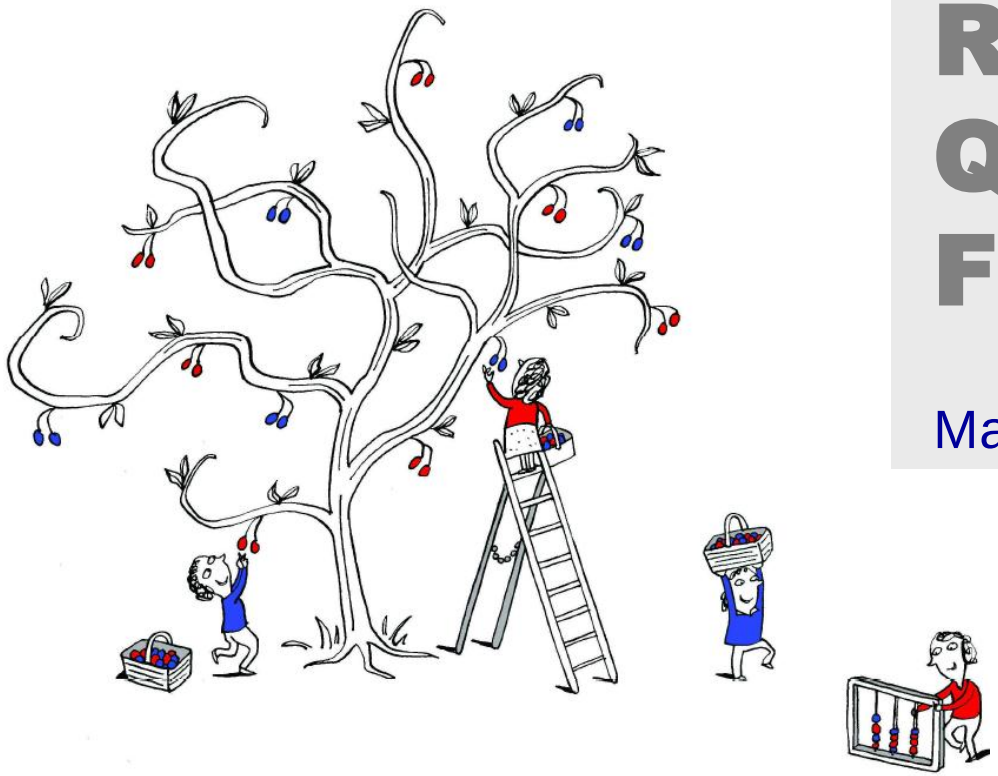
WPD Price Review WTP Research – Qualitative Findings

March 2012



WESTERN POWER DISTRIBUTION

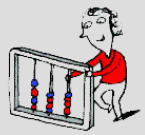
Serving the Midlands, South West and Wales

Accent

Agenda

- Context
- Key findings
- Next steps
- Key recommendations

Research context



A comprehensive programme of research

To inform future investment strategy

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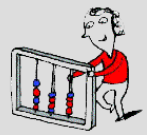
Deriving . . .

Willingness to pay values

Customer priorities for investment







Four key elements to the research

Across WPD's four licence areas

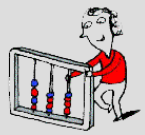
8 deliberative focus groups
Domestic customers

8 tele-depth interviews
Business customers

1200 Phone-post-phone SP interviews
Domestic customers

400 Phone-post-phone SP interviews
Business customers

This presentation relates to the findings from the extended focus groups with customers and the business tele-depths.



Sample structure

Domestic customers

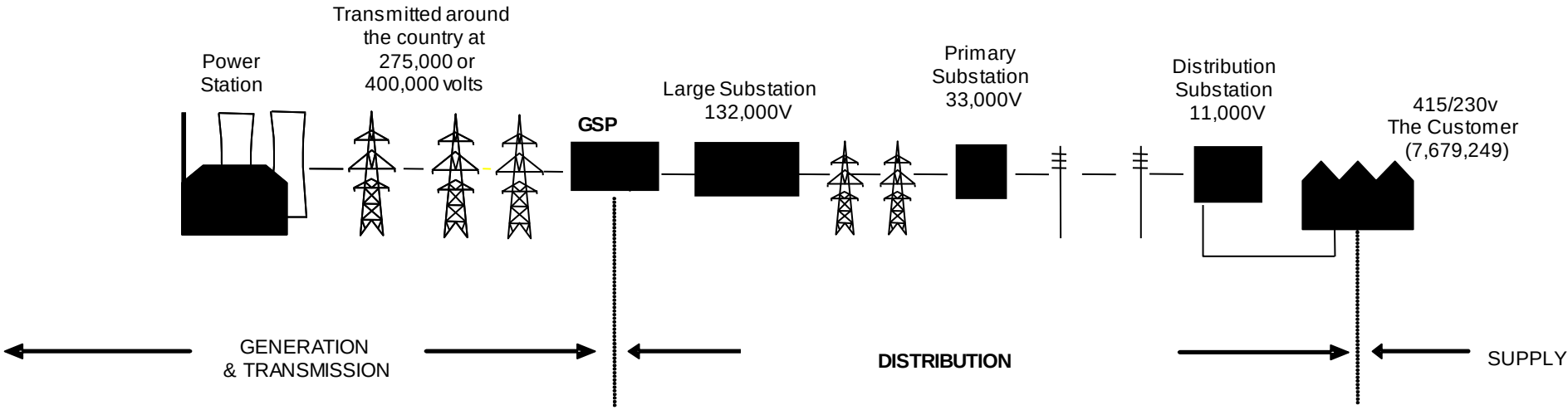
Group	Location	SEG	Age
1	Derby	C2DE	35-49
2		ABC1	50+
3	Exeter	C2DE	50+
4		ABC1	18-34
5	Great Malvern	C2DE	50+
6		ABC1	35-49
7	Abergavenny	C2DE	18-34
8		ABC1	35-49

Business customers

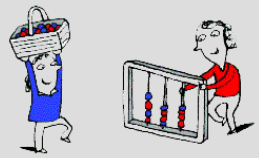
Depth	Sample Source	Business Size
1	East Mid	Medium
2	East Mid	Large
3	West Mid	Medium
4	West Mid	Small
5	South Wales	Large
6	South Wales	Small
7	South West	Small
8	South West	Medium

Understanding of what energy distributors do

Very little knowledge of what distributors role is amongst households and no understanding about the energy supply chain. Even when there are supply issues (ie power cuts), they still think it is the 'supplier' they deal with



Varied spectrum of understanding from businesses depending on their job role: some extremely knowledgeable of energy sector and how it works, others had only superficial understanding and handed more technical aspects to their specialist staff



Perceptions of WPD – Households

General comments
No awareness of WPD before group recruitment, although in Great Malvern, they had heard of Central Networks

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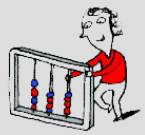
Positives

✓ When there was an issue (mainly power cuts) they were found to be helpful and efficient

Negatives

× None mentioned but this is more about not having had any dealings with WPD



Perceptions of WPD – Business

Some business customers were not fully aware of who WPD were and what you did, but of those who had direct experience – **overall, positive feedback**
Awareness dependent on having requirement to contact them for some reason.

Positives

- ✓ When there was an issue (mainly power cuts) they were found to be helpful and efficient
- ✓ Helpful with new connections

'I've had 2 or 3 dealings with WP over the years and they've always been very, very good. Unfortunately we had a total loss of power at a previous pub 10 years ago and in that scenario they were brilliant. Turned up, got us going, God knows where they got the electricity supply from for that but they sorted it out anyway.'

Business customer

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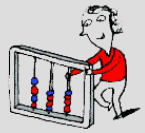
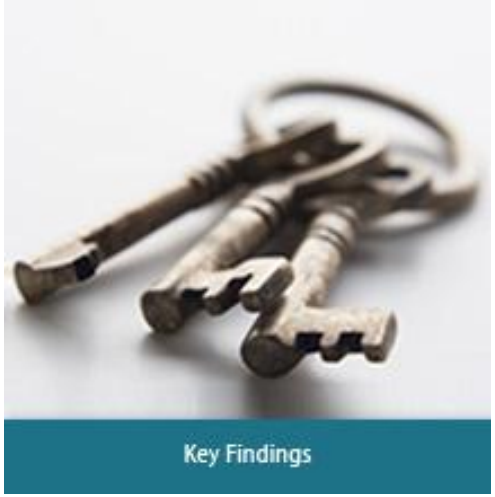
Negatives

- × Feeling that the onus of responsibility is on the customer to chase up, eg new connections experiences hindered by no clear information or timelines from WPD, customers had to keep chasing
- × See a need for dedicated contact numbers and account managers specifically for business needs

Key findings



Priority areas for investment
- summary

Highest priority

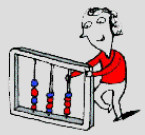
Lowest priority

Power Cut Response – Quick restoration of supply and accurate & timely information
Asset Replacement – Future proofing

Leakage
Maintenance – Resilience
Innovation

Environment – climate change impacts
Undergrounding
New Connections

Customer contact



Power Cuts – General

"I like it but it's not logical, is it? You don't really want to say, "I've got an outage at the moment"".
Domestic Customer

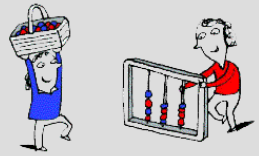
- Most respondents had some experience of power cuts, and this was comfortably the preferred phrasing
- Some evidence of contingencies in place eg care home that had patients requiring constant oxygen supply, agreement that WPD provide emergency generator supply
- Appreciate power cuts are inevitable, and not always the fault of WPD
- Overall, shorter cuts were easier to manage for them as there was still potential to keep their business running. Plus if they have notice to enable them to put contingencies in place

Households recognised that the number of power cuts had decreased over the last few years

For some businesses, it could draw their business to a halt for others a short cut wasn't insurmountable.

INVESTMENT PRIORITY - HIGH

- Because of customer experience, this was high on the list of priorities
- ✓ Knowing the timescale is key – when they are happening if possible; how long they are going to last – an absolute; human response preferred but recorded message ok
- ✗ Not bothered about an apology & reassurances about not happening again are unrealistic

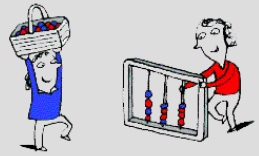


Power Cuts – Asset Replacement

- Asset replacement not that well understood by household respondents
  - too many connotations with 'seizing assets' or financial assets
  - 'Infrastructure' is preferred to 'asset' and we suggest using it for SP survey
- Future proofing is broadly understood but could be more simply put
- People preferred the future proofing option as most forward thinking approach

I don't think the general public would understand that, would they? For me it's replacing infrastructure
Domestic Customer

- Due to their commercial perspective, businesses all understood the concept of asset replacement; future proofing was considered self explanatory
- Major issue – they all have to use their profits to reinvest in the equipment for their business, so not comfortable that the cost of an energy company doing so is going to come from the customer



Power Cuts – Asset Replacement: Showcard F

The majority of electricity network was installed in 1940s, 50s, 60s and therefore some is reaching the end of it's life and needs replacing

Asset replacement: maintain business as usual

- Most cost effective solution is to replace assets like-for-like.
- **Down-side:** if things change dramatically in the future like-for-like won't be suitable e.g. increased electricity demand (needs bigger cables with more capacity) or more local generation such as solar panels (cables that can handle 2-way power flows)

Asset replacement: future proofing

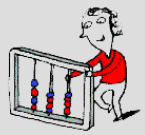
- Could invest ahead of need – e.g. larger cables in anticipation that demand may increase. Electric vehicle charging infrastructure in anticipation of electric vehicle uptake, etc.
- **Up-side:** If WPD gets it right, cheaper now to replace assets that will last another 40+ years and be suitable for changes that might happen.
- **Down-side:** get it wrong and WPD over invests for circumstances that never happen

SHOWCARD F

- Clear and understandable
- More clarity needed about why consumers have to finance this
- Showing the difference in cost of maintenance vs future proofing would help

INVESTMENT PRIORITY

- Domestic – High
- Business - High

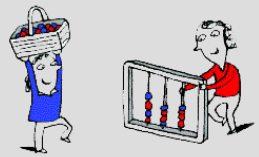


Resilience

- Some experience in terms of extreme weather affecting electricity supply
- Spontaneously, people had little idea about what WPD could do in this area
- Limited knowledge in this area - some had heard of undergrounding, one or two had heard of tree trimming and no-one had heard of coating wires
- Only the most 'technical' in energy were able to offer any ideas beyond undergrounding
- However, recognition that something should be done, even if they don't know what, as they think the infrastructure is ageing

Remote control switch gear

- Some general understanding, but should definitely include the definition in the SP survey
- Positive response, adapting new technology, but amongst businesses, an undercurrent of cost concerns



Resilience – Showcard G

AUTOMATION / NETWORK SWITCHING

- During a power cut, sometimes it is possible for WPD to reconfigure the network to re-route supplies (remotely) and restore power quicker.
- It does this by installing remote control switches on its high voltage network, which allows it to carry out a process called 'automation'.
- WPD has an on-going programme to increase the amount of automation – in last 12 months WPD has introduced 223 new automation schemes, meaning it now has a total of 1348 on circuits across its region.

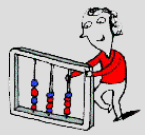
SHOWCARD G

- Clear and understandable
- In first bullet, how much quicker?
- But relevance of last bullet re number of schemes is unclear – needs more comparison with previous 12 months and ultimate number aiming for

INVESTMENT PRIORITY

- Domestic – High
- Business - Medium

'You don't want to be waiting for a man in a van to come and go through the circuit breaker.'
Business customer

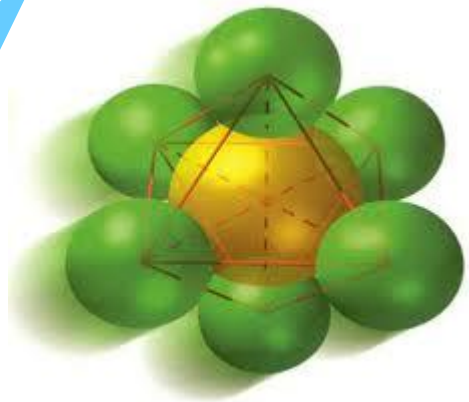


Leakage

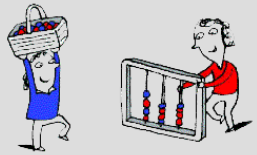
- General acceptance that green issues have moved up in the agenda and need to be tackled, but no spontaneous specifics offered.

- Residential consumers had no idea about leakage and felt this information was rather alarmist; not only is there an environmental risk but a perceived risk to health & safety

"It does say about big environmental impact, what does that mean? I'd like to know a bit more about that. Is it stuff that's leaking into the crops, eventually we're eating it"?
Domestic customer

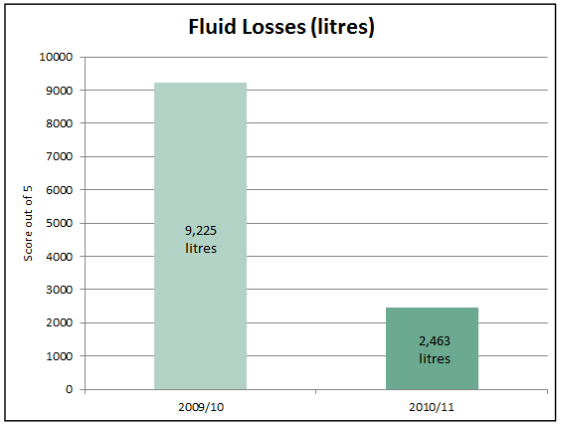


- Little business awareness of leakage prior to research, with exception of those truly educated in energy – the most engaged offered the most useful feedback



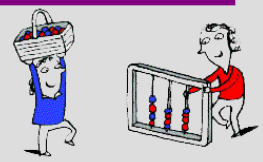
Leakage – Showcard H

- In the past, very high voltage underground cables used an insulating oil inside the cable (WPD now use solid plastic insulation).
- These cables are normally very reliable, but sometimes due to a fault, or damage by third parties digging the street, this oil may leak out.
- In total there are 214 km of fluid filled cables that WPD owns (out of around 216,000 km in total).
- It can cost around £2m to replace 1km of cable
- When there is a leak it can have big environmental impact. Losses from WPD's fluid filled cables can vary from year to year.
- Improvements: PFT technology – WPD has been using this new technique for pinpointing leaks. As fluid leaks out of the cable it is detected by mobile instruments that can localise the leak.



SHOWCARD H

- Not well understood. Not sure what the numbers are relating to and have no benchmark to help them understand the maths; don't leave them to guess
- Graph and text didn't relate to each other well enough
- What is PFT? Recommend losing the last bullet point
- Would like to know more about the potential *'big environmental impact'* – what are they? How long will they last?



Leakage – Showcard I

SF6 GAS LEAKS

- Some equipment contains a greenhouse gas for insulating called SF6. Limited alternative technology globally.
- This greenhouse gas is 23,000x carbon equivalent of CO2.
- When equipment deteriorates through age, or it is damaged by a third party, gas can leak, so WPD carefully monitors its SF6 equipment on a regular basis.
- In 2009/10 losses from SF6 equipment was 295kg representing 1.14 % of our bank.

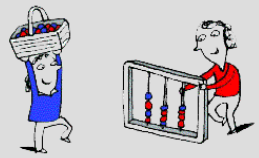
'You'd need to know what it does and what is does to the environment and how it might leak out.'
Business customer

"1.14% of my bank is worded wrong: of our bank account, of our bank losses, of our bank expenditure?"
Domestic customer

SHOWCARD I

- Limited alternative globally for what?
- Not sure what the abbreviations mean and the numbers aren't benchmarked against anything eg what does 23,000x = in car numbers
- 1.14% of our bank did not mean anything
- Only those with expert knowledge could take on board the consequences here

INVESTMENT PRIORITY
Domestic – High
Business - Medium



Undergrounding

- Understand what it is, think of it as a sensible investment, but the cost seems prohibitive and there is concern about the cost effectiveness of undergrounding given that they are 5 times more expensive than overhead cables
- Accept that there should be some form of prioritising as to which areas should have undergrounding
- Because of the cost, feeling that overhead cables should be replaced when at the end of their asset life rather than just replacing them on aesthetic grounds

'I think it's probably in the category of things it will be nice to do, but personally I understand why it doesn't always happen.'
Business customer

"It would be nice if most electricity would be underground instead of on poles; that would cost a lot and our costs would go up horribly".
Domestic customer

Undergrounding – Showcard J

UNDERGROUNDING IN AREAS OF OUTSTANDING NATURAL BEAUTY

- Improve visual amenity
- Placing cables underground for long distances, particularly in rural locations, is up to five times more expensive than overhead cables.
- Underground cables are less vulnerable to severe weather but can be difficult to locate and repair faults.
- Have to strike a balance.
- WPD has four National Parks and 12 Areas of Outstanding Natural Beauty (AONBs) in its region.

SHOWCARD J

- Helpful information
- Clear and easily understood
- Some cynicism about pictures – blue skies
- Could clarify actual cost difference in second bullet rather than multiple of 5

INVESTMENT PRIORITY

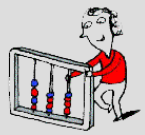
- Domestic - Medium
- Business - Medium

Flood Mitigation

- People thought that this was a good idea and that WPD should be investing in this issue
- 'Mitigation' is not the right terminology – 'Protecting the infrastructure against the risk of floods' is more understandable
- However, people did not really have any idea about what WPD could do to invest in this area
- When presented with Showcard K (overleaf), people saw the benefit

"I think we all said that this should be a given, that they should be protecting their assets…"
Domestic customer

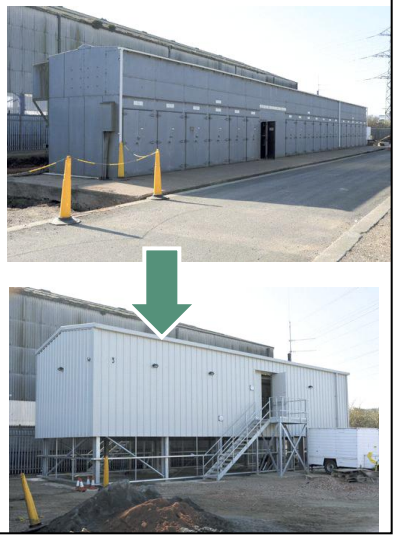
- Made sense to a few businesses: again, those not really experienced or knowledgeable struggled to come up with anything other than what they had seen on the showcards

Flood Mitigation – Showcard K

FLOOD MITIGATION

- For example, in Exeter WPD came up with an innovative design solution to protect its equipment from the risk of flooding.
- The £1m project elevated city substations to remove the risk of flooding from the nearby River Exe.
- The building has been designed to withstand a one in a 1,000 year's flood depth of 2.8 metres.
- After the devastating floods of June 2007 and other serious flooding events, flood resilience of essential infrastructure sites has become a national priority and is something WPD takes into account when planning new developments.

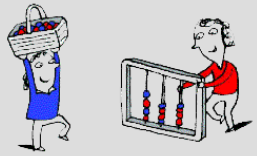


'I think you have to look at, you have to do an analysis of what's the actual risk of flooding and an analysis of what sort of disruption it's going to cause and then look at the best ways, the most cost effective ways, to mitigate those.'
Business customer

SHOWCARD K

- They understood the information and thought the pictures were helpful
- Suggest moving the 4th bullet to the top to help context
- Business - too far removed from their experience for them to prioritise accurately, not a tangible reality

INVESTMENT PRIORITY
Domestic – High
Business – Medium



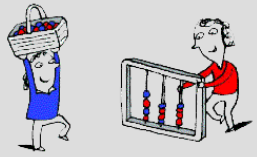
Innovation

"I think every company does it, you take it for granted that they're doing it"
Domestic customer

"I don't understand that…the summer's day, what's that got to do with anything? A cool summer's day?"
Domestic customer

- People felt that WPD should be innovating, but this was more about good practice – *'all companies should be innovating*'
- It was also about becoming more efficient and then passing those savings on to consumers
- Some experience of solar panels
- Difficult for people to comment on the actual examples provided as people found them hard to relate to eg Dynamic Asset Rating

- Some suggestions of investment into two-way electricity flow and reducing/managing demand from business customers
- Did nothing for most, not really aware of what could be done and not knowledgeable enough to assess the information



Innovation – Showcard L

Some areas WPD is focusing on:

Substation monitoring

- Key to many of the decisions to run network is first understanding the actual performance of the system. At the higher voltages WPD has wide-scale monitoring. At the lower voltages, system monitoring is less common and networks tend to run passively.
- WPD is installing detailed substation monitoring at some of its sites, to understand effects of new technologies, and help understand how its assets perform on a day to day basis.

Integration of solar panels

- Big increase in solar panels throughout the UK.
- New challenge for networks. Networks designed to carry electricity one way from generators to customer properties.
- Solar panels mean WPD can experience two-way power flows, back through its network. Intermittent weather also means the power output varies.

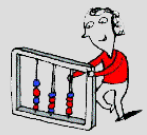
Dynamic asset rating

- Equipment are rated as to how much power they can carry, due to assets getting hotter the more electricity passes through them.
- In past, WPD prescribed 2 seasonal ratings: summer (when the ambient air temperature is high) and winter (when the air is cooler).
- This simplification means that at times WPD does not get the most out of its assets – e.g. cool summer's day. Dynamic asset rating takes into account conditions such as the air temperature and wind speed. This can then be used to calculate a real time rating for the assets, allowing WPD to run its transformers, lines and cables more efficiently.

SHOWCARD L

- Struggled with the detail and amount of information here; too far away from their experience for them to evaluate clearly, not a tangible reality
- Too technical; not enough about how things could be improved

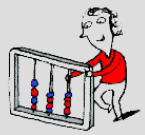
INVESTMENT PRIORITY
Domestic - Medium
Business - Medium



Innovation – Showcard M

- Residential customers thought some of the wording was quite woolly & ambiguous eg facilitating and climate change risk assessment – needs to be more tangible in order to assess

- **Trial technology and innovation to facilitate low carbon networks** – only understood by those with technical energy knowledge, left the rest confused
- **Climate change risk assessment** – clear to all
- **Facilitating electric vehicle charging infrastructure** – most paraphrased it back to moderator, but could work out what it was about
- **Facilitating the connection/uptake of local renewable energy sources** – too much technical speak
- **Facilitating the renewable heat incentive through installing more low voltage network capacity** – meaningless to most – renewable heat? Low voltage?



New Connections

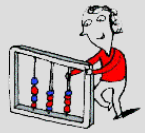
- Little resonance with residential customers
- More enthusiasm about renewable sources of energy and suggest WPD impact on this aspect is tested if at all, but must be accompanied by customer benefits

- Majority of businesses that had experience of this were satisfied with the service
- Any problems were all focused around the onus being on the customer to make the contact and chase
- Suggestions to provide an email service, currently perceived only to be available by phone; would like written confirmation of their reference number
- No tangible timings provided, don't know when it will happen or how long it would take – need more information; more tangible service promise

'Actually arriving when they say they are going to arrive and do what they are going to do, and let you know actually when it's going to be finished, and have it finished when they say it's going to be finished.'

Business customer

INVESTMENT PRIORITY
Domestic - Low
Business - Medium

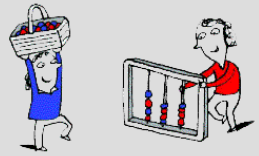


Quality of Customer Contact

- Very little domestic experience of customer contact & most thought it was with the 'supplier' anyway
- More communication seen as a good thing
  - Incidents eg texting
  - Accountability of how money is invested; a short & simple annual statement with achievements vs plans

- Businesses generally happy apart from the arduous new connections process
- Businesses feel they should have their own direct communication channels – separate to domestic customers
- Preferred communication methods – email between 2-4 times a year, informing them of changes/developments local/specific to them/their supply

INVESTMENT PRIORITY
Domestic - Low
Business - Low



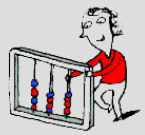
Willingness to Pay

- Surprisingly, they are realistic and accepting that they should be paying, particularly considering some negative undercurrent about financing when discussing individual aspects
- Many domestic customers were not willing to pay more, while others were prepared to pay an extra 5-10%; others mentioned sums between £10-£50 a year
- 1-2% was perfectly acceptable and some were willing to go as high as 10% - particularly if they worked out the daily cost to them vs having no power cut
- However, clear caveats exist:
  - They need to know that they will gain benefits from the investment
  - The increase needs to be in the context of limited shareholder returns and limited company profits at the same time

"I'd be prepared to pay a little bit more if you could guarantee to me that we wouldn't have any of those (power cuts)"
Domestic customer

"If they're committing to the future proofing, I wouldn't mind paying then"
Domestic customer

'Well I think they should be making a profit on what they are doing and they should be investing their profit into these improvements, why they have got to keep putting prices up to cover the improvements? I can't do that how I run my business, because people wouldn't come.'
Business customer



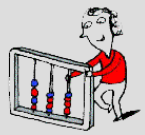
Willingness to Accept

- Deterioration in service for a discounted price was rejected by all – needed more information as to what form this would take and for how long
- Those who are more technically minded can see ways to reduce their demand, but they would need to plan for this and have guarantees in place if doing so

'I could plan to live without power from the system if you could tell me when I needed to live without power, so for example I could switch this building off overnight, I could re-configure it so that it requires no power between 7 in the evening and 7 in the morning but I need to be guaranteed that at 7 in the morning when I need the power it comes back on.'
Business customer

"Service is everything, in whatever industry you're in, you want a constant electric, gas, water supply. You don't want, you say oh, your electric's going to go off once a week but you can pay £10 a month less"
Domestic customer

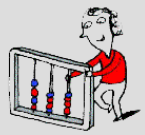
'I'm struggling to think what sort of service reduction you could have, more power cuts, what else in terms of providing the network, what else do you do?'
Business customer



Summary of Customer Priorities

- **Domestic**
- High
  - Power cuts: number, rapid re-connection (ie duration), accurate & timely information, shorter versus longer cuts
  - Asset replacement
  - Resilience
  - Leakage
  - Flood protection
- Medium
  - Undergrounding
  - Innovation
- Low
  - New connections
  - Customer contact

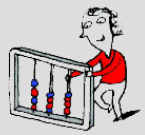
- **Business**
- High
  - Power cuts: dedicated number, rapid re-connection, accurate & timely information, shorter versus longer cuts
  - Asset replacement
- Medium
  - Resilience
  - Undergrounding
  - Flood protection
  - Innovation
  - New Connections: dedicated number, account manager, email comms & idea of timings
  - Leakage
- Low
  - Customer contact



Next steps

WPD to finalise attributes & levels and amend wording

- To fit a 3 lower level exercise design
- Typically 12 attributes + cost
- Typically 2-4 levels per attribute, eg:
  - **Attribute:** duration of cuts
  - **Levels:**
    - 2 hours longer than average
    - average (base)
    - 1 hour less than average
    - 2 hours less than average
- Where wording not well understood, or amends suggested, showcard material needs revising



Pilot survey

- 100 pilot domestic interviews & 60 pilot business interviews:
  - phone-post/fax/email-phone (PpP) methodology
- To test:
  - the recruitment process
  - the clarity and flow of the questionnaire
  - the appropriateness of the language used
  - the accuracy of all routings
  - ease of use of the show material
  - the stated preference design and understanding of the stated preference exercises
  - the interview duration
  - the survey hit rate
- Meeting to discuss feedback and recommendations for mainstage

Main stage survey

- 1200 PpP stated preference interviews with domestic customers:
  - 300 per area
- 400 PpP stated preference interviews with business customers:
  - 100 per area
- Formal presentation of the findings, to include customer priorities and willingness to pay (WTP)

Key milestones

TASK	ACTION
• Finalisation of attributes & levels to be measured: **by Friday 30 March**	WPD
• Design & programming of questionnaire: **w/c 2 April**	Accent
• Approval of questionnaire: **10 April**	WPD
• Pilot & review: **w/c 9 & 16 April**	Accent
• Main fieldwork: **w/c 23 April – w/c 14 May**	Accent
• Analysis: **w/c 21 & 28 May**	Accent
• Final presentation: **w/c 4 June**	Accent