it falls below that level). Because the maintenance of an investment grade rating is a licence requirement, the target rating for your Actual Company is clearly a significant consideration. Ofgem obviously bases its assessment of the financeability of individual DNOs on their Notional Company but we consider it is also important, in the context of minimising costs to consumers, that Ofgem is able to set its generic finaneability parameters for the sector on the basis of a full understanding of the optimal financing arrangement for Actual Companies. Both sets of projections, therefore, need to be drawn up on the basis of minimising the impact of financing costs on consumers. In your case, we consider this is a particularly important consideration: we see very little risk to your investment grade rating. Against this background, we regard BBB+/Baa1 as at the upper end of the acceptable target range and urge that you further explore scenarios which minimise costs to consumers. We do not, for instance, think it necessary – or even desirable - to project BBB+/Baa1 in extreme downside cases (RoRE underperformance and totex overspend);
- Your Plan contains a clear (and helpful) statement from your board that your Plan is financeable on the basis of Ofgem's W/As (you suggest that, for the sake of clarity, you make very clear in your FBP that that includes a Cost of Equity allowance of 4.65%). Your statement on financeability is well supported by the results of your scenario analysis. Against that background, we can see no basis for your suggestion that Ofgem's proposed Cost of Equity allowance is too low and that it needs to be within a range (5.81%-6.87%), the top end of which is strikingly high. Such a change would not, in our view, be in the interest of consumers: you may wish to reconsider this proposal before submission of your FBP. We do not, in any case, support the concept that it is appropriate to change the Cost of Equity allowance in support of the varying requests of, and issues relating to, different DNOs;
- You should be aware that we are supportive of Ofgem's proposed Cost of Capital allowances which we regard as based on sustainable Capital Asset Pricing Model (CAPM) analysis with appropriate cross-checking. The clear evidence of appetite for the acquisition of utility distribution companies – and at a very substantial premium to

RAV - does not support the argument that Ofgem's analysis of the WACC appropriate to DNOs, and hence its Cost of Capital W/As, are miscalculated. We also consider that the extent to which expenditure in ED2 will be subject to adjustment arrangements (uncertainty mechanisms and other) and the escalation arrangements which Ofgem proposes in relation to the cost of both debt and, through adjustment of the risk free rate, equity, are indicative of a significant lowering of the risk profile for DNOs as against that in ED1 and are not, in our view, supportive of an increase in Ofgem's Cost of Capital allowances over those currently proposed;

- You say that you regard changes to depreciation and capitalisation rates as 'unacceptable' solutions to problems of financeability. It is clear that you do not have a fundamental issue with financeability but we urge you to consider whether there may be changes you can make in depreciation and capitalisation rates which will reduce costs to consumers;
- You make a case for an 'infrequent issuer' premium on the Cost of Debt allowance. It is clearly for individual DNOs to determine their debt funding strategies and the frequency with which they access the markets. In this context, we note that UKPN is of a size which means that it has more flexibility than some other DNOs and can see no reason why it should be a particularly 'infrequent issuer'. We are not supportive of the concept of a company specific Cost of Debt allowance;
- We note that you have used an assumption of 60% gearing for both the Notional Company, as required, and also for the Actual Company. Before submission of your FBP, we believe you should give full consideration to different levels of gearing which may reduce costs for consumers.

Annex: assessment of costs, scenarios, and DSO and whole system proposals

This annex sets out our supporting comments on the UKPN July plan. In each of the following areas we have set out what we are looking for in each plan and our observations about the draft plan.

1. Scenarios and forecasts

We are seeking to understand how the companies have aligned their forecasts with Net Zero objectives, as set out in the FES and 6th Carbon Budget and take account of any local customer-led drivers. We wish to see how these forecasts lead to investment at different network voltages, including where flexibility resources will be used instead of investment.

We note that UKPN has not used a single scenario as the basis for its business plan but their totex strategy aligns most closely to the Consumer Transformation scenario in their DFES. Totex is based on identifying high confidence investments, using uncertainty mechanisms to deal with variances.

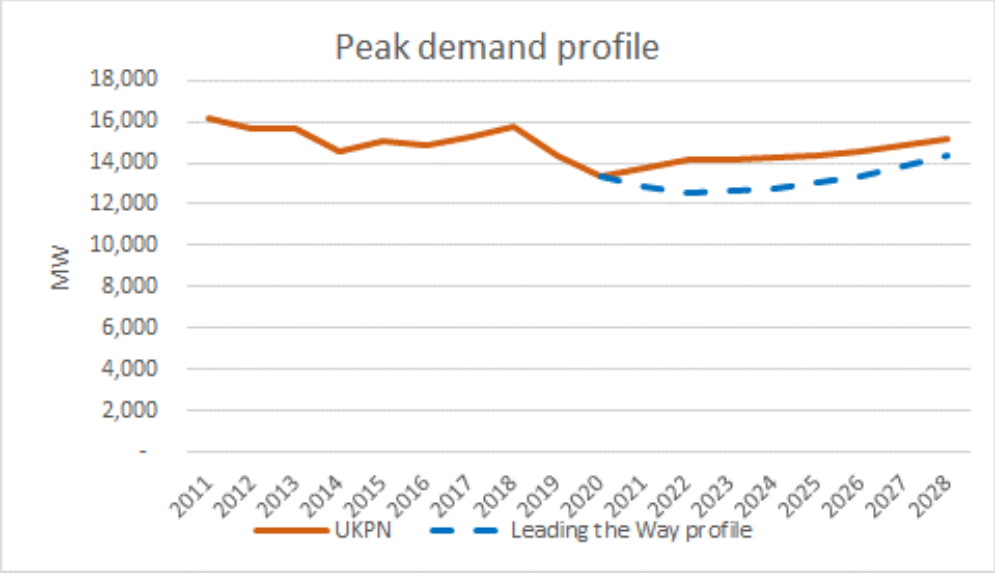
By the end of ED-2, UKPN forecast they will connect

- 2,636,798 EVs and 274,752 heat pumps by 2028 under their Best View scenario and
- 2,729,131 EVs and 665,622 heat pumps under their High scenario.

UKPN has around 28% of the Networks' customer base. The forecast number of EVs across this customer base in 2028 higher than suggested by the ESO FES Consumer Transformation or Leading the Way scenarios which forecast a total 7.7m BEVs (cars + vans) – these scenarios are at the higher end of the EV uptake forecast by the ESO forecasts. We note your explanation for the higher forecast of EVs in your region.

UKPN's forecast for ASHPs, including hybrids, under their baseline scenario is consistent with the ESO FES Steady Progression scenario which is at the lower end of ESO forecasts. We would benefit from a clear explanation of why the Best View scenario takes a different approach for EVs and HPs. We would also like to understand the forecasts for Low Carbon Technologies that inform the demand forecast by voltage level.

The UKPN submission of demand profiles in the BPDTs (as shown below) shows an increase of around 14% between 2020 and 2028, which is above the equivalent peak demand increase of 8% forecast in the ESO 2021 'Leading the Way' scenario.

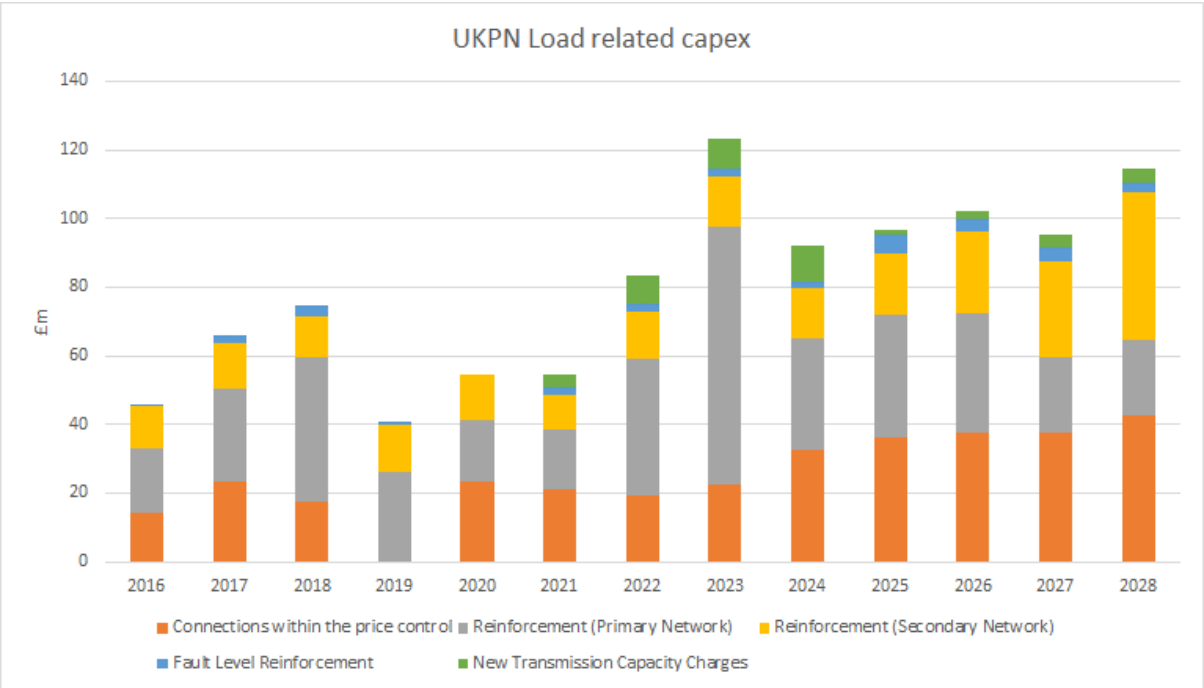


2. Totex - Load related capex for ED2 including anticipatory investment

We are seeking to understand company investment pathways for load related expenditure, and how they have taken account of:

- Historic levels of network utilisation and reinforcement expenditure
- Downward cost drivers, including efficiencies, innovation and flexibility
- Upward cost drivers including demand scenarios and anticipatory investment

We are looking for evidence from EJPs and CBAs which justify costs, volumes and timings of expenditure together with uncertainty mechanisms where justified and PCDs to provide delivery certainty.



	ED2 £m	% change
Total load related capex	500	27%
Connections	186	111%
Primary reinforcement	148	-11%
Secondary reinforcement	127	96%
Fault levels	18	116%

UKPN's baseline load related capex profile is shown in the above chart and table, totalling £500m in the ED2 period. UKPN's high forecast adds an additional £694m to this baseline, more than doubling this expenditure.

UKPN's load related expenditure is most closely aligned with the FES Consumer Transformation scenario, which has the highest level of electrification. A breakdown of how the investment programme has been built up from this scenario has been provided, including how flexibility and other efficiency benefits will be included. LRE forecasts include £30m to help premises become LCT ready, and £40m to help off-gas grid communities transition to LCTs.

We have examined a sample of the load-related EJPs and would like to see more evidence that flexibility services have been properly considered and that the environmental benefits of low loss assets and SF_6-free switchgear has been evaluated in the CBA.

Overall a comprehensive proposal, but the plan refers to alternative strategies for speeding up investment but is not completely clear about what has been included in baseline or in uncertainty mechanisms. This should link to strategies and justifications for particular investment volumes and unit cost e.g. unlooping.

3. NLRE totex for ED2

As in the case of LRE totex, we are seeking to understand company investment pathways for non-load related expenditure, and, again, how they have taken account of:

- Historic levels of non-load related expenditure, asset health and reliability levels
- Downward cost drivers, including efficiencies, intervention options, and innovation
- Upward cost drivers including demand scenarios and anticipatory investment

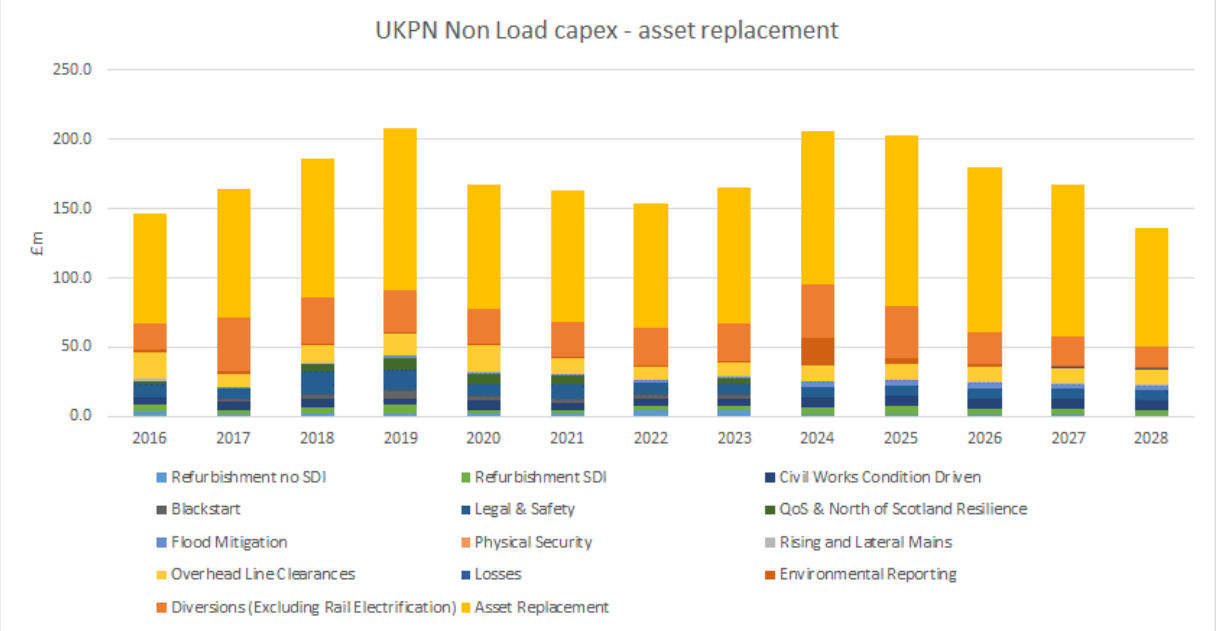
We are looking for evidence from EJPs and CBAs which justify costs, volumes and timings of baseline expenditure to deliver asset health and reliability outputs during ED2, including PCDs where appropriate to provide delivery certainty. We are also looking for evidence that, where a higher rating for a replacement asset is proposed, utilisation and load data is provided to justify this and that due consideration has been given to replacement vs refurbishment

We have examined UKPN's proposals for a) NLRE - asset replacement and b) NLRE - other. The NLRE asset replacement profile is shown below, together with the major changes between average ED1 and ED2 expenditures.

<u>NLRE – asset replacement</u>

While this cost category increases by around 5% overall, asset replacement is forecast to increase by around 15%.

UKPN's asset replacement expenditure has significantly reduced in the latter years of ED1 before being planned to increase sharply under the new price control. UKPN's plan claims this is due to efficiencies, but we are concerned that this expenditure is simply being deferred to ED2, and customers will pay for this again.



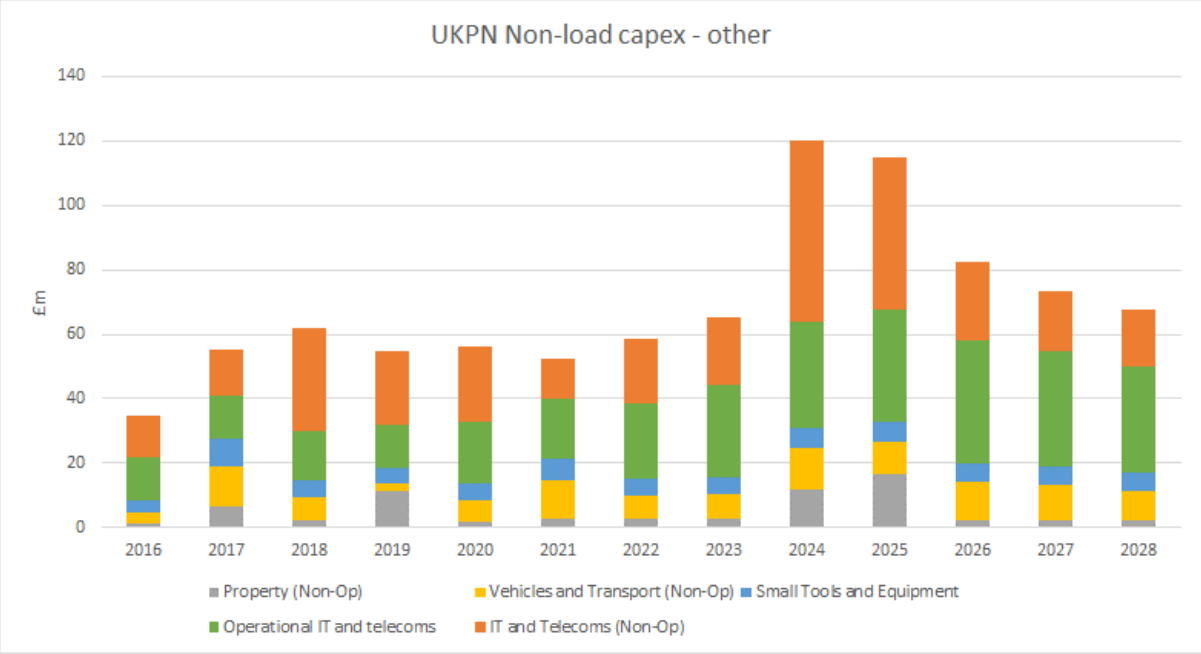
The asset replacement increase in the ED2 period is justified by the age of these assets which will drive a significant increase in volumes, although this will be offset by unit cost improvements. Larger capacity assets may be used to reduce long term costs especially for underground assets.

UKPN's draft Business Plan states that value for money for the work that is included in the plan is delivered by benchmarking our unit costs on a disaggregated basis and that these unit costs are benchmarked by 'expert view'. It would be good to understand if these unit costs are subject to independent scrutiny.

Overall, we do not think the asset replacement volume and expenditure increase for ED2 above that for ED1 has been justified. UKPN are continuing to maintain asset health targets on largely the same assets as ED1 and we would expect costs to remain stable or reduce as efficiency savings are applied.

NLRE – other

The following chart shows the forecast profile for NLRE – other. There is an average increase of 140% from ED1 driven by significant increases in IT/telecoms. Increases are also planned for flood mitigation and to improve performance for worst served customers.



We welcome additional expenditure where it delivers enhanced network visibility and flexibility markets. However, the above profile shows a sudden increase in expenditure in 2024. We would like to see evidence to demonstrate that this profile can be delivered, together with justifications that show how the benefits from these enhanced outputs are delivered efficiently.

4. Totex - Opex and efficiencies for ED2

UKPN's average operating costs decrease by 4% overall for ED-2 compared with ED-1, with closely associated indirect costs decreasing by 10%.

	ED2 £m	% change
Total Operating costs	2,469	-4%
Network operating costs	889	-10%
Closely associated Indirects	855	-5%
Business support costs	425	0%

While an overall reduction is welcome, we note that this appears to be dependent on assumptions about smart metering costs and would welcome clarification that this reduction can be maintained for the final business plan.

UKPN have included a 0.5% pa ongoing efficiency challenge. While the efficiency proposal is welcome, we think that this efficiency challenge should be set at levels equivalent to those proposed for electricity and gas transmission and gas distribution i.e. an ongoing efficiency challenge of 1.15% p.a for capex and 1.2% pa for opex.

5. Bespoke uncertainty mechanisms

UKPN have not included any uncertainty costs in their baseline. The proposed uncertainty mechanisms would add about an additional £1100m, a 24% increase on baseline totex.

Category	Risk addressed	Mechanism	Potential cost
1. Service Alterations	Investment at Customers' homes to connect low carbon technology (fuse upgrades, unlooping of services and service cable upgrades). If demand for LCT connections exceeds baseline forecast.	Volume Driver	£42m
2. Capacity and Circuit Volume Driver	Investment in secondary infrastructure (substation transformers, cabling) where necessary to respond to capacity constraints beyond those foreseen in baseline scenario	Volume Driver	£121m
3. Investment in Primary Infrastructure	Investment in primary infrastructure in high demand scenarios, where utilisation data shows that primary level infrastructure requires intervention	Reopener	£300m
4. Connections within Price Control	Recovery of connection costs not funded by the connecting party and not covered by totex allowance.	Reopener for EHV costs. Volume Driver for LV/HV costs	£67m
5. Diversions	Costs of diversions which are not funded by the third party requesting them	Reopener	£158m
6. Fleet and Generation	Accelerated Investment in EVs as service vehicles and in low carbon mobile generators	Reopener	£22m
7. Indirects	Support for Closely Associated Indirect activities, required because of extra work identified in the other Volume Drivers but not costed within those mechanisms and which are a key enabler to the planning, design and delivery of capital works outside price control. Also extra non-operational capital costs, such as vehicles, small tools and IT equipment driven by these extra levels of direct activity.	Reopener	£210m

Category	Risk addressed	Mechanism	Potential cost
8. Social Capacity Release (Green Recovery Plus).	Investment at risk for social benefit and in response to market failure and local, regional or national government plans. This includes our response to Local Authority Energy plans.	Reopener	£161m This may not cover the full cost
9. Response to regional and local plans	Specific response to GLA plans to decarbonise London by 2030	Reopener	No costs estimated yet
10. Accelerating London's Decarbonisation			
11. Replacing Equipment with PCBs	Replacement of PCB contaminated equipment which may be needed during ED2, but which cannot now be identified with certainty	Volume Driver	No costs estimated yet. Replacement of pole-mounted transformers will be funded through the UM2 process.

We agree that load related expenditure will be subject to a high degree of uncertainty during ED-2 and that additional expenditure may best be addressed through uncertainty mechanisms. Items 1 to 4 in UKPN's list would fall into this category. UKPN has proposed baseline costs for 2.9m LCT's by 2028, but the UMs would fund costs for a high demand scenario and up to 3.4m LCT's. Volume drivers and unit cost parameters are defined – we would like to see evidence to demonstrate that these deliver the investment needed and do not provide windfall gains to companies. In addition, these appear to be upwards only mechanisms – we think they should be symmetrical.

The load related expenditure increases are also proposed to trigger increases in indirect costs ie CAI and Business Support. We would like to see evidence that these increases are justified.

The other mechanisms that are proposed are diversions, generation costs, policy uncertainty, including London 2030 targets, removal of PCBs – we think these risks are best managed by UKPN as part of its normal business activities, or by application of the Net Zero reopener if there is a major policy change.

6. DSO and digitalisation

We are seeking to understand how DNO plans will demonstrate delivery of:

- Digitalisation, providing high visibility of network utilisation and available capacity
- DSO functions, especially for third party access to flexibility markets,

We are seeking to understand proposed costs and benefits from these DSO initiatives, including how this ambition exceeds business as usual expectations. These include benefits from working with the ESO.

DSO and digitalisation

Overall UKPN provided a comprehensive proposal integrating digitalisation and DSO activities. UKPN set out the following parameters for their DSO activities:

- Network visibility - at end ED1, UKPN will have 13% of Secondary substations with demand monitoring and are targeting 15% by end of ED2.
- Flexibility markets – 750 MW pa procured over ED2 compared to ED1 forecast of 369 MW.
- Costs – UKPN's DSO data tables show expenditure of £19m for ED-1 and £139m for ED-2. However, we found it difficult to identify where the £139m would be spent.

DSO benefits

UKPN propose that DSO investments will defer and avoid investment out to 2040. As load growth increases over that time-period, the cost savings delivered by DSO investments will increase. UKPN propose that DSO Benefits (to 2040 will be):

- High confidence NPV benefits: £400-460m
- Estimated additional wider system PV benefits: £750-£4,770m

In RIIO-ED2, UKPN state that their DSO investments will defer or avoid the following investments:

- c£400m of capital investment on the primary and secondary network which can be deferred by making greater use of flexibility.
- £185m of capital investment to facilitate distributed generation that can be enabled through the use of smart solutions.
- £1.7m of secondary reinforcement which can be avoided through improved data to inform investment decisions.

Whole system benefits

UKPN also note that the ESO has identified around £2bn of savings from its RIIO-ED2 business plan. They have identified that £150m of these benefits require UKPN input, through helping to run Regional Development Programmes, providing effective network access for DER, or planning the network from a whole system perspective. Working with the ESO, they have calculated that these deliver £340m to £390m benefits out to 2040. They claim to have high confidence that the UKPN DSO will deliver an NPV benefit of £400-460m out to 2040, with a pay-back period of 5 years.

In addition, through optimal use of flexibility on the network UKPN say they can help avoid wider system costs, such as the need to build a much larger scale renewable generation

plant and peaking capacity. The top down analysis indicates that between £750- £4,770m of additional wider system savings can be delivered by their DSO out to 2040. Including these benefits within their CBA delivers an overall NPV of between £1.2bn and £5.2bn out to 2040.

The specific DSO activities that UKPN are planning to undertake include:

- Planning & network development – enhance DFES with greater granularity and accuracy, with 25% of LV underground network being monitored in real time by end ED-2. 2200 LV substations where constraints will occur during ED-2 will have real-time physical monitoring. Analytics will model 100% of the network. New investment planning process to enable independent decisions on investment. Flexibility first approach.
- Network operation - Visibility of LV network from 16 to 26%, Publish a forward view of constraints, and operational performance of DER, interact with ESO API interface, dispatch of flexibility units, operational planning
- Market development – publish operability framework, product/service requirements, creating more real-time markets, include stakeholder feedback through advisory board
- Will set up a separable DSO business unit with a DSO:DNO code to provide transparency.

The DSO expenditure shows a significant increase from ED1 levels. Overall, the DSO action plan appears well thought through with a clear view on the benefits that may be achieved.

Digitalisation – the UKPN digitalisation plan aims to deliver data reliability, accessibility and interoperability, through the following action areas:

- Data governance
- Data quality management
- Data integration
- Data storage
- Open data

The UKPN plan includes 13 costed IT investment projects, totalling £29m.

Overall, the digitalisation strategy may appear targeted at strengthening company control over data and enhancing performance, rather than opening up opportunities for external parties to seek additional improvements and delivering benefits sought by external network users as well as to improve company performance. Some of the boundaries between DSO activities and DNO activities seemed unclear.

DSO CVP – LV Flexibility – UKPN say they propose to keep customers energy bills as low as possible through stimulating greater residential customer participation in LV flexibility through the creation of commercially viable and accessible LV flex products, delivering consumers £12m of savings.

UKPN propose to develop accessible flexibility products to make it easy for small LCTs to participate in flexibility markets, and to stimulate an open market for flexibility services and

for curtailment obligations. The cost is £14m and benefits of £12m are expected from reduced network reinforcement costs.

While this is a welcome initiative, it would appear to be a business as usual activity as part of developing DSO flexibility markets to reduce network investment costs.

7. Whole system proposed strategy and ambition

We are seeking to understand the costs and benefits of whole system initiatives that companies plan to undertake in coordination with stakeholders across electricity and other sectors. We are seeking to understand how this exceeds business as usual benefits.

The UKPN plan outlines four main building blocks where whole system initiatives are planned. These are in addition to the whole electricity system benefits described in the DSO actions.

- Whole electricity – expand RDP, power potential, deliver 2GW of DER capacity, speed up connections, market LCT and develop an energy efficiency flexibility product
- Whole transport – upgrade 364k+ home supplies free of charge to accommodate LCT, add 106MW of network capacity for LCT, reduce street works cost/disruption. Plus UM to release another 345MW of capacity (1.46m homes). Enable EV charge points, add 7MW of capacity for motorway charging.
- Whole heat – market LCT/energy efficiency info to areas targeted for electrical heating; enable electrical capacity to off gas grid customers.
- Whole system planning – engage with all 116 local authorities, by 2024 provide them with planning tools; include whole system solutions in investment decisions. Evidence of looking at customer journey.

This list of potential initiatives mainly seems to maintain UKPN's existing activities in delivering LRE. While some qualitative comments are made about benefits, we think the plan should seek to quantify the potential benefits as well as costs, and also demonstrate how these will be delivered. We would also like to understand why UKPN consider some of these initiatives are best delivered by the DSO, rather than the DNO or by third parties.

Whole system CVPs – UKPN's proposals are set out below:

Public Charging - This CVP aims to unlock an additional 25% of public chargers, delivering customers without access to off-street parking in areas of poor air quality over 3000 charge points. UKPN say that these charge points are not likely to progress without their intervention due to market failures. This CVP delivers a net benefit to society of £28m over the next decade alone, a network benefit of £23m and a direct benefit of £1.9m to over 30,000 drivers.

UKPN say they will work with local authorities to provide charge points in areas where the market will not e.g where connection costs are high, access is difficult, or there are vulnerable customers. They will socialise a proportion of the connection costs (68%) to make these cost effective. Estimated cost is £31m and the benefits are £25m, plus a social benefit of £28m.

The demand assumptions behind this analysis seem to assume a high take up of EVs by vulnerable customers which may not be the case given the vehicle costs. This appears to propose a cross subsidy by electricity consumers to provide a local social benefit that might not deliver targeted outcomes.

Off-Gas grid – UKPN say that by 2028, 242,000 of UKPN off-gas grid customers will have benefited from coordinated programmes to efficiently deliver suitable capacity for them to accelerate their transition to electric heating and transport, delivering a net saving of £90m.

UKPN say they will work with community groups to deliver energy efficiency advice and then use a ‘dig-once’ approach to upgrade networks. The estimated cost is £40m and offers a saving of £90m compared with a green gas alternative.

This appears to assume that these communities will switch to additional electricity for heating rather than developing their own solutions such as flexibility management, or green gas resources, which may offer better solutions. The dig-once approach appears to be a business usual activity in delivering LRE.