Visual Impact Provision Acceptability Testing - North Wessex Downs

Technical Report

National Grid

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Document evolution

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Executive summary

Introduction

National Grid has undertaken consumer research to measure the acceptability of the North Wessex Downs Area of Outstanding Natural Beauty (AONB) undergrounding project. The research used a combination of qualitative and quantitative research methods to provide a rounded view on the level of consumer support. Results from a nationally representative online survey quantify the level of support for the project along with the reasons for its acceptability or otherwise, and a series of online focus groups provide wider insight on consumer perceptions of the project and its impacts. The combined research approach ensures that National Grid has a comprehensive understanding of consumers' view on the North Wessex Downs project and the overall Visual Impact Provision (VIP) programme.

Research topics

The acceptability research explored the following topics with consumers:

- Understanding of National Grid and its role in electricity transmission and the overall structure of the electricity sector, attitudes towards electricity transmission infrastructure, respondent use of natural areas like AONBs and National Parks, and opinions on the impacts of overhead lines in those natural areas
- Support for the North Wessex Down AONB undergrounding project and the main factors considered by consumers when assessing the acceptability of the project. This includes, for example, the bill impact on transmission costs along with the local impacts of the project in question; and
- Views on the overall VIP programme and the benefits of undergrounding are weighted against the costs, both in terms of household bill impact and the wider effects of these projects.

Approach

The online survey was developed and iteratively tested through a series of cognitive interviews. Draft content was also reviewed and commented on by National Grid. The survey material was further tested via a pilot launch (105 respondents total). Minimal changes were required between the pilot and main survey implementation. A total of 2,000 household consumers across England, Wales and Scotland completed the survey[1]. Sampling quotas were specified based on ONS Census data to be nationally representative.

This survey was complemented by eight online focus groups (90-minute sessions) with a total of 58 participants. Groups reflected a mix of age ranges, socio-economic groups and locations. The focus group material and discussion guide were aligned to the survey – helping to ensure that the findings from the sessions provide added depth and context to the main survey results.

[1] While National Grid does not operate the electricity transmission network in Scotland, the survey sample included Scotland as the bill impact of the VIP and the North Wessex Downs AONB undergrounding project would affect bill-payers in Scotland. It was made clear to respondents that Scottish bill-payers would pay in part for English and Welsh undergrounding project, while Scottish undergrounding projects would be paid for in part by English and Welsh bill-payers.

Headline findings – Consumer support for North Wessex Downs project

There is a good level of consumer support for the North Wessex Downs AONB VIP project. Overall, 76% of consumers stated that the undergrounding project and its bill impact (£0.04 per year for the average bill-payer from 2023-2047) was "acceptable" or "very acceptable".[2] Support was highest amongst:

- Higher socio-economic groups (80% acceptable versus 12% unacceptable);
- Those that were familiar with the North Wessex Downs (89% acceptable);
- Those 55+ year in age (79% acceptable); and
- Those in the East Midlands (82% acceptable) and the South West (80% acceptable) regions.

The lowest support levels of support were found amongst:

- Those in Wales (69% acceptable versus 17% unacceptable);
- Lower socio-economic groups (68% acceptable versus 13% unacceptable); and
- Those that were struggling to pay bills (67% acceptable versus 19% unacceptable).

These findings show there is clear support for the project across socio-economic and demographic segments as well as different regions.

The main reasons stated for supporting the project were:

- The affordability of the transmission bill impact (50% of consumers that supported the project);
- The local improvement in terms of the visual impact once the project was completed (42%);
- The project location (25%); and
- The impact to the landscape (24%).[3]

The main reasons stated for not supporting the project (12% of the survey sample) were:

- The overall project cost and individual bill impact (46% of consumers that did not support the project);
- The potential impact to wildlife during construction (33%);
- The impact to the landscape from construction (24%); and
- The environmental impact of the project (17%).[4]

[2] These percentages are based on the full survey sample of 2000 respondents.

[3] Respondents were allowed to select multiple reasons. Impact to landscape is differentiated from visual impact by being "from construction", and in the positive case is due to the landscape being returned to its original state after undergrounding.

[4] n=242 for respondents that did not support the project. Respondents were allowed to select multiple reasons.

From the focus group sessions, it was apparent that the impact to wildlife and the impact to the landscape from construction were important considerations for many consumers - even amongst those that supported the project. There were also some consumers (13% of the survey sample) who were undecided on their support for the project. The most cited reason was that the project was not important (41%), followed by wanting more information about the project (33%).[5]

Wider findings – Consumer support for overall VIP programme

There was also a good level of support for the overall VIP programme. In total, 75% of consumers stated that the overall VIP and its bill impact (£0.27 per year for the average bill-payer from 2023-2047) was "acceptable" or "very acceptable". Consumers were also asked the maximum they would be willing to pay for additional undergrounding projects across England and Wales. Overall, consumers were willing to pay a relatively modest amount for a wider programme of projects. Nevertheless, the median (approx. £2 per household per year) and (mean) average (approx. £7 per household per year) values exceed the expected bill impact of the full VIP. Reasons given in support or opposition to the wider VIP programme generally mirrored those for the North Wessex Downs project.

Conclusions

The main findings from the research show that there is a good level of support for the North Wessex Downs AONB undergrounding project, as well as a good level of support for the overall VIP programme. In both cases, more than 7 in 10 consumers expressed that the NWD project and the VIP programme were acceptable. There are some groups, such as those struggling to pay their current bills or respondents from lower socio-economic groups that found the proposed North Wessex Downs project less acceptable than the sample average; however, even amongst these groups, acceptability was still found to be well over 50% with a high degree of confidence.

Based on the level of support, the survey sample size, and the context provided by the focus groups, these results are appropriate for use in the business case for the North Wessex Downs AONB project. Feedback for both aspects of the research indicated that consumers were engaged with the discussion topic and survey, and that they gave valid and considered responses when considering their support for the North Wessex Downs undergrounding project. Moreover, there was positive feedback from consumers about the research process. Focus group participants unanimously stated that it is important for National Grid to get consumer feedback on projects like the North Wessex Downs undergrounding, and survey respondents also indicated that the survey topic areas were interesting and educational. This indicates the bill-payers welcome National Grid including them in the project planning process and suggests that similar research should be undertaken on future projects of a similar nature.

[5] Of those that were undecided (n=249).

Contents

1. Introduction

National Grid has undertaken a programme of consumer research to test the acceptability of the North Wessex Down Area of Outstanding Natural Beauty (AONB) undergrounding project ("NWD project"). This research follows previous consumer acceptability studies carried out by National Grid for other undergrounding projects, including locations in Snowdonia, the Peak District, New Forest, and Dorset. This report sets out the approach, results, and findings of the consumer research undertaken to test the acceptability of the NWD project. It also reports findings in relation to the overall Visual Impact Provision (VIP) that is effective from April 2021 – March 2026.

1.1 Background and context

National Grid owns, manages, and maintains the electricity transmission network in England and Wales[6]. These operations are regulated by Ofgem, which sets price controls under the RIIO (Revenue = Incentives + Innovation + Outputs) framework. The funds earmarked for undergrounding projects under the Visual Impact Provision (VIP) are determined as part of the RIIO framework. National Grid has identified several potential undergrounding sites through a Landscape and Visual Impact Assessment.[7] Of these sites, 12 subsections of overhead line were identified by the Stakeholder Advisory Group for progression to the next phase of work. The section of overhead line addressed in this report is near the town of Devizes in the North Wessex Downs AONB, and is one of these 12 sites.

The North Wessex Downs AONB undergrounding project is approximately 4.4 km long and consists of 11 pylons. The site was selected as it has several 'special qualities', which include a unique landscape, scenic views, and historic ancient settlements.[8] A local stakeholder meeting was conducted in February 2020 with the general public and several key groups in the area of Devizes and North Wessex Downs, and reactions to the proposed undergrounding project were generally positive according to the Sixth Annual Impact Provision Report[9].

National Grid must submit a business case for the North Wessex AONB VIP project to Ofgem and, as part of this, demonstrate that the project has consumer support. Previous research in April 2018 found high levels of support for the Snowdonia, Peak District, New Forest, and Dorset VIP projects. However, the previous research was conducted before the COVID-19 pandemic and the significant energy price increases in 2020 and 2021, both of which could be drivers of change in customer sentiment. It is therefore important to test consumer support for this type of project in the current circumstances faced by consumers and their household budgets.

[6] National Grid also owns and operates the high-pressure gas transmission system in England, Wales and Scotland, but as the project and the VIP programme are only relevant to the electricity transmission portion of National Grid's business, the research programme and this report will not address any consumer knowledge or opinions for the gas portion of the business.

[7] Gillespies Land Use Consultants, "*Landscape and Visual Impact Assessment of Existing Electricity Transmission Infrastructure in Nationally Protected Landscapes in England and Wales – Technical Report",* October 2014.

[8] National Grid, *"North Wessex Downs AONB Options Appraisal Study",* August 2015.

[9] National Grid, *"Visual Impact Provision Sixth Annual Report",* June 2019.

1.2 Research objectives

The purpose of this research was to gather evidence on the level of consumer support for the NWD project, the reasons for that support and to examine how the level of support varies across different segments. The main aspects of the research and evidence compiled in this study are:

- Support for the NWD project and the main factors considered by consumers when assessing the acceptability of the project. This includes, for example, the overall bill impact for electricity transmission along with the local impacts of the NWD project;
- Consumer understanding of National Grid and its role in electricity transmission and the overall structure of the electricity sector, attitudes towards electricity transmission infrastructure, use of natural areas like Areas of Outstanding Natural Beauty and National Parks, and opinions on the impacts of overhead lines in those natural areas; and,
- How consumers view the overall Visual Impact Provision programme, and how consumers weight the benefits of these projects against the costs, both in terms of household costs and the wider effects of the undergrounding projects.

1.3 Report structure

The remainder of this report is structured as follows:

- Section 2: Approach – outlines the design and development of the focus group and survey materials, along with the sampling approach for both the qualitative and quantitative elements of the research.
- Section 3: Sample profile and consumer attitudes – summarises the participant/respondent profile for the focus groups and surveys, along with findings in relation to familiarity and views on natural areas, National Grid and the visual impact of electricity infrastructure.
- Section 4: Support for the North Wessex Downs AONB undergrounding project – presents the main results for the level consumer support for the NWD project, including reasons for consumers' responses.
- Section 5: Support for the overall VIP - presents the main results for the level consumer support for the VIP project, including reasons for consumers' responses and an assessment of consumer willingness to pay for further undergrounding projects.
- Section 6: Conclusions – key summary points for the acceptability of the VIP Business Plan.

The main report content is accompanied by the following support annexes:

- Annex 1: Focus group topic guide and showcards;
- Annex 2: Survey questionnaire;
- Annex 3: Onscreen appearance of survey;
- Annex 4: Focus group summary report;
- Annex 5: Survey summary statistics; and
- Annex 6: Econometric analysis and results.

2. Approach

This section summarises the methodological approach for the qualitative and quantitative research phases and describes the structure and content of the research materials.

2.1 Methodology

There is limited industry guidance from Ofgem and industry stakeholders on how consumer acceptability testing should be carried out. Previous research carried out by National Grid, though, provides a template, including the preceding price control VIP acceptability testing research conducted in 2018/19 and the RIIO-T2 electricity transmission acceptability testing research carried out in 2018[10]. Consistent with the previous research examples, a combined qualitative and quantitative research approach was taken, to provide a rounded view of customer support for the NWD project and wider VIP.

This research was conducted in stages and followed an iterative process, where the findings of materials produced in each stage helped to inform the stage that came after. There were three main research phases, which were carried out between November 2021 and February 2022, along with a reporting phase:

- **Phase 1 - Design and testing:** the purpose of Phase 1 was to confirm the evidence need for National Grid and to prepare and test the materials that would be used in the survey and focus groups. Initial drafts of research materials were reviewed by National Grid for accuracy and completeness of information and were tested with a small sample of respondents. The testing ensured that the survey and focus group materials provided respondents with sufficient information to furnish considered views on the acceptability of both the project and the overall VIP programme. It also probed consumers' views of the energy industry, energy bills and National Grid, which helped identify topics to be included in further iterations of both the survey and the focus groups.
- **Phase 2 - Focus groups**: these were carried out following the development and testing of the research materials to capture qualitative evidence on consumer support for the NWD project and wider VIP. The groups were moderator led discussions, aided by prompts and visual materials, and included polls to gauge opinion and feeling towards various elements of the project and programme. This qualitative research phase was conducted before the survey launch to provide an additional round of testing and input for the quantitative portion of the research.
- **Phase 3 – Survey**: this was launched as a pilot with 105 respondents, to verify that respondents were answering with survey in a logical and consistent manner and were able to provide useful and valid input. The pilot also provided a sense-check of the initial findings that could be compared against the sentiments and opinions gathered during Phase 2. Minimal adjustments were required before the full survey launch, which gathered 2,000 responses in total, and met national representative quotas to within 5 percentage points.

[10] See: hiips://www.nationalgrid.com/electricity -transmission/document/121706/download

2.2 Design and testing

The research materials were tested via a set of ten cognitive interviews conducted in December 2021. The interviews were conducted as online interviews via Zoom. The purpose of the interviews was to:

- Test whether consumers understood the research and its purpose;
- Understand what and how much contextual information was required by customers to provide a view on the acceptability of undergrounding projects;
- Test the layout and appearance of the research materials;
- Test how much effort was required to complete the survey;
- Assess the relevance of visual materials;
- Assess how easy or difficult it was to complete the survey, and to assess the clarity of instructions; and
- Understand the thinking behind how consumers made their choices.

The main findings from the cognitive interviews are summarised in Table 2.1.

Table 2.1: Cognitive testing findings

Aspect	Main findings for development of research materials
Understanding of research aims	Overall, people understood what the survey was about and what they were being asked to do. Participants felt they were able to meaningfully respond to most questions, in particular the acceptability question.
Clarity of language	Some adjustments to language were necessary throughout the cognitive testing, including avoiding technical language in favour of day-to-day terminology.
Length of survey	The survey was found to be an appropriate length, and more participants were able to complete the survey in fifteen minutes.
Motivations for responses	The primary motivation for participants accepting the NWD project was the project cost. Participants found the annual bill impact to be minimal, which was an expected finding based on the previous research.
Survey structure	Participants generally found that the survey structure flowed well, and that information was provided as it was needed.
Survey presentation	A few iterations were required on material presentation, both to provide more graphics and imagery on some showcards, and to reduce images and text length on other showcards. Generally, the text in the survey was found to be too long or in too large of blocks, and the survey required trimming to easily readable and understandable.

2.3 Qualitative research

The qualitative research was implemented via a series of online focus groups in January 2022. The aim of these sessions was to gain insight into consumer views and opinions on the NWD project, and to gather qualitative evidence as to the level of support and the reasons for supporting or not supporting the project. Learnings from the focus groups helped finalise the content of the subsequent quantitative research phase.

Focus group format

The focus groups were 90 minutes long and hosted on the VisionsLive platform. A short pre-read document was issued to participants before the sessions, and a set of showcards were used along with a script (topic guide) during the session to provide information to the participants. The topic guide also provided prompts for the moderator to ask questions and probe participant's opinions throughout the session. For reference, the focus group research materials are provided in Annex 1.

Broadly, the focus groups materials covered the following topics:

- Views and knowledge of the energy industry, including National Grid, Ofgem, and National Grid's business planning;
- Familiarity and perceptions of natural areas and impact of electricity infrastructure;
- Opinions and acceptability of the NWD project and VIP programme, including perceived pros and cons;
- Wider views and concerns about energy bills; and,
- A session debrief, including participant ratings of the session content and importance of the topic.

Several polls and exercises were used to measure opinion and attitudes during the sessions (Figure 2.1). The results of these polls and exercise, along with participant quotes from the discussions are documented as appropriate in Section 3 and 4.

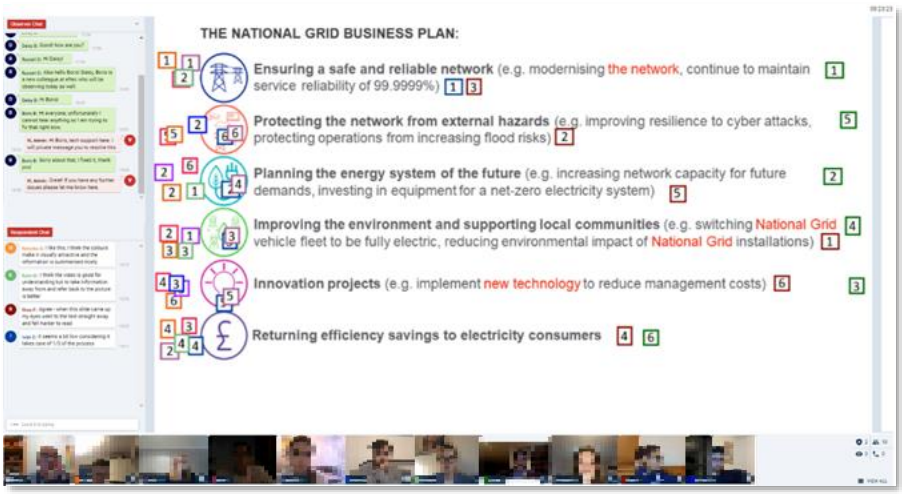

Figure 2.1: Online focus group – example screenshot[11]

[11] Screenshot of an exercise held during the focus groups where participants gave rankings for the importance of different components of the National Grid business plan.

Focus group composition

The eight focus groups were regionally based. Participants were recruited from a range of socio-economic and demographic backgrounds to ensure different circumstances were reflected. All participants were household utility bill-payers, with the exception of one group that was held with "future consumers" to gauge opinion amongst those that would be bill-payers in the coming years. This future bill-payers group was included in the sessions given the long time period for the bill-impact from the NWD project.

A total of 58 consumers participated across the eight sessions, with an average of 7 per group. The full focus group schedule is provided in Table 2.2.

Table 2.2: Focus group schedule

Focus group	Location	Urban / rural	SEG	Age	No. participants
1 2	Bath	Urban Rural	C2DE ABC1	18-45 46+	7 7
3 4	Wrexham	Rural Suburban	C2DE ABC1	46+ 18-45	5 6
5	Newcastle	Suburban	ABC1	46+	8
6	Loughborough	Rural	C2DE	46+	8
7	London	Urban	Future customers, (non-bill payers) 18-25		10
8	Glasgow	Urban	ABC1	46+	7

2.4 Quantitative research

The quantitative research was conducted via an online survey. Annex 2 provides the full survey script, and Annex 3 shows the onscreen appearance.

Survey format

The online survey followed the structure shown in Table 2.3. The upfront content introduced respondents to the overall research topic, the energy sector and National Grid, before describing the VIP and specific NWD project. Direct acceptability questions were asked for the NWD project and overall VIP, with follow-up questions probing reasons for responses after each. The survey concluded with supplemental respondent profile questions.

Table 2.3: Survey structure

Section	Survey Content
Section A: Screening and quotas	• Respondent screening and quotas questions • Gender, age, socio-economic group, region, use of energy and energy bill • Current energy bill and current financial support for energy bills
Section B: Warm-up - National Grid, the services it offers, and the Visual Impact Provision	• Views on energy infrastructure, energy bills, and the ability to pay bills • Explanation of National Grid's transmission role, the composition of energy bills, and introduction to the VIP • Attitudes and use of National Parks and AONBs
Section C: The NWD AONB undergrounding project	• Introduction to NWD area and National Grid's plans for the undergrounding project. • Familiarity with NWD and NWD project acceptability
Section D: Follow-up questions for NWD	• Reasons for acceptability/unacceptability and the perceived value for money of the project.
Section E: Visual Impact Provision	• Overall acceptability of the VIP
Section F: Visual Impact Provision follow-up question	• Willingness to pay for undergrounding projects, and reasons for or against undergrounding projects
Section G: Respondent profile	• Location, household size, employment, education, and income • Disability, Priority Services Register • Feedback on survey
Section H: Survey close	• Link to additional information on Priority Service Register

Acceptability questions

Customer support for the NWD was asked in terms of the acceptability of the project and its impact on consumer bills, which was specified as £0.04 per household from 2022 - 2047. Customer support for the overall VIP was asked in terms of the acceptability of the programme and the maximum possible bill impact, which was specified as £0.27 per household per year from 2022 - 2047. The estimated bill impacts for both were provided by National Grid.

Before being asked to "vote" on their support of the NWD projects, respondents were given a range of information about the location, project details, expected impact, construction and timeline (Figure 2.2). The information on the bill impact was presented alongside a reminder of the respondent's current electricity bill and the approximate amount for electricity transmission within that as part of the acceptability question (Figure 2.3).

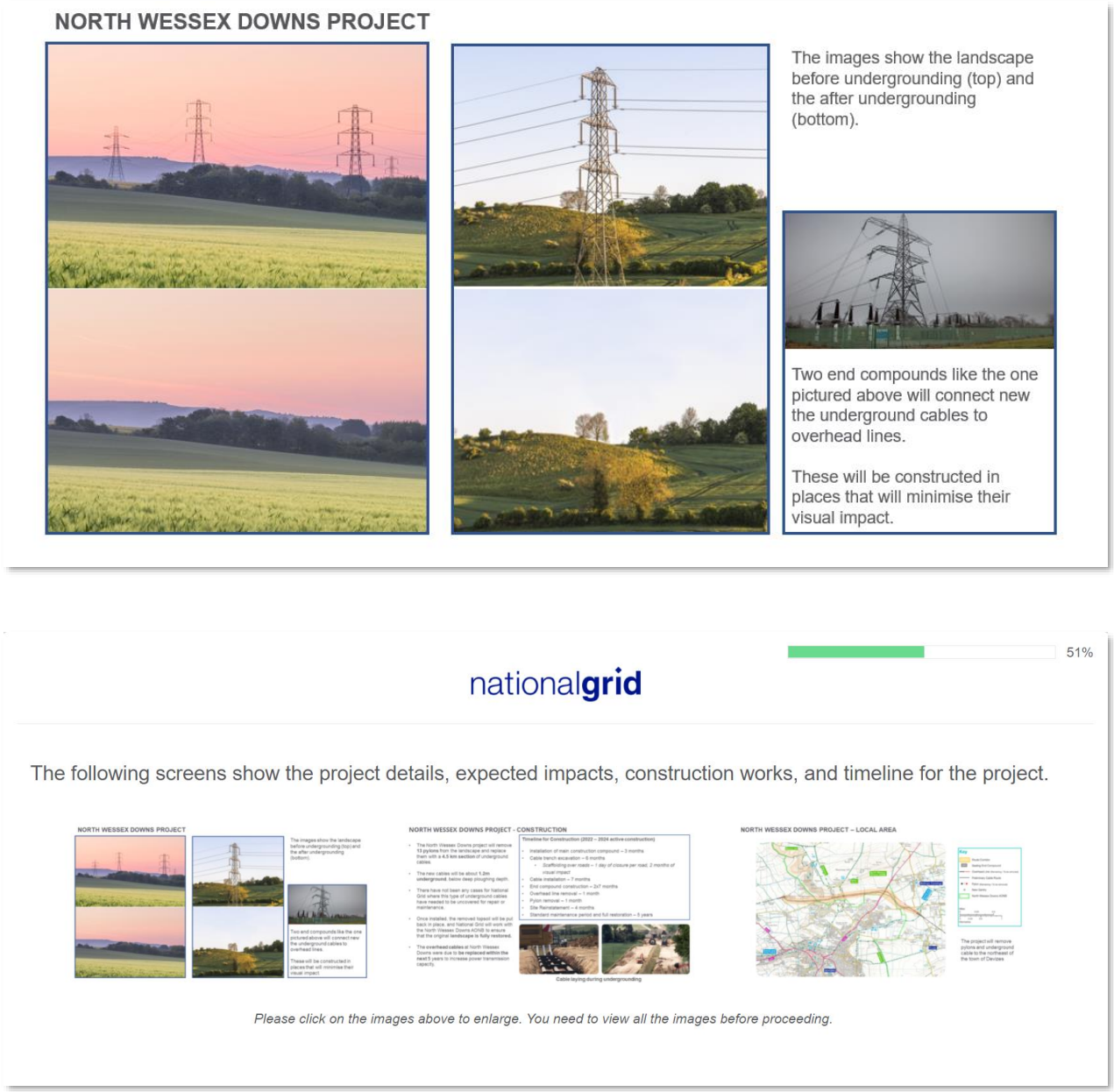

Figure 2.2: North Wessex Downs AONB project information (as presented on screen)

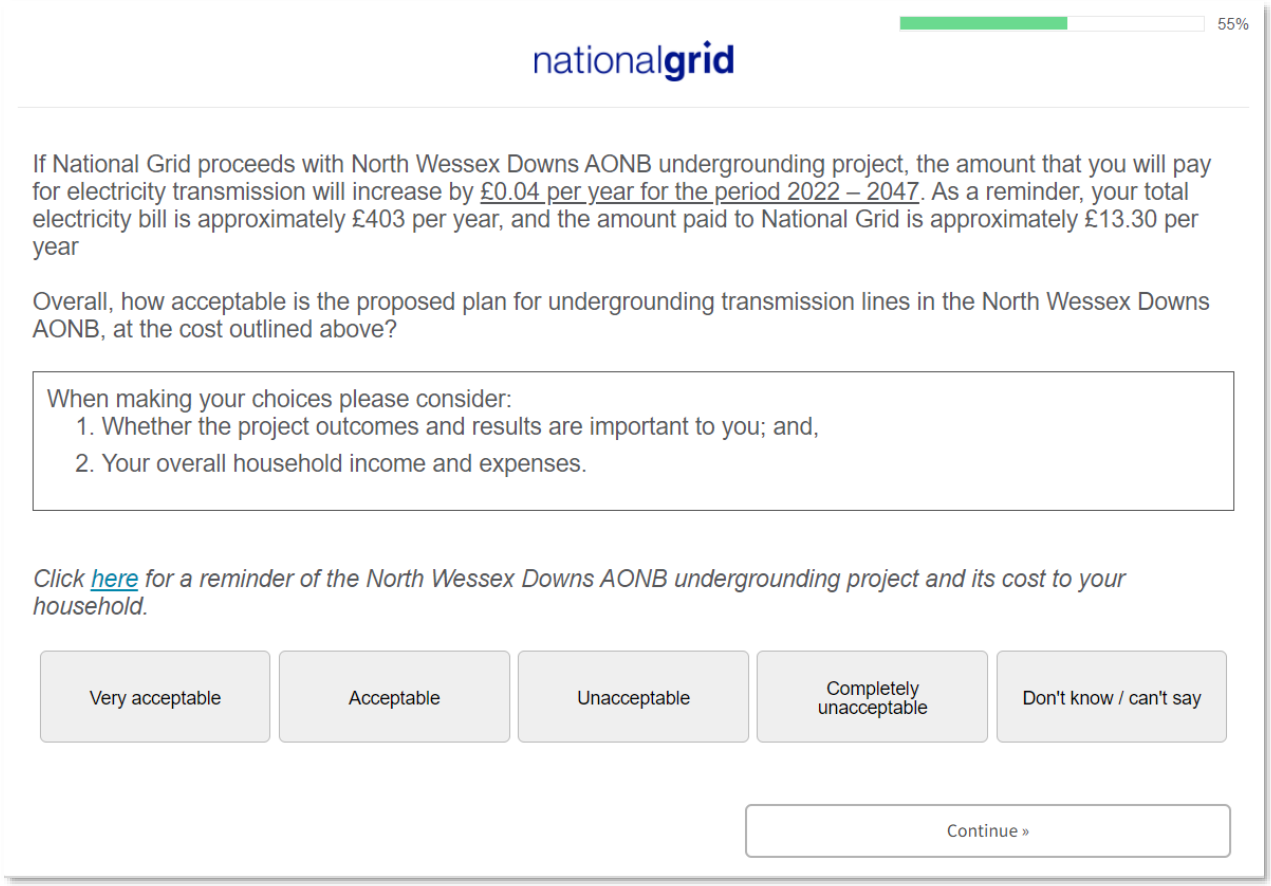

Figure 2.3: North Wessex Downs AONB acceptability question (as presented onscreen)

The VIP was described in terms of candidate locations and the overall funding pot for 2021 – 2026 (Figure 2.4 and Figure 2.5).

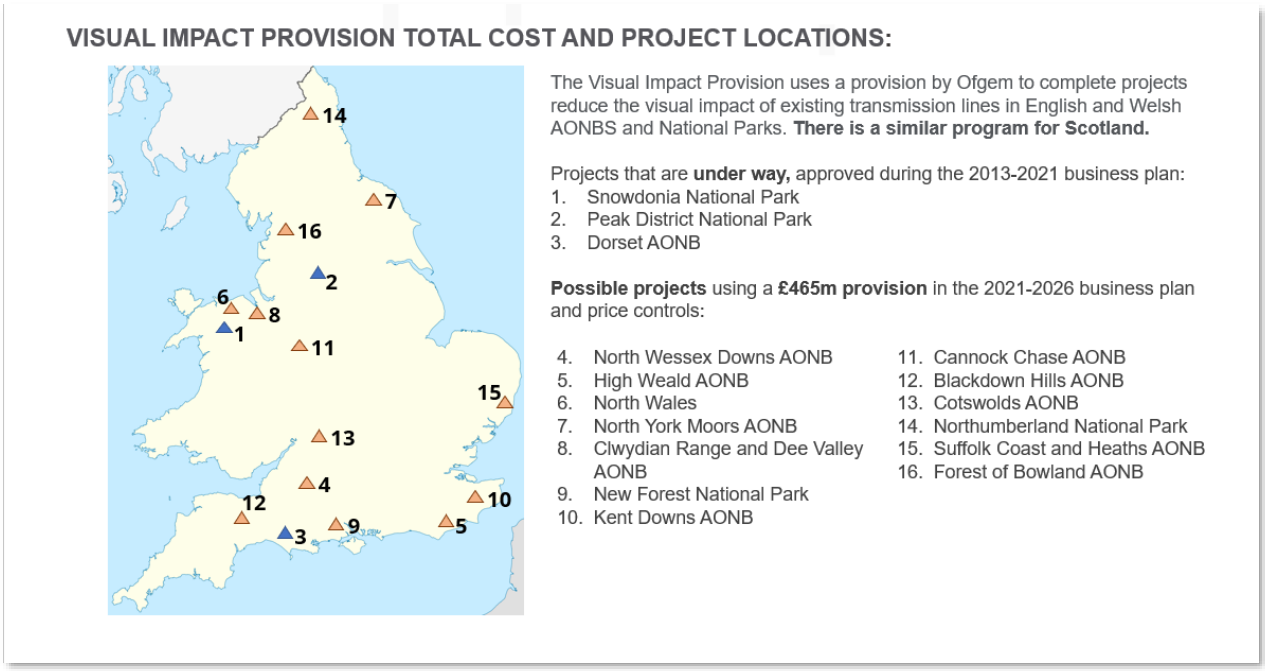

Figure 2.4: VIP locations and information (as shown onscreen)

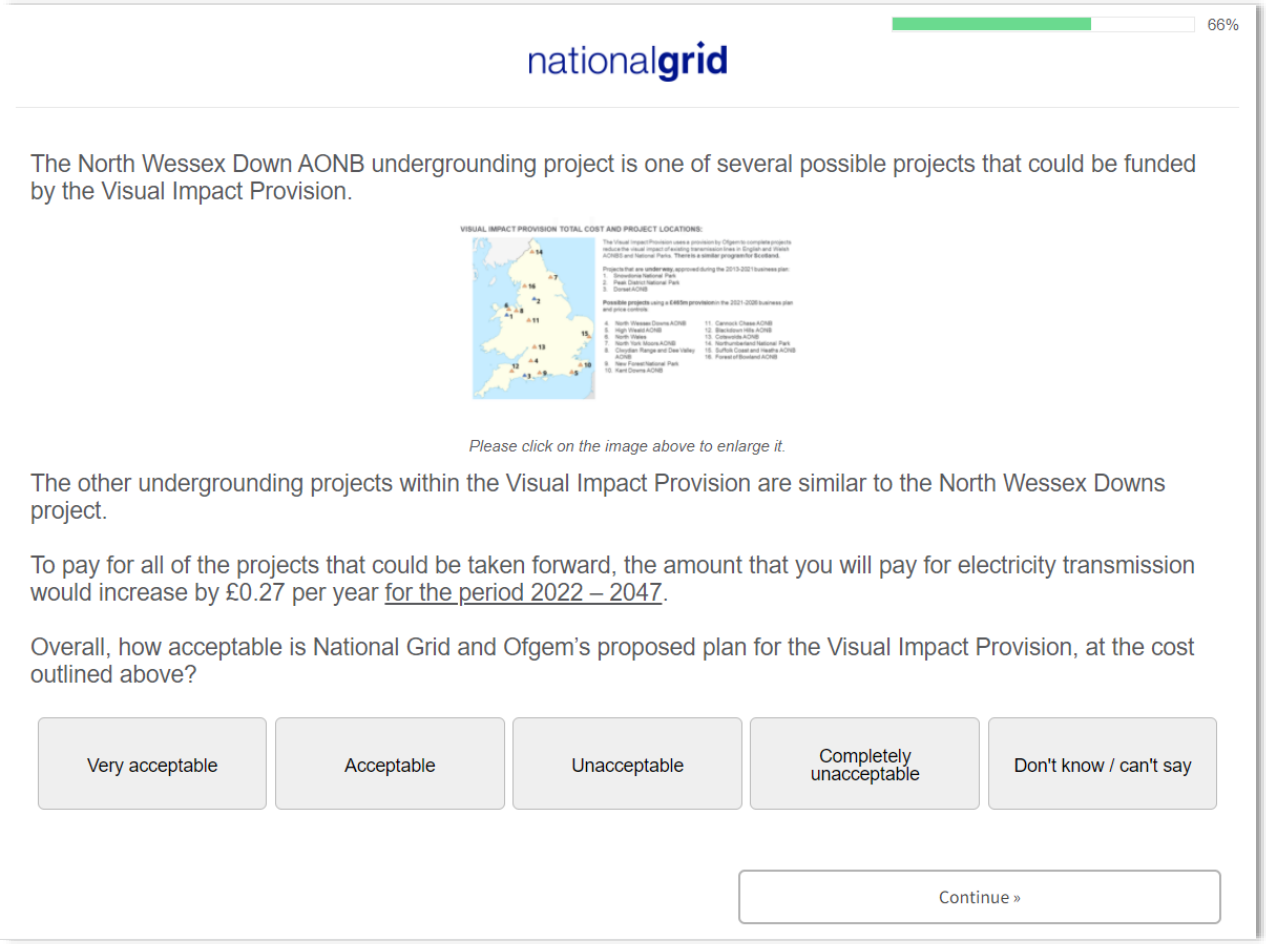

Figure 2.5: VIP acceptability question (as shown onscreen)

Sampling approach

This objective of the quantitative research was to provide nationally representative results for consumer support and the acceptability of the NWD project. Sampling quotas were based on national statistics for socio-economic group (SEG), gender, and age (Table 2.4).

Table 2.4: Survey sample vs sampling quotas for consumer survey

Socio-economic group	**Survey Sample**		**Quota**
AB	462	23%	22%
C1C2	1040	52%	52%
DE	498	25%	27%
Gender	**Count**	**Percentage**	**Quota**
Male	1028	51%	49%
Female	969	48%	51%
Age	**Count**	**Percentage**	**Quota**
18-24	211	11%	14%
25-34	348	17%	16%
35-44	323	16%	15%
45-54	359	18%	16%
55-64	301	15%	15%
65+	458	23%	23%

Source: * England and Wales - 2011 Census data; † England and Wales – mid-2018 data[12]

[12] hiips://www.ons.gov. uk/census/2011census/2011censusdata

3. Sample profile and consumer attitudes

This section reports findings from the survey including the sample profile and knowledge and attitudes towards: (i) National Grid and the electricity industry; (ii) natural areas such as AONBs and National Parks; and (ii) energy infrastructure, especially within natural areas. The quantitative results are supported by quotes and general findings from the focus groups. Annex 4 provides the summary report of the focus group discussions. Annex 5 provides full summary statistics for the survey.

3.1 Survey respondent profile

A nationally representative sample of 2,000 respondents was obtained in the quantitative phase of the research. The average survey duration was 16 minutes. Figure 3.1 shows the geographical distribution of respondents and Figure 3.2 provides the breadown by region.

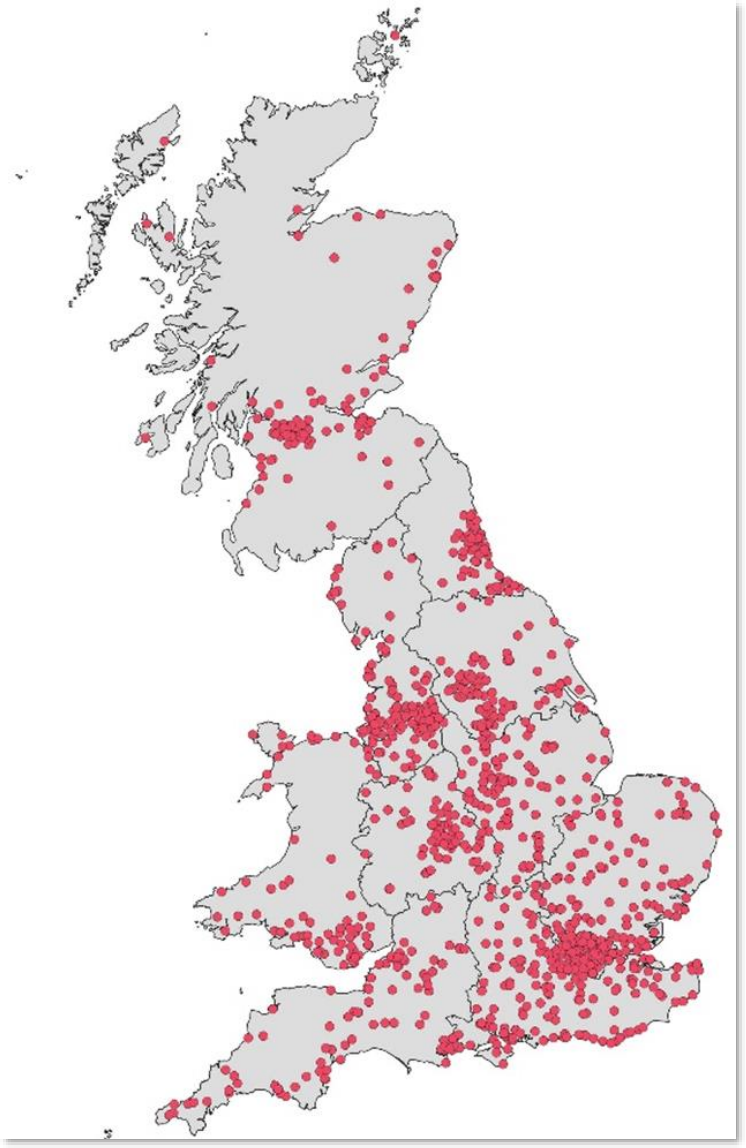

Figure 3.1: Geographic distribution of sample

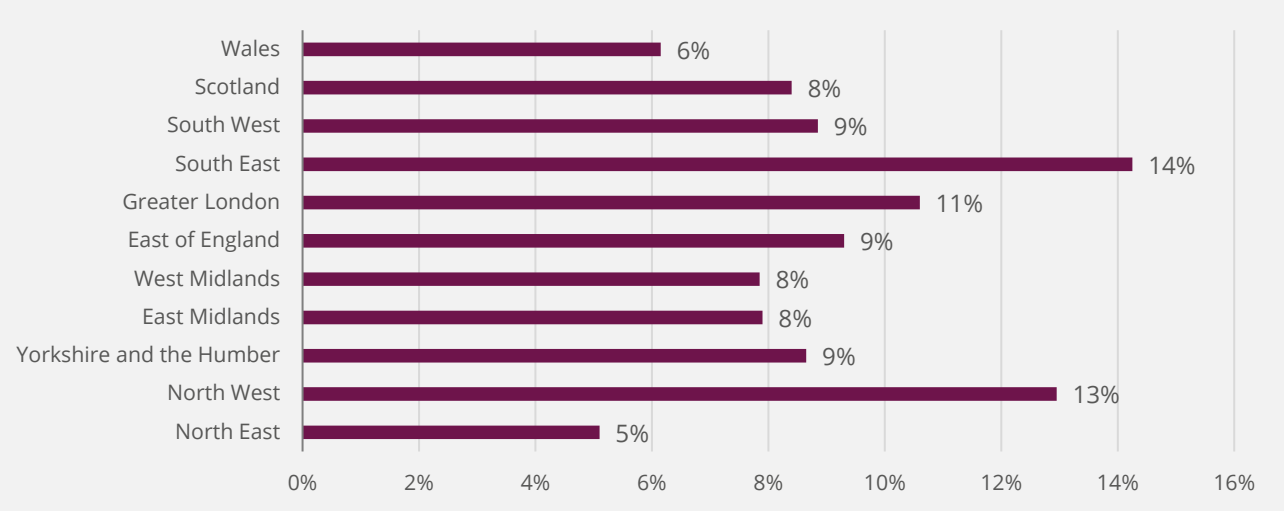

Figure 3.2: Sample profile by region (n=2,000)

Sample representativeness

Survey sample quotas were specified for age, gender, and socio-economic group (Section 2.4). Figure 3.3 shows the survey sample age profile versus the quota, Figure 3.4 shows the survey sample gender profile, and Figure 3.5 show the survey sample socio-economic group (SEG)[13] profile. The sample demographic profiles were all within 3 percentage points of their quotas.

		n	%
18 - 24		211	11%
	Quota		14%
25 - 34		348	17%
	Quota		16%
35 - 44		323	16%
	Quota		15%
45 - 54		359	18%
	Quota		16%
55 - 64		301	15%
	Quota		15%
65+		458	23%
	Quota		23%
Total		**2000**	

Figure 3.3: Sample age profile (n=2,000)

[13] Socio-economic group (SEG) definitions: A - Higher managerial, administrative, or professional; B - Intermediate managerial, administrative, or professional; C1 - Supervisory or clerical and junior managerial, administrative, or professional; C2 - Skilled manual worker; D - Semi or unskilled manual worker; E - Casual worker, dependent on state pension only, or dependent on state welfare

		n	%
Female		969	49%
	Quota		51%
Male		1028	51%
	Quota		49%
Total		**1997**	

Figure 3.4: Sample gender profile (n=1,997)

		n	%
AB		462	23%
	Quota		22%
C1C2		1040	52%
	Quota		52%
DE		498	25%
	Quota		26%
Total		**2000**	

Figure 3.5: Sample socio-economic group profile (n=2,000)

Respondent income and average electricity bills

Figure 3.6 shows the sample profile in terms of household income. Average self-reported net total household income was approximately £2,500 per month (approx. £30,500 per year), with a median range of £2,167-£2,666 per month and a mode range of £1,601-£2,166 per month. Overall, these results are broadly consistent with the national median figures, which in 2020 were £31,400 per year or £2,867 per month[14].

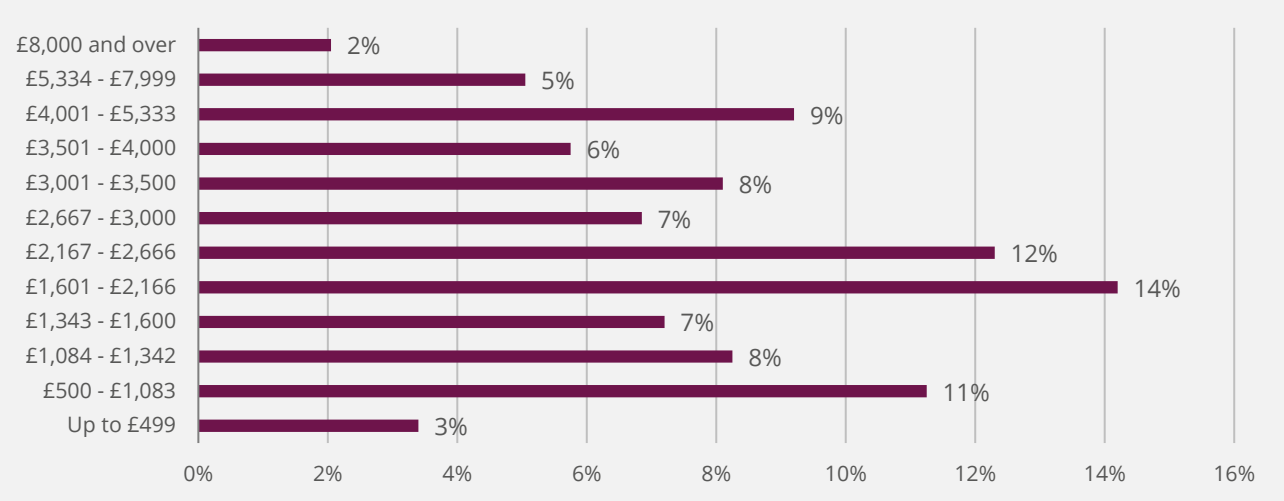

Figure 3.6: Total net monthly household income (n=2,000)

[14] https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/householddisposableincomeandinequality/financialyearending2021#:~:text=Main%20points,(ONS)%20Household%20Finances%20Survey.

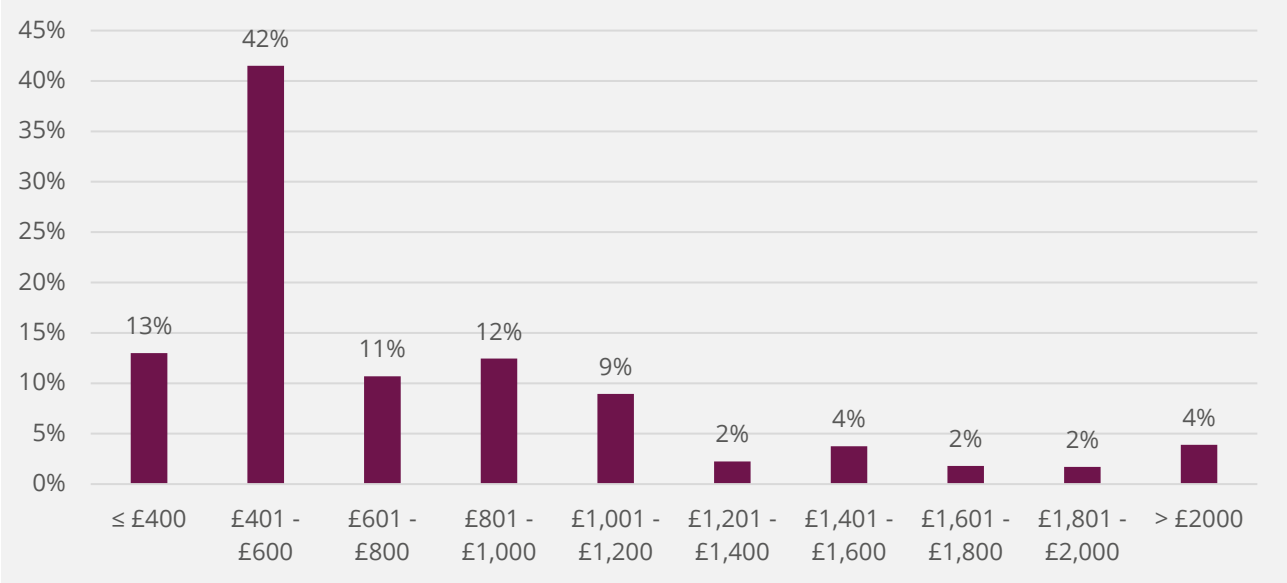

Figure 3.7: Annual household electricity bill/year (n = 2,000)

Figure 3.7 shows the profile of survey respondent annual electricity bills. The (mean) average bill amount was around £830 per year.

Consumers in potentially vulnerable circumstances

Survey respondents were also asked a series of questions to identify households that were potentially in vulnerable circumstances. Overall, approximately one half of respondents reported receiving some form of financial assistance through one of the four support mechanisms listed in Figure 3.8. Respondents who receive a cold weather payment (11%) or a warm home discount (13%) are more likely to be in vulnerable circumstances as these payments are reserved for the elderly or those at risk of fuel poverty. The Warm Home Discount is a direct bill discount for low-income and pensioner households and the cold weather payment is a payment for similar households during particularly cold weather[15]. The winter fuel payment is a scheme that is automatically received by those on a state pension and is available to all households with a resident over the age of 65. In 2019, around 11.6 million households received support through the Winter Fuel Payment programme, out of approximately 27.8 million in total in the UK (roughly 42%).

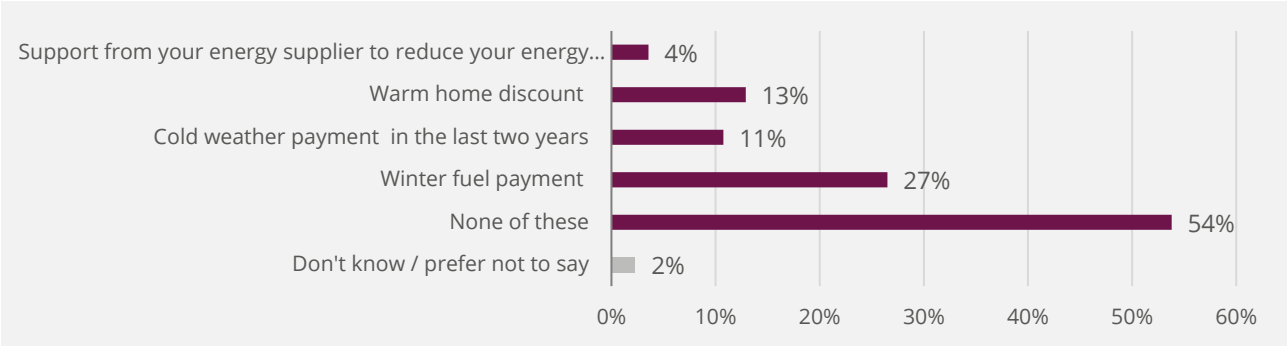

Figure 3.8: Respondents receiving support for energy bills (n=2,000)[16]

[15] Warm home discount - hiips://www.gov.uk/the -warm-home-discount-scheme; cold weather payment - hiips://www.gov.uk/cold -weather-payment; winter fuel payment - hiips://researchbriefings. files.parliament.uk/documents/SN06019/SN06019.pdf

[16] Respondents could state more than one form of support (therefore responses do not sum to 100%).

Just over 17% of the respondents noted that they, or someone in their household, had a long-term illness or disability (Figure 3.9).

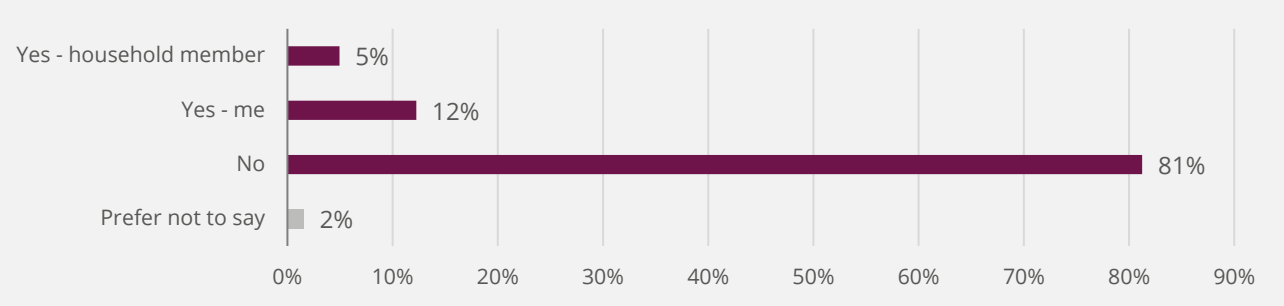

Figure 3.9: Long-term illness/disability in the household (n=2,000)

One third (34%) of the respondents were aware of the Priority Service Register (PSR), of which 47% (16% of the total sample, 325 in total) were registered.

Lastly, 40% of the respondents indicated that they regularly encounter difficulty when paying household bills (Figure 3.10) and a quarter of the sub-sample who find it difficult to pay bills stated they are regularly in arrears on their electricity bills (Figure 3.11). Compared to the RIIO-T2 electricity transmission acceptability testing research[17] the proportion of consumers reporting that they were in arrears increased by 11 percentage points. This is consistent with observations from the focus groups that energy bill increases were putting increased financial stress on households, and in line with recent energy prices rises.

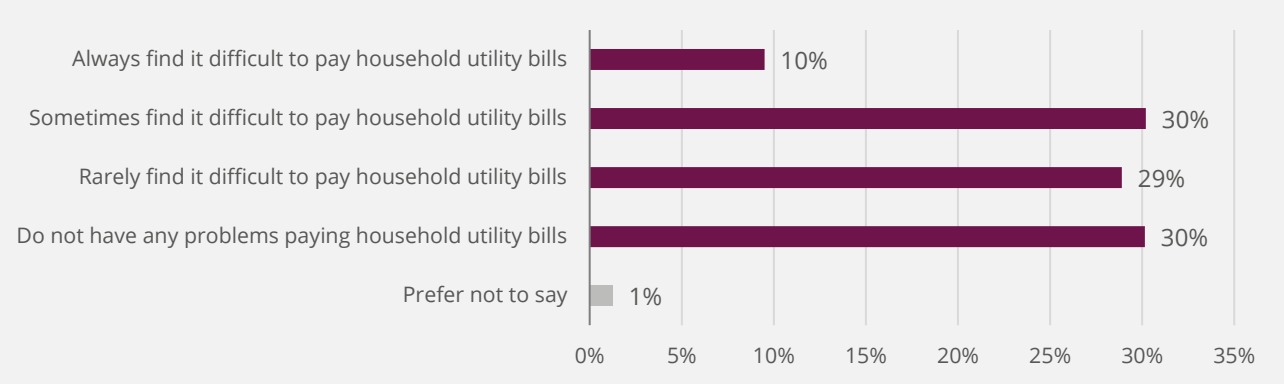

Figure 3.10: Difficulty paying bills (n=2000)

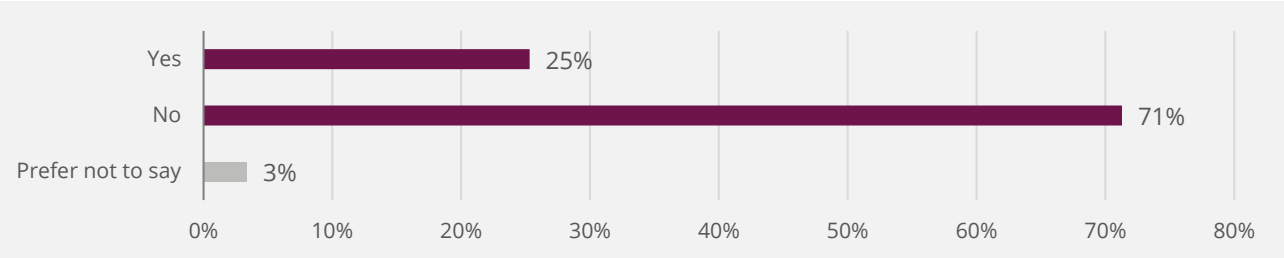

Figure 3.11: Respondents regularly in arrears (N = 794)

[17] See: hiips://www.nationalgrid.com/electricity -transmission/document/121706/download

3.2 Views on National Grid and the energy industry

Focus group participants' prior understanding of the energy industry structure within the UK - and National Grid's specific role within that structure - was low. The initial discussion in the sessions included an explanation of the industry structure and the composition of household bills. When presented with a breakdown of the average electricity bill in the UK, participants were routinely surprised by how small National Grid's percentage of this bill was (Box 3.1).

Box 3.1: Focus group participant understanding of National Grid

"I literally know nothing about it at all. All I know is that I have my energy supplier who I pay, and that's all I know" Bath – Urban, C2DE, 18-45

"It's interesting the importance of Ofgem… monitoring the energy companies to make sure they're giving the right level of service, and I suppose preserving competition as well; I picked that element up, to make sure as customers we're treated fairly" Bath - Rural, ABC1, 46+

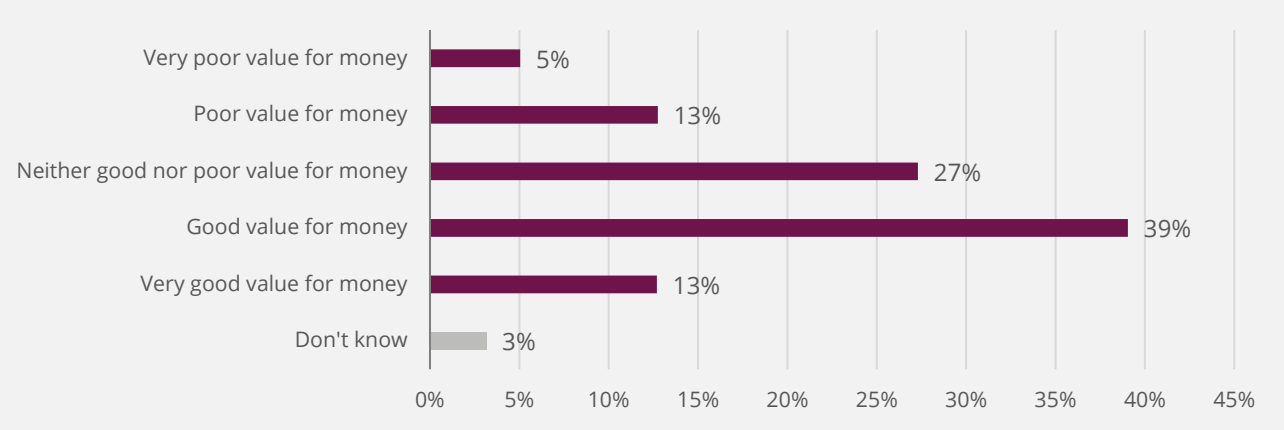

Figure 3.12: Respondents' opinion of value for money of current electricity bill

Around half of the survey respondents considered their current energy bill to be either good or very good value for money, while around 18% found it poor or very poor value for money (Figure 3.12). Focus group participants often expressed that electricity was a necessity and thus considered their electricity bill to be good value for money, even if they thought their bill was high (Box 3.2).

Box 3.2: Quotes on respondent attitudes toward electricity bills

"I believe the wholesale cost went up, so suppliers had to charge more to make more money" Bath – Urban, C2DE, 18-45

"If I work a whole month, £72 as a percentage of my income, so I can see, so I can watch TV, I think it's good value for money. Without it, we'd still be using candles for lights" Bath – Urban, C2DE, 18-45

"There's so many people that are complaining about prices and they can't afford it…" Glasgow – Urban, ABC1, 46+

"Prices are sky high, everything is becoming increasingly more expensive" Wrexham - Suburban, ABC1, 18-45

3.3 Familiarity and use of natural areas

The undergrounding projects undertaken through the VIP aim to reduce the impact of powerlines on National Parks and AONBs. Over half of respondents reported having visited a National Park or AONB within the past year (Figure 3.13), and out of the National Parks and AONBs visited, the Lake District, the Peak District, New Forest, and the Yorkshire Dales were the most commonly visited.

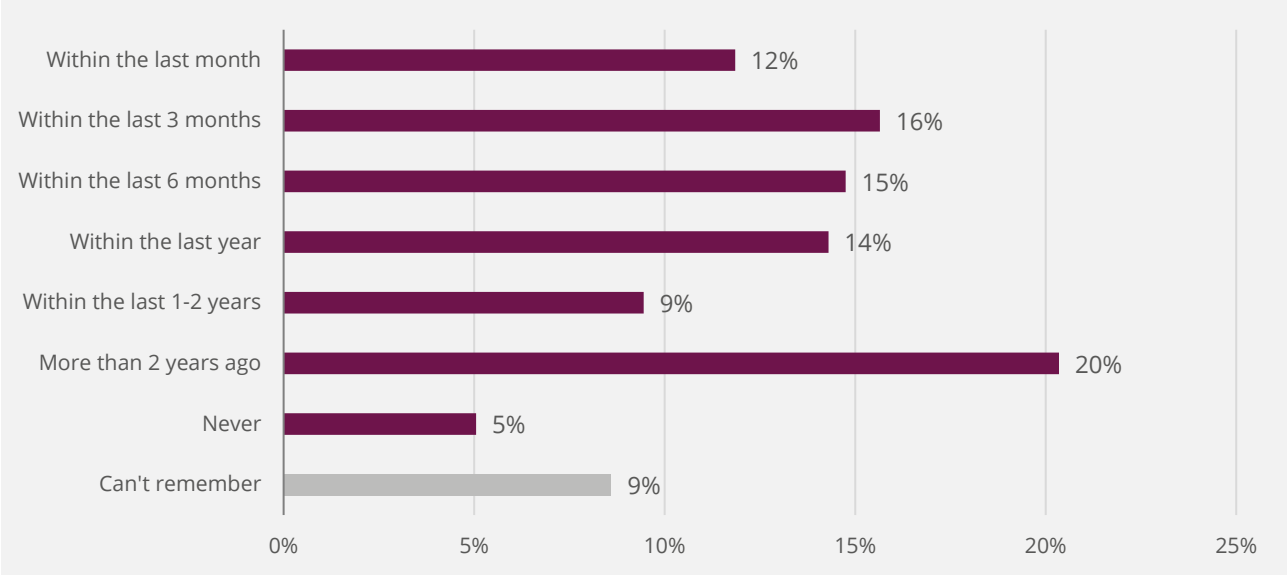

Figure 3.13: Respondents' last visit to an AONB or National Park (n=2,000)

When asked why they visit these areas, respondents most often they went to enjoy the scenery, to relax and unwind and to spend time with family/partner (Figure 3.14). The most popular activity undertaken was walking without a dog, followed by eating or drinking out and appreciating the scenery from a car (Figure 3.15).

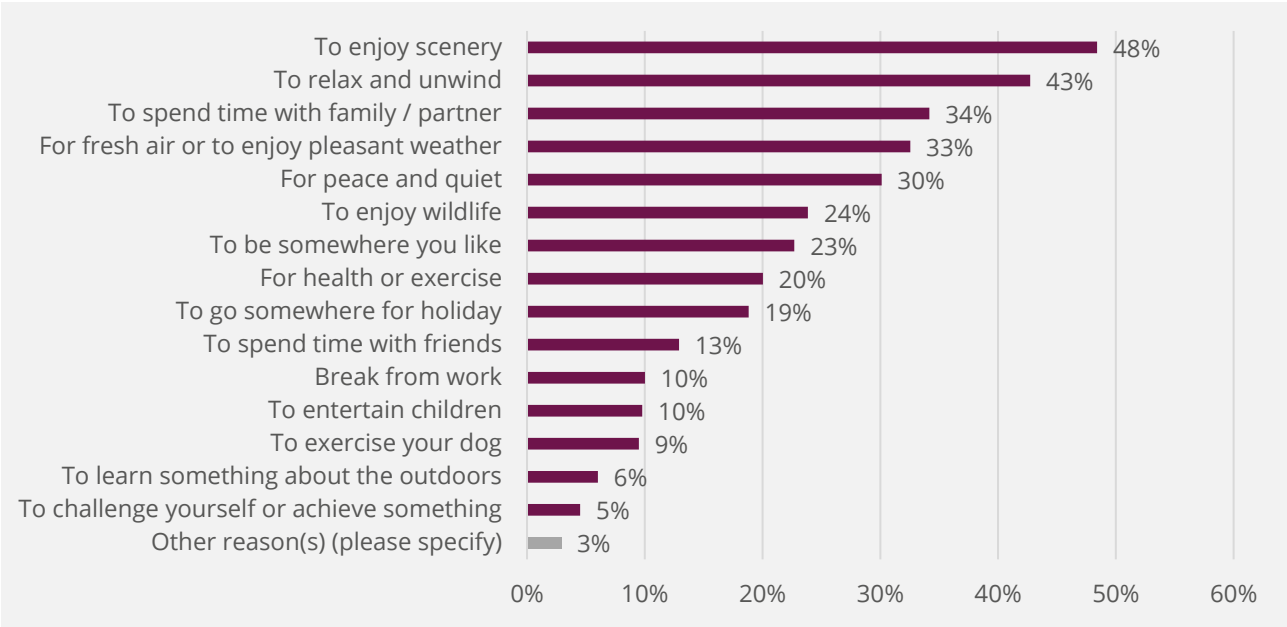

Figure 3.14: Reasons for visiting AONBs and National Parks (n=1,727, multiple selections allowed)

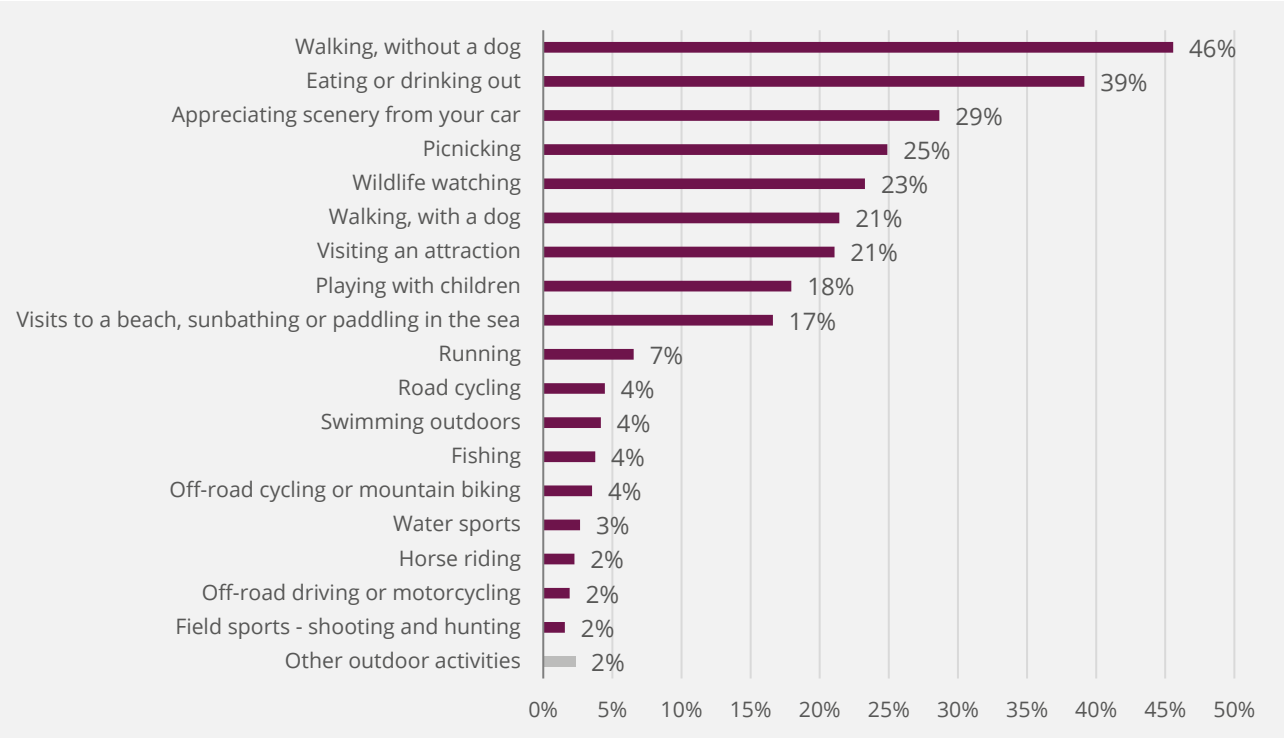

Figure 3.15: Activities undertaken at AONBs and National Parks (n=1,727, multiple selections allowed)

Focus group participants gave similar reasons for visiting National Parks and AONBs and were generally found to have mixed understanding of what made these areas unique (Box 3.3).

Box 3.3: Quotes on participant attitudes and familiarity toward AONBs and National Parks.

"They are areas designated for wildlife, have a richer bio-diversity and they are protected" London – Young/future bill payers

"There'd be protected species there I suppose – flora, fauna, animals…" Wrexham - Rural, C2DE, 46+

3.4 Opinions on energy infrastructure

Survey respondents were also asked if they remember seeing any electricity transmission infrastructure during their most recent visit to a national park or an AONB. Responses were split, with the largest proportion of respondents saying that they could not remember if they saw electricity pylons or not during their last visit to an AONB (Figure 3.16).

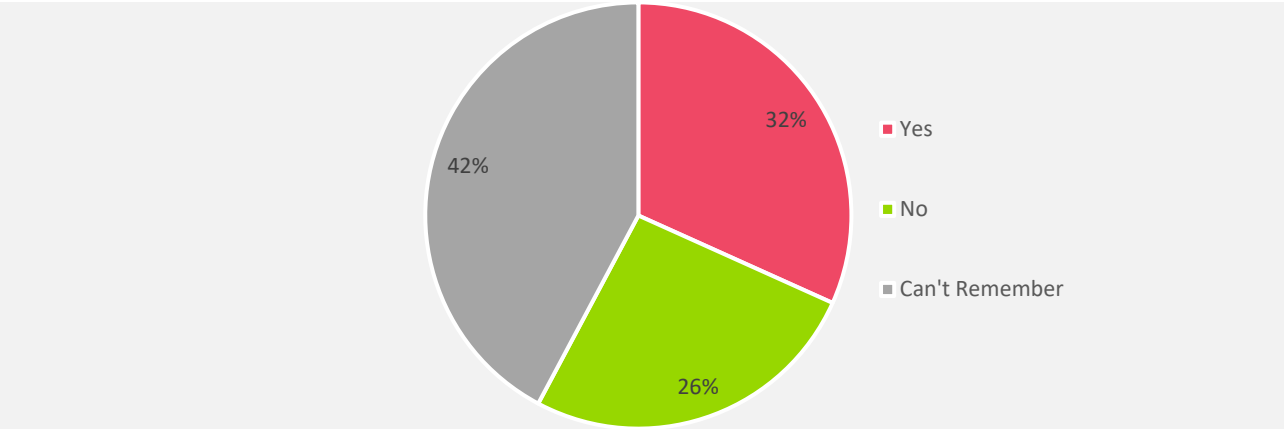

Figure 3.16: Observation of electricity transmission during last visit to AONB or National Park (n=1,727)

In total the largest proportion of respondents agreed (43% 'Agree' or 'Strongly agree') that pylons detract from scenic value, while a third did not have a strong opinion (Figure 3.17). Focus group participants were also split on their opinions of powerlines and electricity infrastructure, with some saying that it was an eyesore, and some saying that the either didn't notice it or didn't care about it being there (Box 3.4).

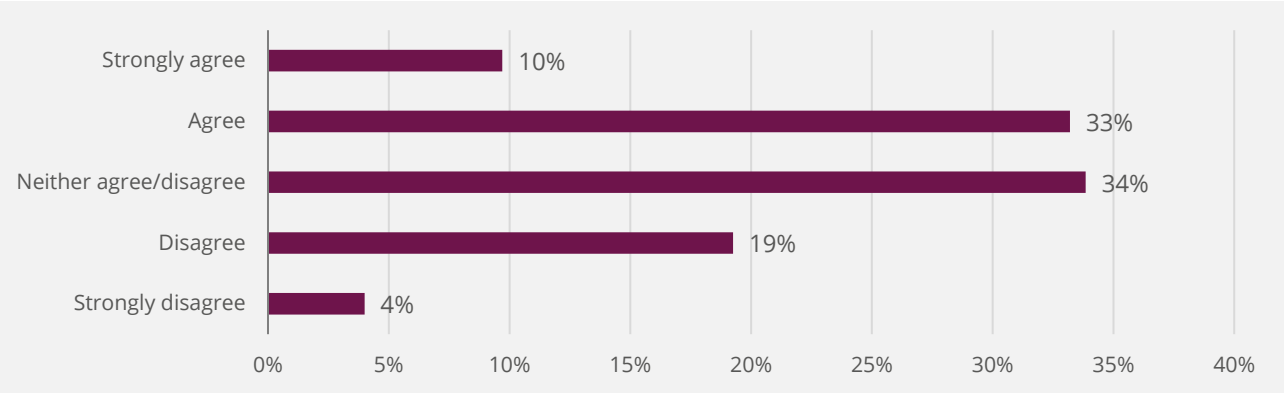

Figure 3.17: Transmission lines detract from the scenic value of natural areas (n=2,000)

Box 3.4: Quotes on opinions toward energy infrastructure in natural areas

"The change in the countryside is absolutely phenomenal when you look and you don't see the big cables" Glasgow – Urban, ABC1, 46+

"I can literally hear them all the time, if I go on a walk I can just hear them, so it negatively affects everything, their presence really" Wrexham – Suburban, ABC1, 18-45

"I'm a keen walker, cyclist etcetera and I do notice the pylons, but to be honest, they don't upset me too much" Loughborough - Rural, C2DE, 46+

Outside of the context of natural areas, a majority of respondents report seeing electricity infrastructure in their everyday lives (Figure 3.18). This is in line with the focus groups, where the majority of the participants were found to notice electricity infrastructure. Around half of respondents found that electricity infrastructure noticeable (Figure 3.19).

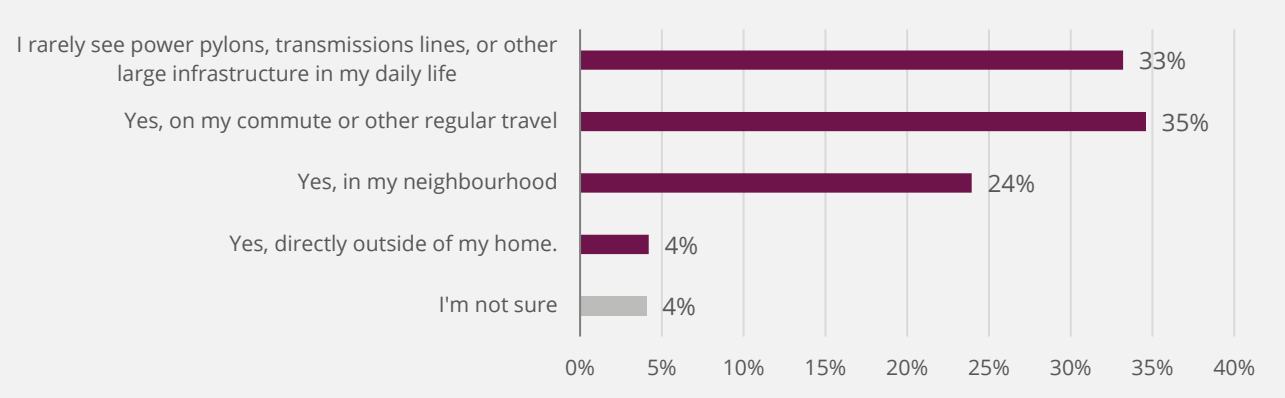

Figure 3.18: Location of observable energy infrastructure in respondent's daily lives (n=2000)

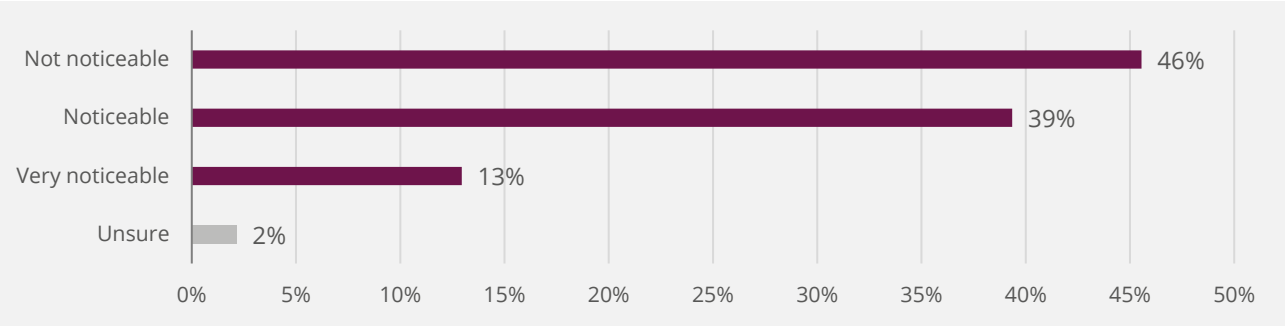

Figure 3.19: How noticeable electricity transmission is in daily life (n=2,000)

3.5 Respondent feedback

The validity of the research findings requires that survey respondents and focus group participants engaged with the material presented to them, understood the topics, and gave considered responses. In the final section of the survey, respondents were asked to provide feedback on the survey, which is summarised in Figure 3.20 and Figure 3.21. The majority of the respondents found the survey either very easy or easy (91%) to complete, indicating that respondents understood the material and the questions they were asked answers. Most respondents also found the survey interesting (80%) and around a third found it educational. A relatively small proportion of respondent found the survey too long or difficult to understand, and finally very few respondents indicated that it was unrealistic or not credible (1%).

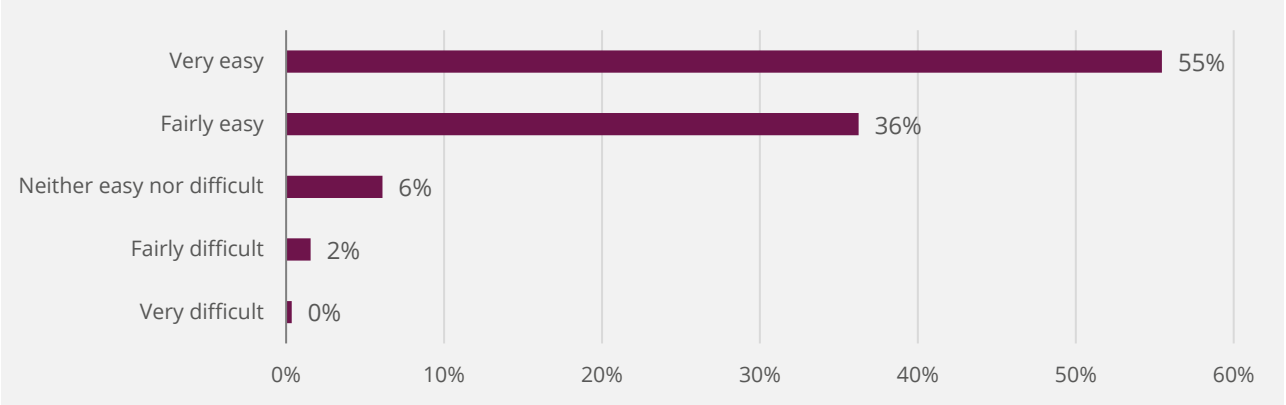

Figure 3.20: Ease/difficulty of the survey (n=2,000)

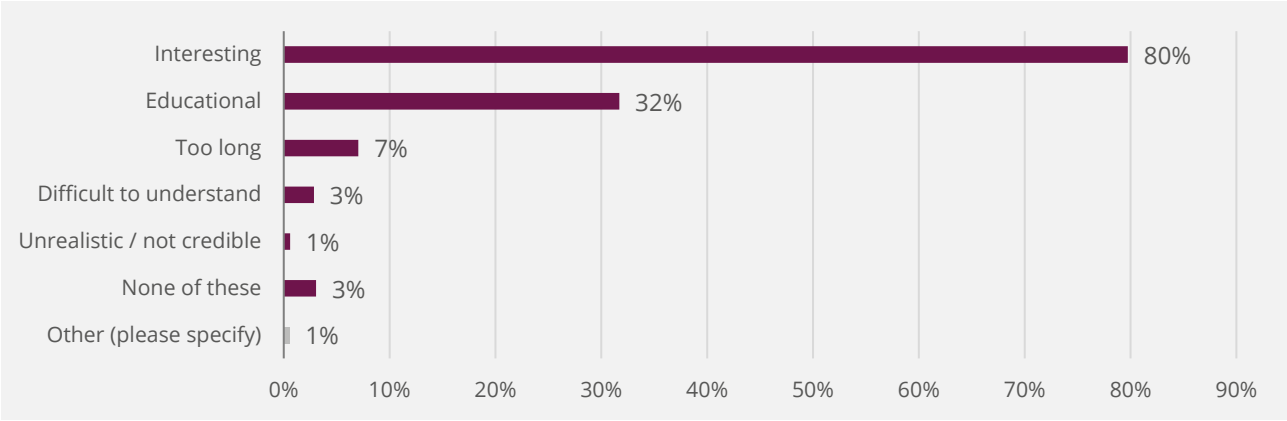

Figure 3.21: Respondent feedback on the survey (n=2000)

These responses align to the sentiments of the focus groups, where the vast majority of participants found the discussion informative, interesting, and educational. Focus group participants also reported a high level of satisfaction in the group discussion, and all participants agreed that it was important to ask consumers their views on topics like bill increases and undergrounding projects (full statistics available in Annex 4; Box 3.5). This feedback indicates that consumers were indeed engaged with the material and were striving to provide honest responses throughout their surveys or discussions.

Box 3.5: Attitudes toward this consumer research

"It's good that people are being consulted, shows they are taking the initiative seriously rather than just going ahead and doing it; I hope they'll use the responses" – Cognitive interview participant

"I think they will use the results, the mere fact that they're doing it means they're interested in what people have to say" – Cognitive interview participant

4. Support for the North Wessex Downs project

Overall, the majority of survey respondents stated that the NWD project was acceptable (76% Very acceptable or Acceptable) (Figure 4.1). A similar level of support was found in the focus groups, with participants reflecting on both the physical impact of the project and its cost (Box 4.1).

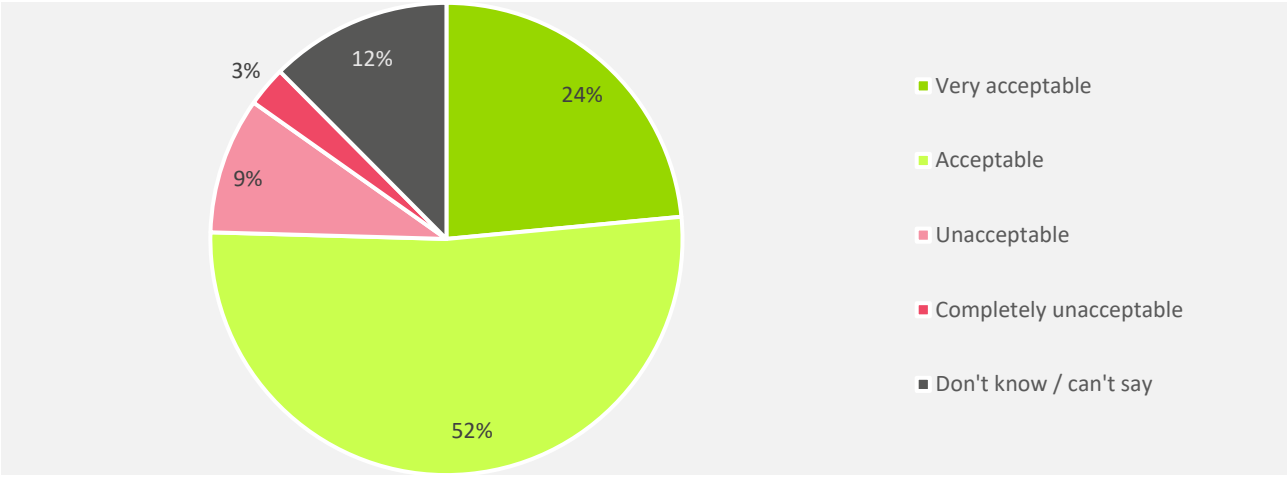

Figure 4.1: Acceptability of the North Wessex Downs AONB undergrounding project (n=2,000)

Box 4.1: Attitudes toward the NWD AONB project

"I certainly think the big one is that the landscape is fully restored to how it was… so providing there's some protection of the wildlife and the ground as it's being down and then it's fully restored, it seems win-win to be fair" Loughborough - Rural, C2DE, 46+

"My electricity bill is just under £300 a month now so in the grand scheme of things it's not a lot more money. It doesn't bother me enough because it's pence rather than pounds" Bath – Rural, ABC1, 46+

"The change in the countryside is absolutely phenomenal when you look and you don't see the big cables" Glasgow – Urban, ABC1, 46+

"I just think it's a waste of time and money and resources that would be better spent somewhere else on a quite dilapidated system, like modernising the network and ensuring everyone has fair access to power…" London – Young/future bill payers

4.1 Acceptability by sample segments

Acceptability was found to be high amongst most sample sub-groups, but some variation is observed across a range of segments based on socio-economic group, income, and age.

The acceptability of the NWD project was lowest for SEG DE respondents (68%). Although the proportion stating the project was unacceptable (13%) is consistent with SEG C1C2 (12%) and SEG AB (12%) respondents, more SEG DE respondents stated "don't know". The level of acceptability for SEG AB and SEG C1C2 was similar (80% and 77%, respectively; Figure 4.2).

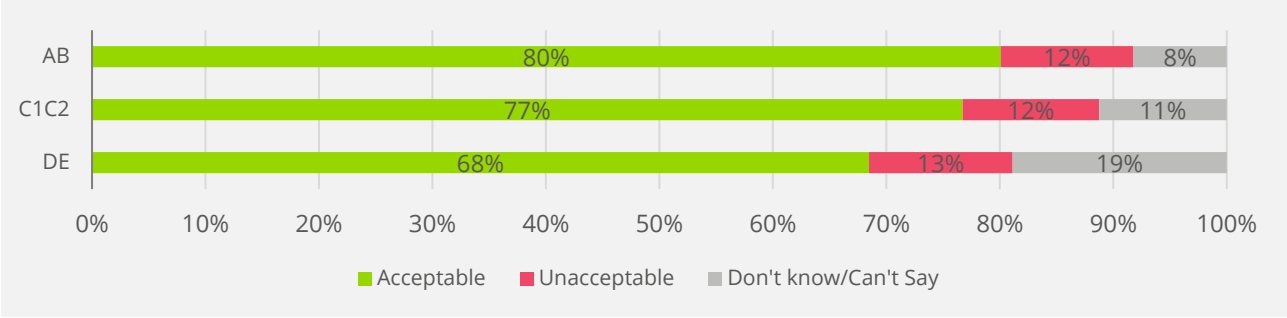

Figure 4.2: NWD acceptability by SEG (n=2,000)

Results by income group (Figure 4.3) breakdown the acceptability level further, showing a noticeable difference for respondents with annual income below £6,000 (62% acceptable) compared to higher annual income levels (min. 71%).

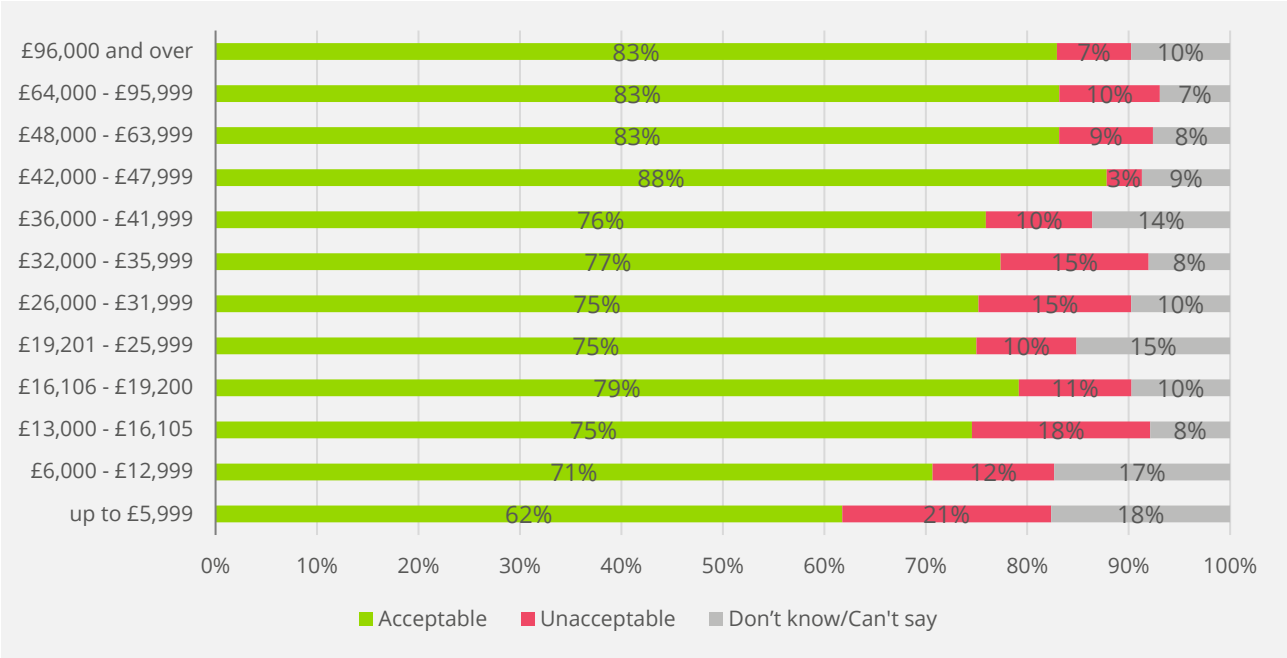

Figure 4.3: NWD acceptability by annual household income level (n=2,000)

Some variation was observed in the level of acceptability for the NWD project by respondent age (Figure 4.4). Older respondent (55+) and younger respondents (18-24) were more likely to find the projects acceptable. There was also some variation in acceptability by respondent region with the highest level of support found in the East Midlands (82%) and the lowest level in Wales (69%) (Figure 4.5). No region was found to have particularly high or low levels of support for the project when compared to the overall sample average.

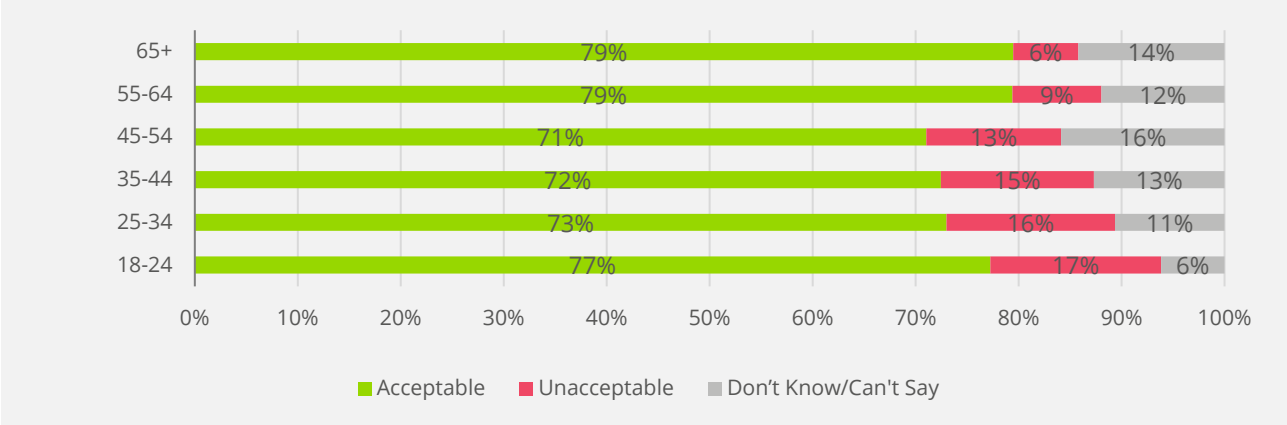

Figure 4.4: NWD acceptability by age group (n=2,000)

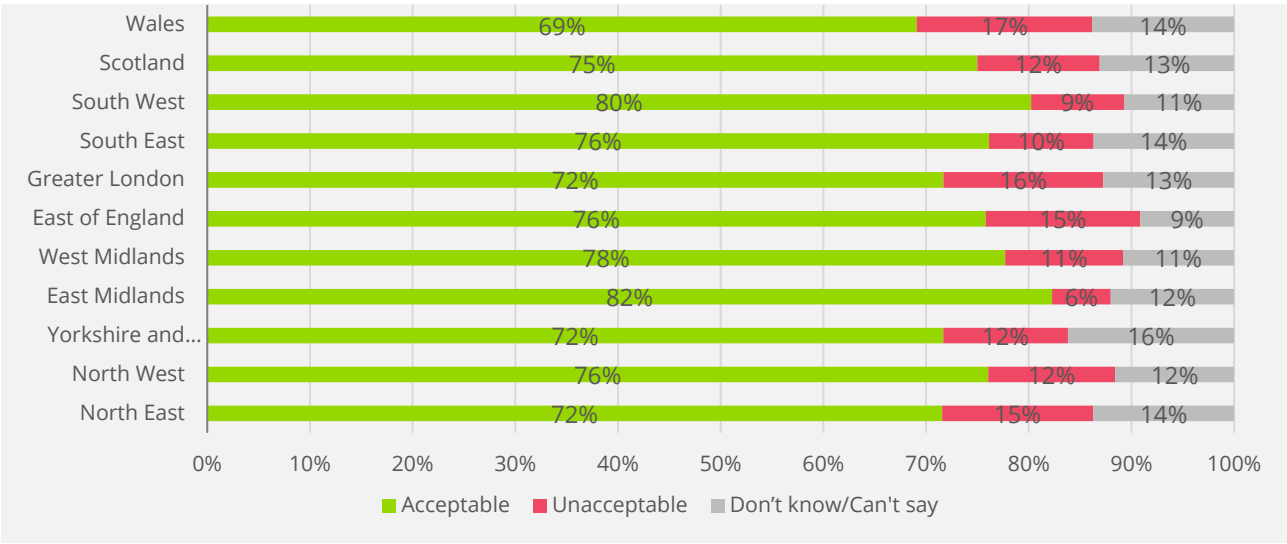

Figure 4.5: NWD acceptability by region (n=2,000)

Finally, those that were familiar with the North Wessex Downs were more likely to find the project acceptable than those that were not (89% versus 75%) (Figure 4.6).

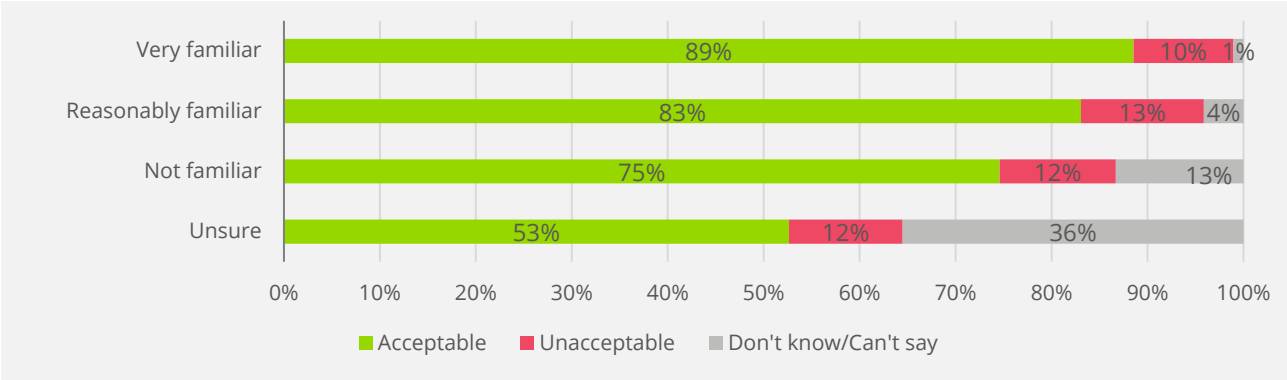

Figure 4.6: NWD acceptability by familiarity with North Wessex Downs (n=2,000)

4.2 Acceptability and respondent ability to pay bills

Box 4.2: Focus group discussions around bill costs

"Four pence a year, it's nothing really is it, in comparison to other bills that are going up. And for a project to be undertaken of such magnitude, I think it's reasonable" Wrexham - Rural, C2DE, 46+

"Prices are sky-high, everything is becoming increasingly more expensive" Wrexham - Suburban, ABC1, 18-45

The acceptability of the NWD project was lowest for respondents who stated they always encountered difficulty paying household utility bills (58%; Figure 4.7). The level of support from those who stated that they sometime encountered difficulty paying bills (69%) was closer to the overall result, but still well below the full sample average (76%; Figure 4.1). Focus group participants has similar sentiments towards current energy bill and acceptability (Box 4.2).

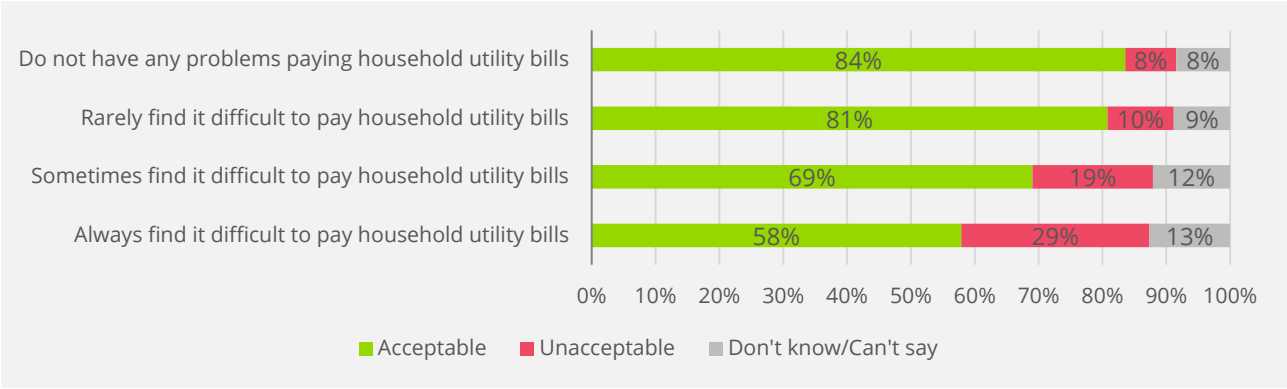

Figure 4.7: NWD acceptability by difficulty paying bills (n=1,980)

4.3 Reasons given for 'acceptable' responses

In the focus group discussions, the primary reason for the acceptability of the NWD project was the low bill impact (Box 4.3). In some cases, even participants that had expressed ambivalence towards the NWD project stated that the project was acceptable due to the bill impact being 'only' a few pence per year. A similar pattern of responses is evident from the survey respondents, where the primary reasons for the project acceptability were the positive visual impact of the project and the bill amount being insignificant (Figure 4.8).

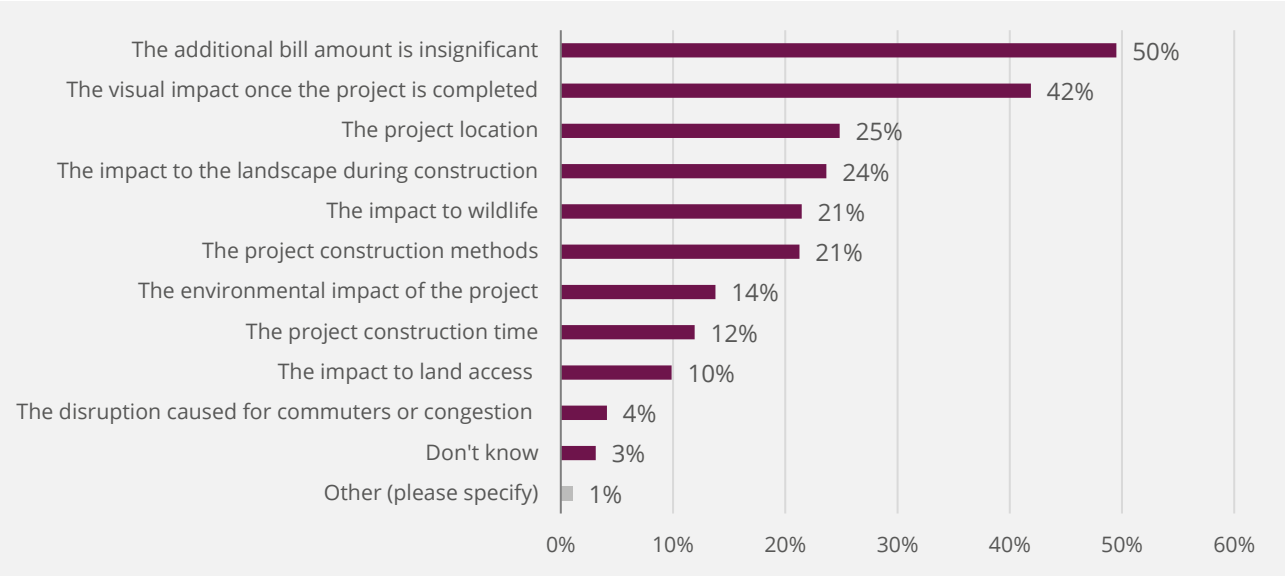

Figure 4.8: Reasons for acceptability of NWD project (n=1,509)

Box 4.3: Reasons for finding the NWD project acceptable.

"I think it makes it seem more value for money when you contemplate the sum of it all" London – Young/future bill payers

"The change in the countryside is absolutely phenomenal when you look and you don't see the big cables" Glasgow – Urban, ABC1, 46+

4.4 Reasons given for 'unacceptable' responses

The primary reason for respondents saying the project was unacceptable was also the bill impact (Figure 4.9). Most focus groups participants - when probed on why the cost was unacceptable – gave responses indicating that they were considering the entire cost of the project and not the cost to them personally or gave responses indicating they objected to the price increase on principle, distrust of the process, or simply did not think the project was worthwhile (Box 4.4).

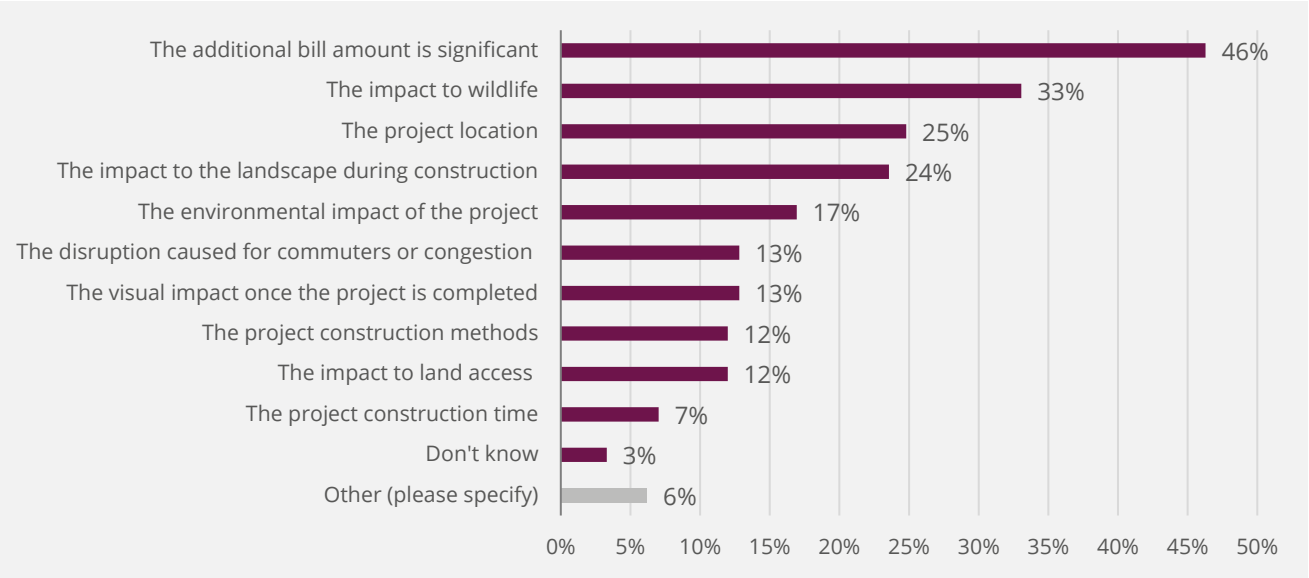

Figure 4.9: Reasons for unacceptability of NWD project (n=242)

Box 4.4: Reasons for finding the NWD project unacceptable.

"I'd rather £500 million was invested in more charging points for electric cars, so more people can look at getting them" Bath – Rural, ABC1, 46+

"You can't just keep on adding stuff on, at some point you've got to draw a line" Bath - Rural, ABC1, 46+

"I've never seen a project that goes to cost anyway, they always go over and I'm sceptical about this 4p" Loughborough - Rural, C2DE, 46+

"I'm happy to pay an extra 4p a year on my bill, that has no bearing on me whatsoever, but I'm not convinced the project is the right thing to do" Wrexham – Suburban, ABC1, 18-45

4.5 Undecided responses

A relatively small proportion of respondents were undecided on the acceptability of the NWD project (12% Don't know / can't say; Figure 4.1). The main reasons given for being undecided was that the project was not important to the respondent, followed by the need for further information about the project in order to make a decision (Figure 4.10). Within the focus groups, some participants had difficulty weighing up the implications and costs and benefits of the project or wanted more information to make a decision (Box 4.5). In particular, participants had concerns about the maintenance of the underground lines and the short-term impacts to the countryside and the local area from construction.

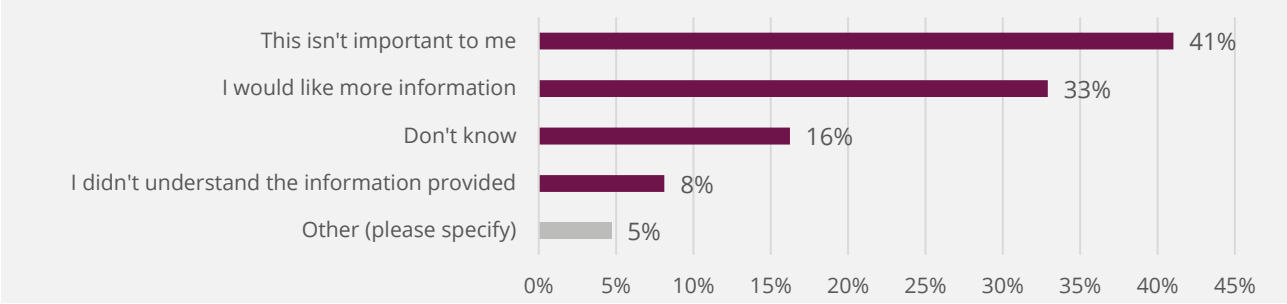

Figure 4.10: Reason for undecided responses of acceptability of NWD project (n=249)

Box 4.5: Focus group discussions around undecided responses

"I think it's important to consider, if something goes wrong, what's the timeline for fixing that, because everything will have to be dug up again and that will have impacts on the environment forever" London – Young/future bill payers

"Has it been checked how easy it is to maintain it, because surely if something goes wrong all the landscape will have to be dug up again?" Loughborough - Rural, C2DE, 46+

"I do think it will solve the problem visually, but it's going to disrupt so much of the natural world, is it really worth it? Wrexham – Suburban, ABC1, 18-45

4.6 Main factors influencing acceptability of NWD project

Further analysis was conducted on the survey response data to examine the factors that influenced acceptability of the NWD project, including respondent income, age, region, bill amount, and financial support (such as the Winter Fuel Payment; Annex 6). The main purpose was to test if the level of support observed for various samples segments – reported in Section 0 - hold when multiple factors are considered in aggregate. Further analysis was also conducted to examine possible trends between respondents that found the NWD unacceptable and those that were unsure (don't know responses).

Respondents were found to be more likely to find the NWD project acceptable if they had higher income (0.2% more likely per £100 in monthly income), from Yorkshire and the Humber (12% more likely), or be a recipient of the Winter Fuel Payment (7.5% more likely). The results of this model match many of the findings from the sample segments, including the trend of higher levels of support for higher income respondents, and the general lack of a consistent trend for age or most regions. The increased likelihood of support from those receiving the Winter Fuel Payment is an interesting finding. It likely reflects a broader pattern that the project is more likely to be acceptable to consumers with lower bills (in this case a £250 - £600 reduction) – particularly since the payment is not means tested (hence receipt of the payment is *not* an indication of a consumer in potentially vulnerable financial circumstances).

When examining unacceptable versus undecided respondents in a similar model, older respondents were found to be more likely to consider the project unacceptable, whereas younger respondents were more likely to be undecided. Men were also more likely to be undecided, whereas women were more likely to find the project unacceptable.

5. Support for the overall VIP

The overall VIP programme for 2021-26 had similar levels of acceptability to the NWD project from survey respondents, with the majority (76% Very acceptable or Acceptable) supporting the full programme – based on the total £465m provision (Figure 5.1) and a bill impact of £0.27 a year from 2022-2047.

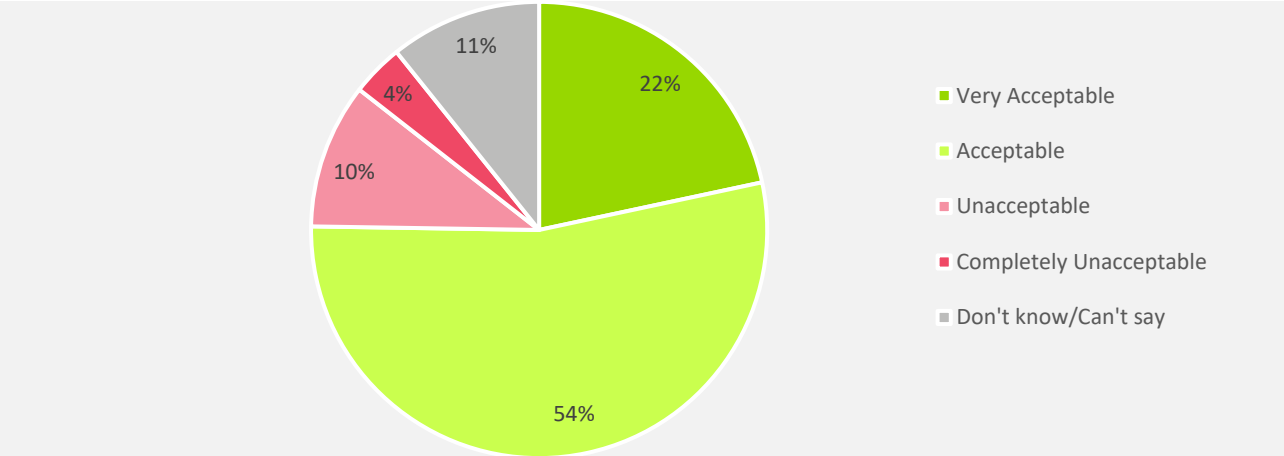

Figure 5.1: Acceptability of the VIP programme (n=2,000)

5.1 Acceptability by sample segments

The breakdown of results by segments also mirror the findings for the NWD project (see for example Figure 5.2). The lowest levels of support were observed for respondents who stated that they struggled to pay their bills (58%, Figure 5.3).

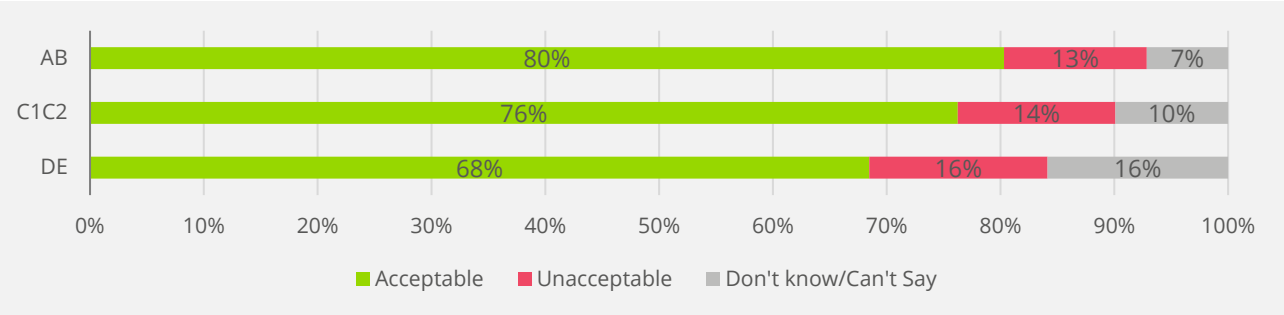

Figure 5.2: VIP acceptability by SEG (n=2000)

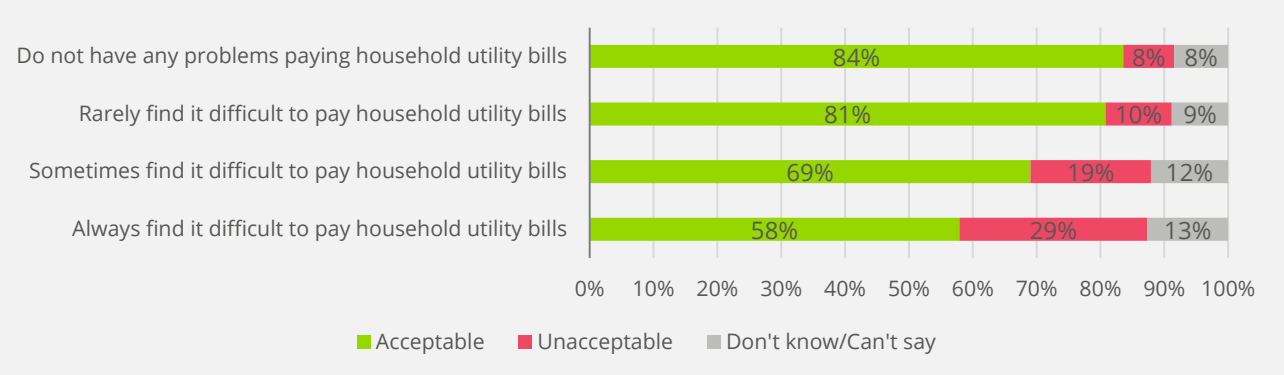

Figure 5.3: VIP acceptability by ability to pay bills (n=2000)

Some variation in support for the overall VIP was also observed by region, but with a similar pattern to the results for the NWD project (Figure 5.4). The highest level of support was found in the South West (83% Acceptable), and the lowest in Greater London and Wales (both 69%).

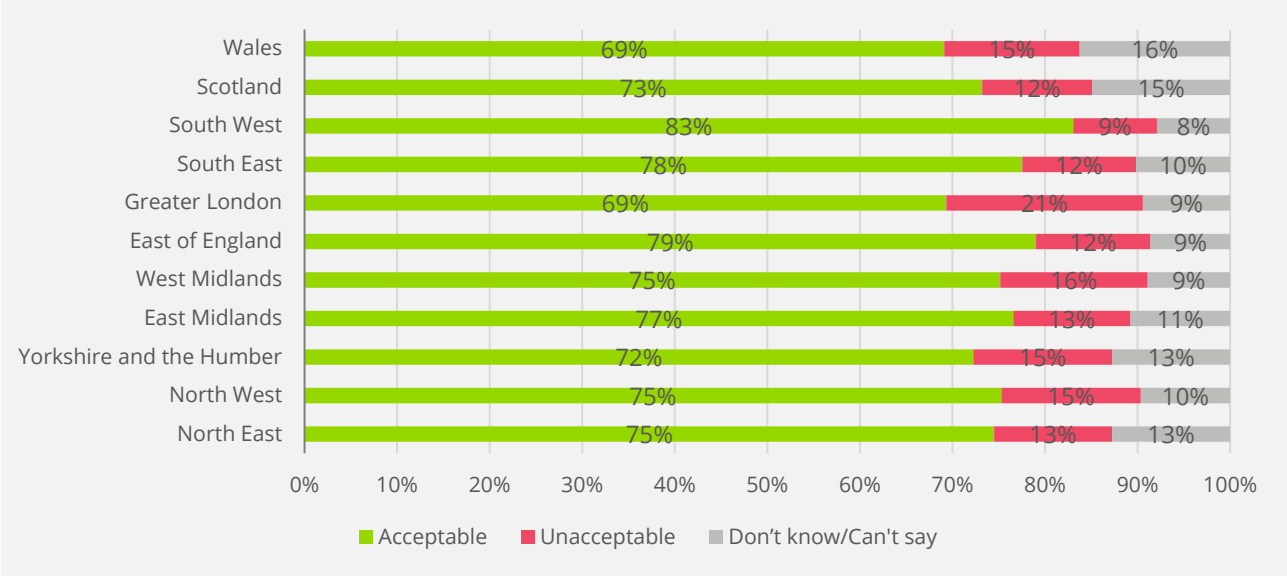

Figure 5.4: VIP acceptability by region (n=2000)

5.2 Further analysis

Follow-up questions elicited survey respondents' maximum willingness to pay for undergrounding via the VIP, along with reasons to their response, and their general attitudes toward undergrounding projects.

Respondent willingness to pay for undergrounding

Generally, respondents were found to be willing to pay an amount higher than the expected maximum bill impact for the VIP to fund undergrounding projects in AONBs and National Parks. Mean average willingness to pay was observed to be approximately £6.75 per household per year and a median value of £2.05 per household per year.[18] Results should be interpreted carefully as the survey was not designed to explicitly measure the welfare impact (benefit) of the VIP and undergrounding projects – the valuation question was instead included as a supplementary follow-up to gauge the strength of consumer preference – but nevertheless there is a clear indication that consumers perceive substantial added value from these projects over and above the actual bill impact.

Reasons given supporting or not support the VIP

The main reasons given for respondent willingness to pay for the VIP were that the impact on bills was reasonable (63%) and that the projects would improve natural areas (45%, Figure 5.5).

[18] These values are estimated using maximum likelihood estimation for interval data, as seen in *Cameron, T.A. and Huppert, D.D. (1989), OLS versus ML estimation of non-market resource values with payment card interval data, Journal of Environmental Economics and Management 17 (3), pp 230 – 246.*

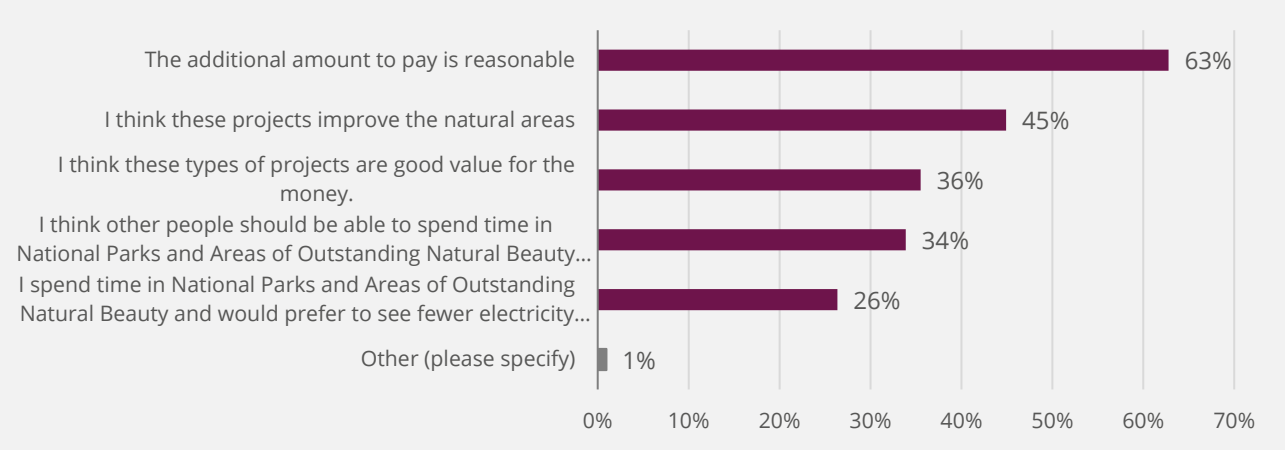

Figure 5.5: Reasons for being willing to pay for the VIP (N = 1,768)

Likewise, respondents that were not willing to pay an additional amount for these projects were asked why (Figure 5.6). The most prominent answer was that the respondents did not believe that it was their duty to pay for these types of projects (31%) followed by respondents stating they would like the projects to go ahead but they cannot afford it (25%). Just under 20% stated that they were concerned about the impact to wildlife and general damage caused by the project's construction. Responses given by focus group participants mirror these sentiments (Box 5.1).

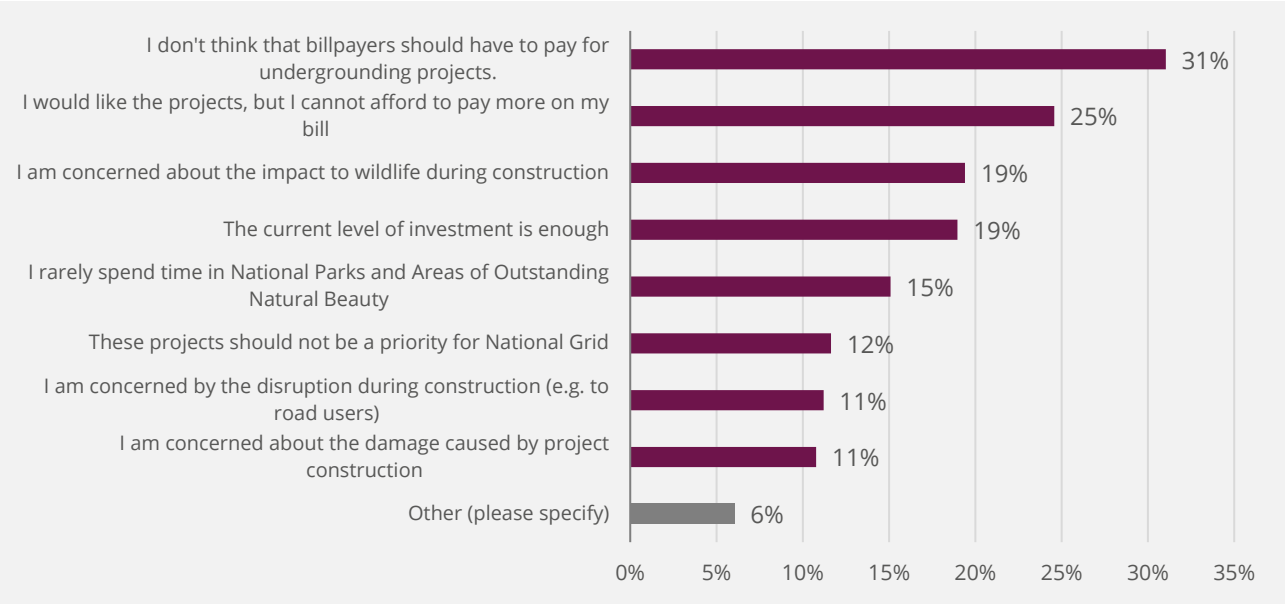

Figure 5.6: Reasons for not being willing to pay for the VIP (n = 232)

Box 5.1: Reasons for not supporting the VIP

"I am not willing to pay for something that will not benefit me. If you do it in my local area, then I will gladly pay, but when I will not pay to improve the landscape for people in the South of England! They can pay for their own improvements if they want it!" – Cognitive interview participant

"Energy prices are going to continue to rise anyway, you'll increase to cover this project, but you'll never reduce them again. The project will go over budget and it's not something we're asking for." – Cognitive interview participant

6. Conclusions

This study has undertaken consumer research to measure the acceptability of the North Wessex Downs AONB undergrounding project. The research used a combination of qualitative and quantitative research methods to provide a rounded view of the level of consumer support. The results from a nationally representative online survey of 2,000 respondents quantify the level of support for the project, along with the reasons for its acceptability or otherwise. A series of eight online focus groups provide wider insight on consumer perceptions of the project and its impacts. The combined research approach ensures that National Grid has a comprehensive understanding of consumers' view on the North Wessex Downs project and the overall Visual Impact Provision (VIP) programme. It follows the template of previous consumer acceptability studies carried out by National Grid for its current Business Plan and the undergrounding projects currently underway.

The research finds a good level of support for the North Wessex Downs AONB undergrounding project. A clear majority of consumers participating in the research stated that the project and its bill impact (£0.04 per year for the average bill-payer from 2023-2047) was acceptable (76%). Support amongst those who stated they struggled to pay bills was also above 50%. Support was highest among:

- Higher socio-economic groups (80% acceptable versus 12% unacceptable);
- Those that were familiar with the North Wessex Downs (89% acceptable);
- Those 55+ in age (79% acceptable); and
- Those in the East Midlands (82% acceptable) and the South West (80% acceptable) regions.

The lowest support levels of support were found among:

- Those in Wales (69% acceptable versus 17% unacceptable);
- Lower socio-economic groups (68% acceptable versus 13% unacceptable); and
- Those that were struggling to pay bills (67% acceptable versus 19% unacceptable).

These findings show there is clear support for the project across varying across socio-economic and demographic segments as well as different regions.

The focus group discussions support the survey results. Whilst participants had some negative opinions of the electricity industry overall - especially due to recent bill increases - the view of National Grid was generally positive. The transmission component of the bill was typically seen as good value for money, and a key reason for the support shown for the NWD project and overall VIP was the minimal bill impact to their household. Participants also recognised the positive impact that projects would have on scenic landscapes. Consumers that did not support the project indicated that they preferred the funds used for this type of project should be used for other things or indicated that they these types of projects should not be funded through by increased consumer bills at all.

Feedback for both aspects of the research indicated that consumers were engaged with the discussion topic and survey, and that they gave valid and considered responses when considering their support for

the North Wessex Downs undergrounding project. Moreover, there was positive feedback from consumers about the research process. Focus group participants unanimously stated that it is important for National Grid to get consumer feedback on projects like the North Wessex Downs undergrounding, and survey respondents also indicated that the survey topic areas were interesting and educational. This indicates the bill-payers welcome National Grid including them in the project planning process and suggests that similar research should be undertaken on future projects of a similar nature.

Annex 1. Focus group topic guide

Annex 1. Focus group showcards.pdf

Annex 1. Focus group topic guide.pdf

Annex 2: Survey questionnaire

Annex 2. Survey questionnaire.pdf

Annex 3: Onscreen appearance of survey

Annex 3. Onscreen appearance.pdf

Annex 4: Focus group summary report

Background

The purpose of the visual impact provision (VIP) is to reduce the impact of electricity transmission lines in Areas of Outstanding Natural Beauty (AoNBs) and National Parks across England and Wales. National Grid is currently developing plans for a VIP project in the North Wessex Downs AoNB that will replace 4km of overhead lines and 11 pylons with an underground cable.

The project will benefit local communities and visitors to the North Wessex Downs, as well the wider population through the enhancement of an iconic chalk downland landscape. The project is funded through consumers' electricity bills and National Grid is required by Ofgem to demonstrate that the bill impact is acceptable to bill payers.

Research objectives

The overall aim of the research is to test the acceptability of the VIP project with consumers, using both qualitative (online focus groups) and quantitative (nationally representative online survey) methods. This report concerns itself with the qualitative element only.

In addition to the overall aim, there were some key questions and topics to cover as part of the qualitative research, including:

- General views on the energy industry and where National Grid sits in the supply chain;
- Perceptions of the National Grid element of the electricity bill;
- Environmental impacts of National Grid's operations;
- Whether electricity pylons and overhead transmission lines are noticed, and the extent of concern about them;
- Familiarity of National Parks and AoNBs and the frequency of people visiting them;
- Awareness of 'undergrounding' electricity cables and attitudes towards it;
- General support and acceptability for North Wessex Downs VIP project, and of National Grid's overall VIP programme; and,
- Value for money and the affordability of electricity bills.

Approach

To achieve these objectives, a programme of eight online focus groups was undertaken across England, Wales and Scotland. As well as understanding the what's and why's about people's attitudes and motivations towards the VIP programme, the qualitative stage was used to help shape the quantitative work. To develop the survey it was important to assess the best language and terminology to explore customer responses and their acceptability of the VIP programme, both in North Wessex Downs and overall.

Group logistics

While many of the Covid-19 restrictions had eased when the research was undertaken in early January 2022, the country was on the tail end of Omicron, and government advice was to work from home if possible. As such, the focus groups were conducted online, using a specialist market research platform called Visions Live.

Each group was 90 minutes long in duration and was broadly split between age and socio-economic group (SEG). In addition, the locations were recruited on a regional basis and whether they were urban, suburban or rural. There was one younger group of consumers, aged 18-25.

The group structure along with the number of participants is shown in Table A4.1 below. Across the eight groups, 58 people in total took part.

Table A4.1: Focus group location and structure

Number	Location	Urban / rural	SEG	Age	Number of attendees
1	Bath	Urban	C2DE	18-45	7
2		Rural	ABC1	46+	7
3	Wrexham	Rural	C2DE	46+	5
4		Suburban	ABC1	18-45	6
5	Newcastle	Suburban	ABC1	46+	8
6	Loughborough	Rural	C2DE	46+	8
7	London	Urban	Future customers, (non-bill payers) 18-25		10
8	Glasgow	Urban	ABC1	46+	7

Participant experience

The participant experience was very positive in terms of the discussion content and their overall satisfaction with the session as shown in Figure A4.1 and Figure A4.2 below.

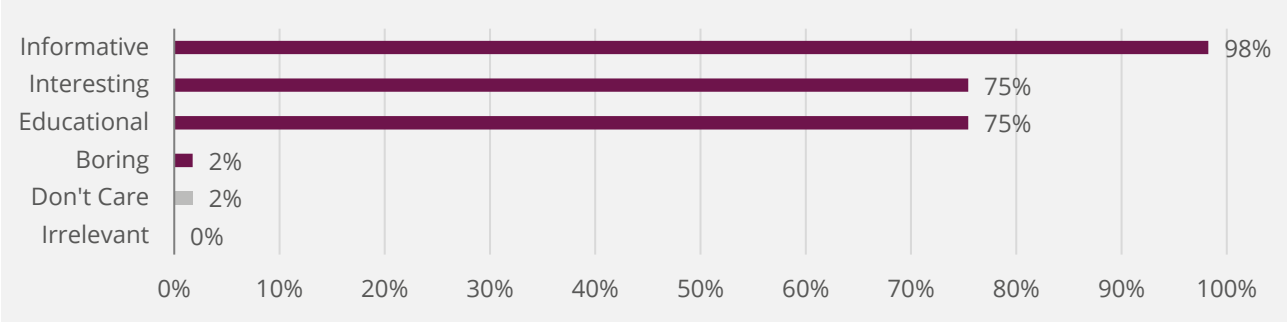

Figure A4.1: Participant description of the session (multiple responses allowed, n=57)

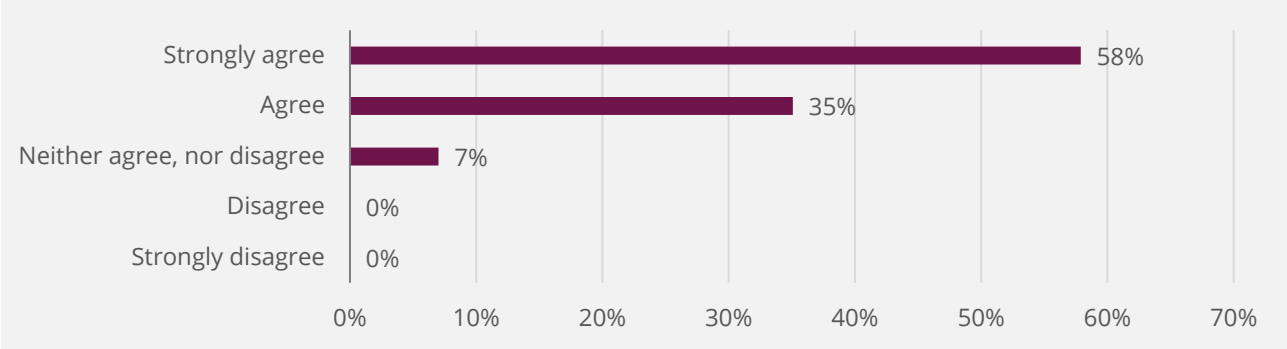

Figure A4.2: Participant agreement with "Overall, I am satisfied with the session." (n=57)

And, everybody agreed that the it was an important topic to ask consumers about (Figure A4.3).

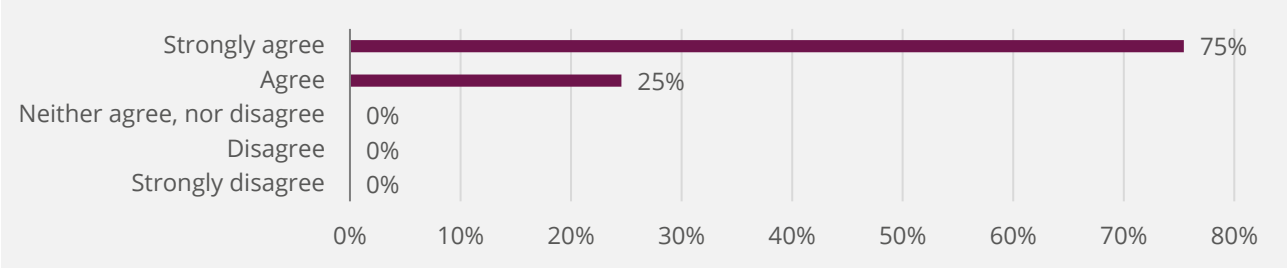

Figure A4.3: Participant agreement with "It is important to ask consumers about projects like this." (n=57)

Before attending the groups, participants were sent some pre-reading about the industry in general, including Ofgem's role. It specifically detailed National Grid's role in terms of electricity and gas transmission and introduced them to the idea of 'undergrounding' electricity cables.

Research Findings

This chapter sets out the research findings, with relevant subheadings which focus on the specific research objectives. In the main, the findings relate to the points made across all of the groups. Where one of the groups emphasised a certain point, this is specifically brought out by referencing the relevant group making the point. In all cases, consumer quotes are provided to support the findings.

Understanding of the energy supply chain

Prior to the main discussion about the visual impact programme, participants were asked more generally about what they understood about the energy supply chain, and National Grid's role and responsibilities with it.

Although people had been supplied with the pre-reading detailing the make-up of the energy supply chain, they were still a little confused as to how the different constituent parts are organised.

"I literally know nothing about it at all. All I know is that I have my energy supplier who I pay, and that's all I know" Bath – Urban, C2DE, 18-45

"National Grid produce it and then it gets transmitted and is received by the customer"

Wrexham – Suburban, ABC1, 18-45

"They manage the whole network, they don't actually manage the supply to your house. They're there at the top of the supply chain, if you like" Glasgow – Urban, ABC1, 46+

"I'm not too clued up on how it's (the industry) structured" London – Young/future bill payers

But a small number seemed to have a reasonable understanding of National Grid's role in terms of transmission.

"National Grid manage the high voltage electricity, so I think they transmit it through to distributors"

Bath – Urban, C2DE, 18-45

"The electricity is generated and then it is passed along higher voltage to pylons and cables and then reduced to a lower voltage at primary substations and secondary substations and then into low voltage into residents and commercial properties" Wrexham – Suburban, ABC1, 18-45

"National Grid are the ones who provide the power to the local companies to provide to the customer" Newcastle – Suburban, ABC1. 46+

"I think that it transports power from generators to distributors" London – Young/future bill payers

There were rare mentions of National Grid in the context of power cuts.

"The only thing I knew about National Grid is when you hear on the news that people have had power cuts" Loughborough – Rural, C2DE, 46+

"I thought it was mostly for emergencies because we've had a couple of issues over the years and National Grid have been called out" Newcastle – Suburban, ABC1. 46+

And a small number were unaware of their role in the transport of gas.

"I didn't realise that National Grid had control of main gas networks, I just associated it with electric" Newcastle – Suburban, ABC1. 46+

Some people had very little idea about the supply chain in terms of generation/production, transmission and distribution. In Bath, people mentioned both South Wales and West electricity and Western Power, Scottish Power as distribution companies.

Unsurprisingly, consumers were much more aware of their supplier, because of the billing interface, although some confusion did surface.

"They're basically the distributors" Bath - Rural, ABC1, 46+

Most could easily recall who their supplier was, mentioning some of the Big Six such as Eon, British Gas, SSE and nPower. New, but well-established challenger suppliers like Octopus, Ovo and Bulb were also mentioned, along with new entrants such as Eon-next, Severn Electric, Outfox the Market and Shell.

When asked how the industry is regulated, people were mostly aware of Ofgem and it's role to ensure fair pricing and competition.

"It's interesting the importance of Ofgem… monitoring the energy companies to make sure they're giving the right level of service, and I suppose preserving competition as well; I picked that element up, to make sure as customers we're treated fairly" Bath - Rural, ABC1, 46+

"…make sure everything's fair, and prices are fair and customers are being treated properly and that it's competitive as well" Bath – Urban, C2DE, 18-45

"To make sure that customers get a fair deal, take up any issues that occur" Wrexham - Rural, C2DE, 46+

"They are responsible for competition and innovation" Loughborough - Rural, C2DE, 46+

"I've heard them mentioned when it came to regulating prices for electricity and energy suppliers" Newcastle – Suburban, ABC1. 46+

"Regulators are quite common in industries in which there's little competition, to ensure value for money, fair practices, fair prices for the customer and to encourage innovation" London – Young/future bill payers

Key issues affecting the industry

People were asked what they thought the key issues affecting the energy industry were. Many of the participants mentioned the dramatic increase in prices, which some people put down to the rising wholesale cost, which resulted in suppliers charging more to ensure they stayed profitable.

"I believe the wholesale cost went up, so suppliers had to charge more to make more money" Bath – Urban, C2DE, 18-45

"…what's going on at the moment with rising energy costs – they're (suppliers) responsible for buying the gas off of wholesalers and they mark it up and charge the customer what they want" Bath – Urban, C2DE, 18-45

"Prices are sky high, everything is becoming increasingly more expensive" Wrexham - Suburban, ABC1, 18-45

"There's so many people that are complaining about prices and they can't afford it…" Glasgow – Urban, ABC1, 46+

In the context of rising prices there was one person in Bath who thought that fuel poverty had the potential to become problematic for consumers. The issue of affordability and value for money is discussed in more detail in Section 0

Another major issue in the energy sector that was highlighted concerned climate change and the move to more renewable energy.

"I think they're trying to source a lot more economically and environmentally friendly ways of providing electricity" Bath – Urban, C2DE, 18-45

"I think about where the generation is coming from, and the mixture of fossil fuels and nuclear. COP 26 was huge for the country and I think it's brought a huge amount of awareness for climate change, and to become net zero, and where does that come from" Bath - Rural, ABC1, 46+

"…trying to use renewable sources - wind power, solar panels" Wrexham - Rural, C2DE, 46+

"They want to get to Net Zero don't they so it's all about getting carbon neutral, COP 26, all that kind of thing isn't it" Wrexham - Suburban, ABC1, 18-45

"...the environmental issues and how it's generated, the fossil fuels and the wind and solar" Newcastle – Suburban, ABC1. 46+

"Obviously if you're using fossil fuels and stuff like that rather than air farms or any other kind of green energy, then that is going to be really bad for the environment" London – Young/future bill payers

One person in London also talked about the balance between transporting power and the impact on the local ecosystems.

"Balancing the need to get power in places but not having a detrimental impact on local ecosystems" London – Young/future bill payers

Security of supply was also mentioned as a key issue.

"A lot of, or some of, our energy is from abroad and we know that is tenuous at the best of times, thinking about what is going on at the moment" Bath - Rural, ABC1, 46+

"I know there are some rumours going on about supply coming from Russia, for example, and what are the implications there if they suddenly started messing about with our supply" Bath - Rural, ABC1, 46+

A further point was mentioned about planning for the future which played more into the security of supply during the discussions, than it did the environment. People in the ABC socio-economic group particularly mentioned this aspect.

"Another area that worries me is that if we all have electric vehicles, do we have enough supply on the grid? Bath - Rural, ABC1, 46+

"We are not going to have enough electricity the way we're carrying on, because electric cars are coming in from 2030, and then you've also got the issue with the gas boilers going on, and having the hydrogen and the electric supply in the homes, so that is going to increase demand drastically" Bath - Rural, ABC1, 46+

"All the push for electric vehicle charging and going green is having a massive strain on the implications on the electricity networks themselves with the increased capacity needs" Wrexham - Suburban, ABC1, 18-45

"You cannot but notice that we've closed lots of power stations, especially the coal power stations, of recent years, and do we have enough coming up to keep the demand there?" Newcastle – Suburban, ABC1. 46+

"I think the move to renewable energy is probably quite a big thing right now, you know. Just making sure that we're sustainable going forward" Glasgow – Urban, ABC1, 46+

Several people mentioned how some of the smaller companies were going bankrupt and falling into administration, but most did not really understand the reasons or the wider implications on the market. The only impact people noticed was a change in supplier and the very sizeable increases in their energy bills.

"We were with a company that went into administration at the end of last year, and they've now been taken over by Octopus Energy" Wrexham - Rural, C2DE, 46+

"I think it's quite bad that suddenly before Christmas all these companies were folding, going into bankruptcy. That's bad, I would have hated that to have happened to me" Wrexham - Rural, C2DE, 46+

"Suppliers are going bust; I was with Igloo, for example, they went bust and were taken over by E-On; that does seem to be quite prevalent at the moment… Wrexham – Suburban, ABC1, 18-45

"I was with E-on and was not happy with the service, so moved over to Igloo, and they went bankrupt and put me with E-on next, so I tried to go with Octopus and was told, just stay where you are, because there are no deals at this present time" Loughborough - Rural, C2DE, 46+

"…in terms of the regulators and allowing that competition between different providers, as we've seen with Bulb recently going into administration…" London – young/future bill payers

"…concerns about certain suppliers going out of business, and things like that. I think it seems quite unstable at the moment" Glasgow – Urban, ABC1, 46+

There was the odd person who did have a better understanding of the market dynamics.

"The wholesale gas price isn't it, so it's what other companies are paying for, and they're hedging it aren't they, so they agree to pay for it at a certain price or agree to charge the customer a certain price, and now the wholesale price has gone up and they can't meet that – they're basically going bust because the gas is too cheap" Wrexham – Suburban, ABC1, 18-45

Occasionally, people mentioned the recent electricity outages due to severe weather, although it was pointed out that this was more likely to be the local distribution network operator.

"There are supply issues which many people have suffered since the storm we had maybe a month or so ago, which if you were in rural Northumberland, left us without power for an extraordinary amount of time" Newcastle – Suburban, ABC1. 46+

Role of National Grid

The previous section demonstrates, at best, a rudimentary knowledge of National Grid's role and responsibilities. To enable people to have a more fulsome understanding of National Grid, people were shown a video which outlined the company's geographic coverage of both its gas and electricity transmission operations. It also highlighted that National Grid is responsible for the transmission of high voltage gas and electricity.

In addition to the video, people were also shown the information in Figure A4.4. Although the video and showcard include very similar information about National Grid, the reason for showing both was to understand which media people preferred for use in the follow up quantitative survey.

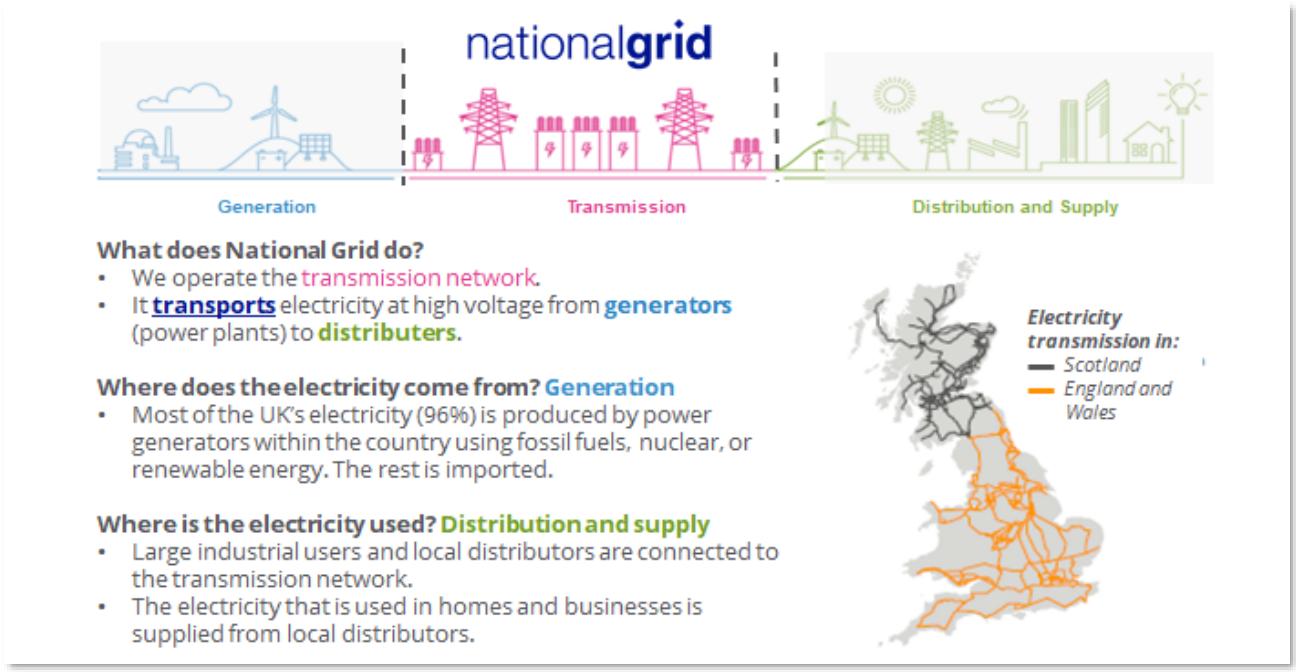

Figure A4.4: The electricity transmission network (session showcard)

The vast majority actually preferred the video because it was more dynamic and more memorable in terms of comparing the high voltage and pressure transmission to the motorways and major A roads, before it gets converted into lower voltage and pressure for distribution to homes and businesses (the B roads).

"I liked the simplicity of it (the video), talking about the equivalent of A roads, which I thought was an easy way of describing it" Bath - Rural, ABC1, 46+

"The analogy using the road system made it very clear actually" Wrexham - Rural, C2DE, 46+

"I really liked the video, I found it really informative and people relate better to pictures, so I would go video myself" Wrexham – Suburban, ABC1, 18-45

"I thought that (the video) was very clear, I thought it was clearer seeing a video like that rather than reading about it" Loughborough - Rural, C2DE, 46+

"I think it was very informative and gave a quick introduction to people who don't know anything about how this whole thing works. I found it very useful" London – Young/future bill payers

"I think I prefer the first one, as I think it's easier to follow. I think there's too many words on this, you just get lost in amongst it" Glasgow – Urban, ABC1, 46+

Figure A4.4 was not completely dismissed, even though some admitted starting to 'switch off'.

"I think both, I think this could be useful as a screenshot towards the end of the video or something like that because it gives more detail than the video did, for people who like that little bit more" Bath - Rural, ABC1, 46+

"I think sometimes it's good to have both, because some people respond better to video, some people respond better to the written word; sometimes if there's a lot of information in a short space of time in a video, some

people might not be able to take in all that information in one go. And if there is a survey on it straight afterwards, they might not remember, it might be handy to have some written information as well which they can refer back to" Wrexham – Suburban, ABC1, 18-45

"I think the two things complement each other. Yes, it's good that's to back on too, but the video explains what you're looking at" Newcastle – Suburban, ABC1. 46+

"I think the video is good for understanding the information but to take information away from and refer back to, the picture is better" London – young/future bill payers

Energy bill: value for money and affordability

This section looks at the constituent parts of the energy bill and particularly the National Grid element. It also discusses both value for money and the affordability of the electricity bill more generally.

National Grid element

To provide further context, Figure A4.5 was shown to participants to inform them what proportion of the energy bill was attributed to National Grid.

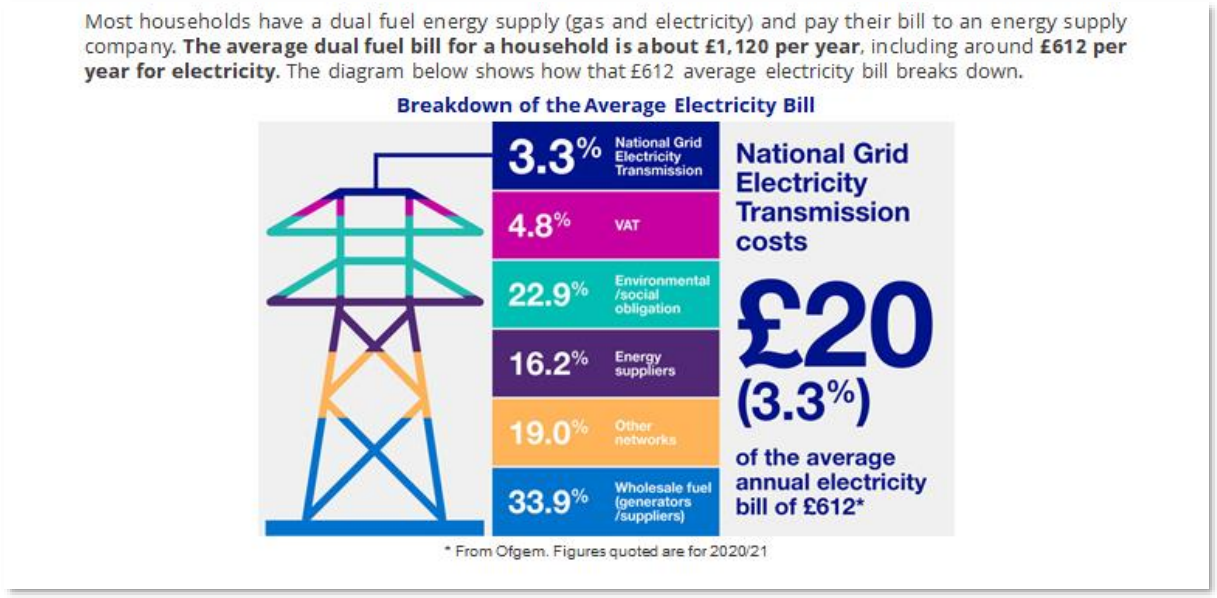

Figure A4.5: Breakdown of the average electricity bill (session showcard)

When asked what they thought about the proportion going toward National Grid, they were surprised by how small it was.

"It seems like quite a small percentage given what they do. Without them we can't do anything, so I'm surprised that their percentage is so small" Bath – Urban, C2DE, 18-45

"It's shocking really that that is the percentage for the most important bit if you like. The actual infrastructure of the electricity and only 3.3% of our money goes to investment in it. I was thinking around 10%…" Bath – Rural, ABC1, 46+

"It seems odd that the VAT is higher than the transmission percentage. It's a very small amount isn't it?" Wrexham - Rural, C2DE, 46+

"I don't know why National Grid with moving this energy all over the country, why it's so small in comparison to the wholesaler" Wrexham – Suburban, ABC1, 18-45

"It makes you wonder how the National Grid can make money and why we're charged so much" Loughborough - Rural, C2DE, 46+

"I am really surprised how low that is" Newcastle – Suburban, ABC1. 46+

"I think it's a very low number considering that without the National Grid the transaction wouldn't take place. Even though the energy suppliers do supply the energy, without National Grid they couldn't" London – young/future bill payers

"I thought it would be more, considering they do the bulk stuff" Glasgow – Urban, ABC1, 46+

There was one person who provided an explanation as to how it appears small per individual household, but when applied across all England and Wales households it amounts to a significant amount of money.

"It is quite a low cost over one person's annual bill, but when you multiply that by everybody that's supplying electricity too, then obviously that's a great big chunk of money, isn't it?" Wrexham - Rural, C2DE, 46+

Overall electricity bill

This section explains whether people thought their electricity bills were both value for money and affordable.

Value for money

There were mixed views as to whether people thought they received value for money, with almost half the participants saying that it was neither good nor poor value for money, as shown in Figure A4.6.

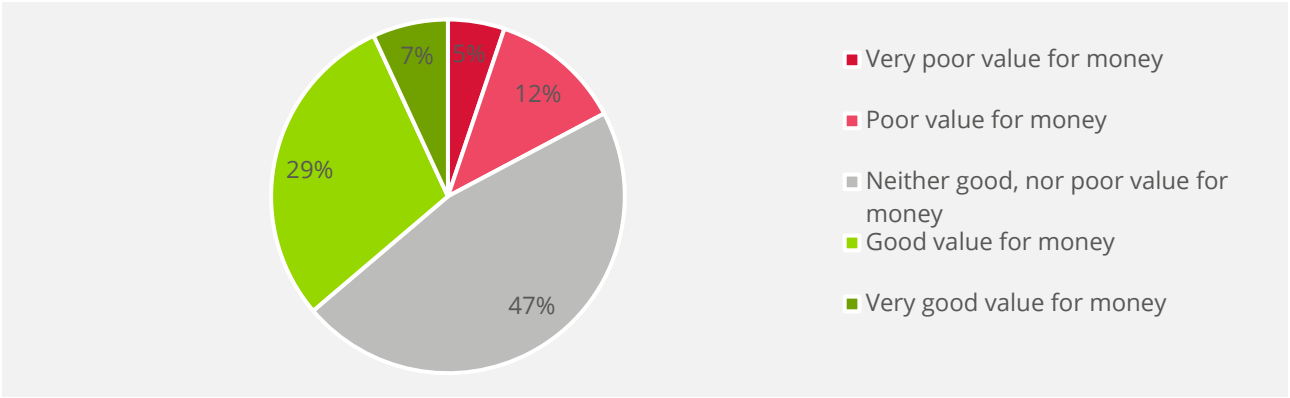

Figure A4.6: Response to "how would you rate value for money on your overall electricity bill?" (n=58)

Where people said they received value for money, one of the reasons was because they say how challenging life would be not being able to carry out everyday activities.

"If I work a whole month, £72 as a percentage of my income, so I can see, so I can watch TV, I think it's good value for money. Without I, we'd still be using candles for lights" Bath – Urban, C2DE, 18-45

"We're, fortunate to have it and we can't operate without it so it's a necessary evil, and if I had to take it away, I wouldn't like my life. It would have a massive impact. If we took away electricity, what would you do? Bath – Rural, ABC1, 46+

"It's just always there when you need it. We couldn't manage without it, and I think it's reasonably priced at the moment" Wrexham - Rural, C2DE, 46+

"Every time I flick the switch, the light comes on; every time I turn the oven on, it goes hot, so for what I need it for, I get value for money" Wrexham – Suburban, ABC1, 18-45

"I know people don't want to pay for electricity, but try living without electricity and see how you manage" Newcastle – Suburban, ABC1. 46+

There were a number of reasons for why people felt they received poor value for money on the basis of how it is impacting people's lives in terms of continued price increases.

"I think we've just seen so many increases over the past year or so, and I think it's just going to get worse. So, I suppose it's just concerns about paying more for the same thing, and you don't really see a lot of infrastructure improvements at the minute. So, you think where is the value? Glasgow – Urban, ABC1, 46+

"It's impacting family's lives, end of story. People are suffering; bills need to be cut, we're all trying to get by. It's too expensive, it's got to start coming down" Bath – Rural, ABC1, 46+

"My bills are very expensive at the minute. I understand its electricity throughout the house, unlimited, but I think the household are paying far too much" Wrexham – Suburban, ABC1, 18-45

Another said that having an all-electric house made it seem poor value for money

"I'm in a worse situation where my house is all electric like winter motes and hot water is all on electric so it's quite costly just for me to stay warm, I have to put the heating on and electric heating is crazy expensive, so my bill is constantly going up for just living in general" Bath – Urban, C2DE, 18-45

Where I live now, everything is electric; we've got no gas. And considering the price of gas to the price of electricity, it's very expensive,… seeing how much electricity we use just barely to keep warm, we are quite frugal with the heating, and being a pensioner, it's getting near the mark now. It's very expensive electricity" Loughborough - Rural, C2DE, 46+

People cited different reasons for saying it was neither good nor poor value for money, such as the trade-off of having electricity at the flick of a switch and the seeming high price

"I don't know, because it's amazing that we can turn the lights on at the flick of a switch and we very rarely get power cuts; it's just that when we pay the bill, it seems like a lot of money so it's difficult to say whether it's value for money or not" Loughborough - Rural, C2DE, 46+

"At the minute it is what it is, it's what we need to pay; I take on board everyone's reasons why we're very fortunate – but the fact that things are about to change possibly, pricewise, kept me there"

Newcastle – Suburban, ABC1. 46+

"It's just one of these things. It is good, and it's not. It's something that we heavily rely on, so we've just got to go with it" Glasgow – Urban, ABC1, 46+

One person in Bath said it was about the perceived lack of investment.

"I agree that we need it but why has it gone up so much? It's because there has been no investment" Bath – Rural, ABC1, 46+

Affordability

The vast majority of people said their electricity bills were affordable (Figure A4.7), just three people citing some difficulties paying it.

Most participants said that affordability was linked to prioritising their electricity bills with other utility bills and the mortgage.

"For us, it's one of the critical payments if you like. You have your mortgage, your gas, your electric. It's stuff you know you have to pay" Bath – Rural, ABC1, 46+

"It's up there with a mortgage payment in my opinion, you need electricity and gas to live in a house in our age" Wrexham - Suburban, ABC1, 18-45

"It's a necessity, we all need it, you have to manage where you spend your other money, so it's about what you need, not what you want" London – Young/future bill payers

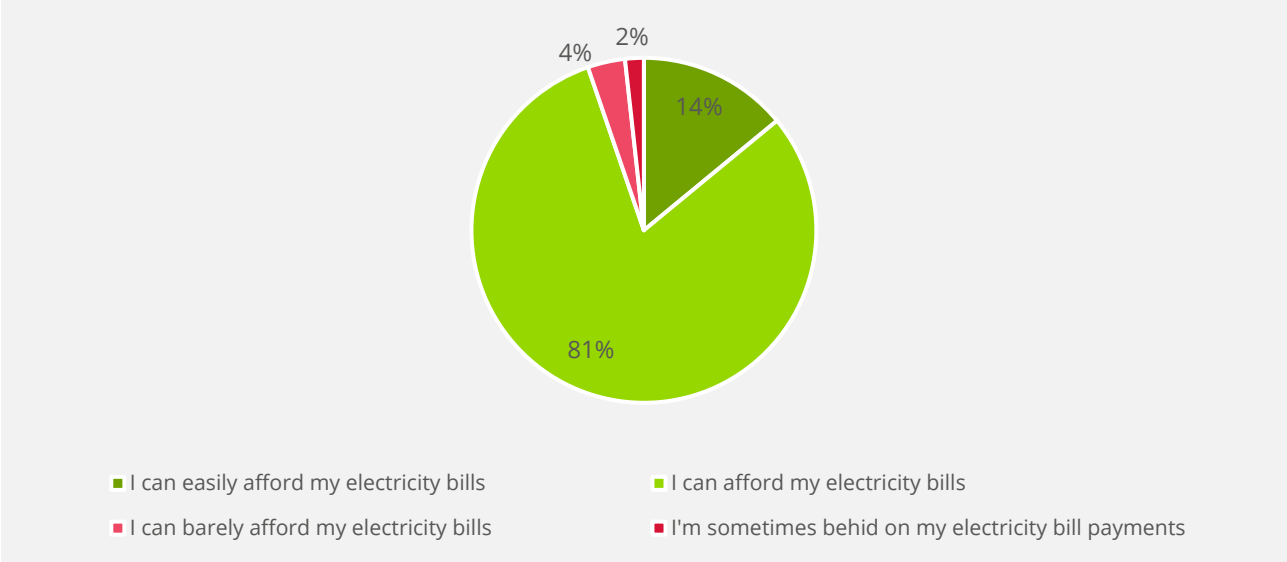

Figure A4.7: Participant perception of electricity bill affordability (N = 57)

There was a small number in some of the C2DE groups who said they could afford their electricity bills only because they were conscientious about how much electricity they use.

"I was going to say the bill is shocking. I keep turning my lights off, my heating to a minimum, because I am worried about, where are we going to be in a few months? But you've got to keep warm" Loughborough - Rural, C2DE, 46+

Some people had a rudimentary understanding about the various schemes and initiatives available from the government to help those who struggled to pay their bills. These included the winter fuel allowance, the warm home discount. Occasionally people got mixed up between the winter fuel allowance and cold weather payments, where the latter is provided when the temperature drops to zero or below for seven consecutive days. The price cap was rarely mentioned and when it was, people had little idea as to how it worked.

In general, participants thought it was not part of National Grid's remit to support consumers who struggled to pay their bills either because it is part of the electricity bill was the smallest proportion, or because it didn't have a direct relationship with consumers.

"I don't think they do, with the small minority of money they're getting" Bath – Rural, ABC1, 46+

"No, I think it's down to your own supplier" Wrexham - Rural, C2DE, 46+

"I'm a bit confused by it, because aren't we talking about National Grid? I mean the main cost is the supplier and the network coming in…" Loughborough - Rural, C2DE, 46+

"I think you just budget for it. And it's in your budget costs at the moment, but I think if the costs go up then it starts to become a different….something gives, and other things go" Glasgow – Urban, ABC1, 46+

"No, I don't think so. You know, if you look at that graph, that 3.3%, I think there are other organisations or parts of that graph that could contribute more than the National Grid" Glasgow – Urban, ABC1, 46+

However, some called for a more collaborative approach from all elements of the supply chain to be more efficient approach which was hoped would lead to less severe price increases in people's bills.

"I think all sections of it need to be as efficient as possible. It's incumbent on all of them really, to be efficient" Wrexham - Rural, C2DE, 46+

"If it's more efficient, and if they're finding innovative ways of transmitting the electricity, then maybe that might reduce costs if it's more efficient, and then obviously it could be passed down to consumers" Wrexham – Suburban, ABC1, 18-45

"I don't see why they can't all play a part to be honest, they all play their part in supplying it" Loughborough - Rural, C2DE, 46+

"I think it's got to be a joined-up thing across the networks, but not solely that National Grid should be targeting the ways to do it. But the other suppliers and the generators, definitely" Glasgow – Urban, ABC1, 46+

A couple of people also suggested that Ofgem should be playing more of a key role in the process.

"I don't think so, that's more for Ofgem managing it" Newcastle – Suburban, ABC1. 46+

"Ofgem are there for a reason so they're not doing that…" London – Young/future bill payers

National Grid Business Plan

It was explained to participants that National Grid had to submit a strategic business plan to Ofgem every five years and that it is currently in the middle of RIIO-2 (Revenue = Incentives + Innovation + Outputs).

Six key pillars of the business plan were presented, as shown in Figure A4.8, and people were asked to rank each in order of importance to them – 1 being most important, and 6 being least important.

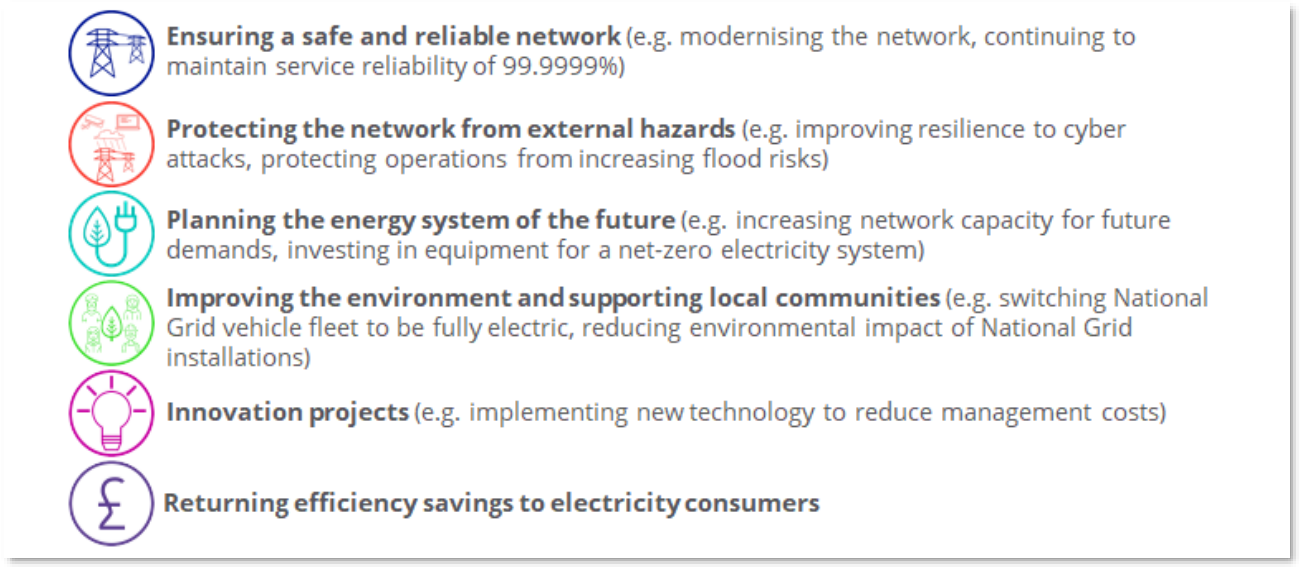

Figure A4.8: National Grid business plan (showcard)

The average ratings for each pillar are shown in Table . Ensuring a safe and reliable network was clearly the most important factor of the business plan, while innovation projects was perceived as least important by some distance. The other four factors were given average or a little under average ratings, although the least important of these was around improving the environment.

Table A4,2: Business plan item rankings where 1 is of highest importance (n=56)

Business Plan Pillar	Average Ranking
Ensuring a safe and reliable network	1.45
Planning the energy system of the future	3.00
Protecting the network from external hazards	3.20
Returning efficiency savings to electricity consumers	3.54
Improving the environment and supporting local communities	3.66
Innovation projects	5.07

When asked for reasons why they ranked the factors as they did, people found it difficult to articulate because all the factors were seen as important, and apart from 'ensuring a safe and reliable network' and 'innovation projects' people found it challenging to split the others. This was typified by the following

comment.

"I was umming and ahhing over which way to put it to be honest, because they were all a much to the muchness, apart from number 1 and number 2, I didn't know which way to put them really, but I thought the other ones might have been a bit more important, that's why I've done it that way, almost like a cascade really. So yeh, it's difficult to choose after the first two, really" Wrexham – Suburban, ABC1, 18-45

There were some cases where people had very clear ideas. For example, the environment was considered more important for people in higher socio-economic groups, and was articulated in terms of protection, habitats, net zero and future generations.

"I'm quite big on the environment, we've only got one little blue planet to live on at the minute. I'd rather we looked after it, so anything to do with protecting the environment, better efficiency, I'm all for that" Bath – Rural, ABC1, 46+

"If we continue to destroy the planet, there's no point having electricity if we haven't got a planet" Wrexham – Suburban, ABC1, 18-45

"If we're not in a position where we're looking after the environment, we're neglecting our children and their children's future, so you know, I don't mind paying a bit extra if we are taking care of our environment for the future" Newcastle – Suburban, ABC1. 46+

"I think animal habitats and the wellbeing of wildlife, and just generally the impact on water systems…" Glasgow – Urban, ABC1, 46+

Others ranked the environment lower because they thought some of the other factors would have a positive effect on the environment as a matter of course.

"I mean obviously the environment does help, but I think innovative projects and improving technology will help make the environment better" Wrexham - Rural, C2DE, 46+

And there was one person who ranked the environment lower on principle.

"I'm a stern believer in fossil fuels, I think we're sitting on so much coal, let's use it" Newcastle – Suburban, ABC1. 46+

Returning efficiency savings was sometimes rated higher.

"I am a consumer, and that is my prior objective - I would want maximum efficiency for me, so I get the best price" Wrexham - Rural, C2DE, 46+

On rare occasions, innovative projects received higher than its average rating.

"If we don't innovate, we're not going to be able to have the efficiencies, and therefore we need to invest in it. We've got tech and we need to use it" Bath – Rural, ABC1, 46

"If they can find a way of doing things better and possibly cheaper, then the benefits would be good for National Grid, and it could also be passed on to customers" Newcastle – Suburban, ABC1. 46+

There were also instances where ensuring a safe and reliable supply was not always ranked high.

"I just feel the other things in the list might be contributing factors to actually make sure that overall, the network is safe and reliable" Wrexham - Rural, C2DE, 46+

"I just expect that to come as natural, I wouldn't really expect that to be in their business plan; it's not something that they should plan for, it should just come as standard really" Wrexham – Suburban, ABC1, 18-45

Environmental investment

An explanation was provided to participants that there are some areas where investment is mandatory for National Grid, such as 'ensuring a safe and reliable supply', and some areas where discretionary investment can be made, such as improving the environment.

Following this explanation, participants were asked what environmental factors National Grid has to consider as part of its investment planning. Some people immediately focused on the information in the pre-reading which concerned the displacement of habitats and wildlife as a result of putting cables underground.

They talked about changing the overhead cables, moving them underground, so I guess that will be digging up hedgerows, and destroying wildlife and animals" Bath – Urban, C2DE, 18-45

"I did actually think, wait a moment, what impact is that going to have on our ecosystems, biodiversity? It's all well and good but what is the carbon footprint of doing those works? And it's like anything, what are the C02 emissions by doing that? Is it going to be a positive step?" Bath – Rural, ABC1, 46

"Keeping habitats as much as they can, and they're planning on going underground, is that right? That will obviously disrupt a lot of the countryside" Wrexham – Suburban, ABC1, 18-45

However, it was acknowledged that where this happened, sites would be restored to their previous state.

"…what they're doing to bring it back up afterwards, I imagine that's part of being allowed to do it in the first place" Wrexham – Suburban, ABC1, 18-45

"I know they said they would put everything back if it went underground, but I'd think it would have a detrimental effect on biodiversity and nature while they do it" Loughborough - Rural, C2DE, 46+

Others talked about reducing CO2 emissions more generally.

"It's just about getting our emissions down, getting to net zero, to obviously stop the increase in temperature of the earth, because obviously that is not sustainable. We've got to make a change now before it's too late" Bath – Rural, ABC1, 46

"If engineers are driving around in cars all day, burning fuel, that's not good for the environment either" Wrexham - Rural, C2DE, 46+

"I think it's very important, they've got to address these issues because it's national policy…" Loughborough - Rural, C2DE, 46+

National Grid and electricity infrastructure

This section considers the extent to which people notice National Grid infrastructure both generally and, in the countryside; and whether they have any concerns about the presence of this infrastructure specifically in rural landscapes.

Visibility of National Grid infrastructure - generally

Before discussing people's attitudes, motivations and behaviours about National Parks and Areas of Outstanding Natural Beauty (AoNB), and the Visual Impact Provision (VIP), people were asked to what extent they noticed large electricity infrastructure, (Figure A4.9), as part of their daily lives.

Figure A4.9: Examples of National Grid infrastructure (showcard)

Figure A4.10 shows that the most people noticed electricity infrastructure wither quite a lot, or not very much. Where people had noticed such assets there was some negativity towards them, often describing them as 'ugly'.

"I certainly don't get any positive feelings looking at a pylon, to be honest. It's not the most attractive of things to see" Wrexham - Rural, C2DE, 46+

"I live in the countryside so they do really stick out; I can literally hear them all the time, if I go on a walk, I can just hear them, so it negatively affects everything, their presence really" Wrexham – Suburban, ABC1, 18-45

"They're not very nice to look at, they could possibly be camouflaged a bit better, but it's a necessary evil if we want to live the life we're living at the moment" Newcastle – Suburban, ABC1. 46+

"I think they are just a necessary requirement so you kind of just have to get over it" London – Young/future bill payers

"I'm in the suburbs of Glasgow, quite near a substation, I'm driving past it every day, it's just like 5 minutes from my house. It's just a bit of an eyesore" Glasgow – Urban, ABC1, 46+

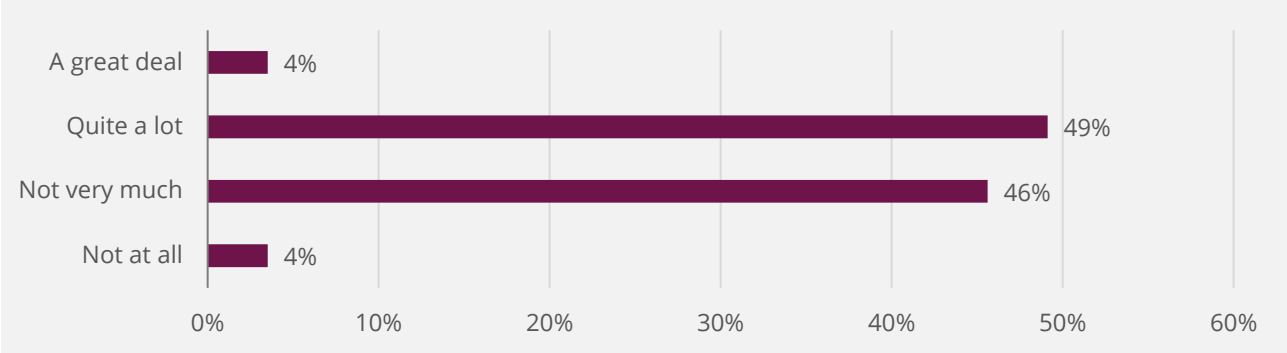

Figure A4.10: Response to "To what extent do you notice electricity infrastructure in your daily life?" (n=58)

There was also a misplaced pre-conception that the infrastructure let off radiation which would potentially impact people's health. Even though this is not the case, this was a concern for people.

"With the overhead lines that you see here, there was talk that they let off radiation, and there was research to suggest that they could possibly link to cancer" Wrexham – Suburban, ABC1, 18-45

Many of the participants noticed overhead pylons on their daily commute and were quite indifferent towards them.

"I drive down the M26 to work, and I drive past the primary substation near the oil refinery and see all the overhead pylons; they don't offend me in any way, shape or form" Wrexham – Suburban, ABC1, 18-45

"They don't bother me when you're driving down the motorway and you see them all" Loughborough - Rural, C2DE, 46+

A small number of people who lived near National Grid infrastructure also noticed the noise of electricity when it was raining.

"I can literally hear them all the time, if I go on a walk I can just hear them, so it negatively affects everything, their presence really" Wrexham – Suburban, ABC1, 18-45

"It's alright, until it's a bit damp and a bit rainy and then it gets a bit noisy with the crackling and what have you" Loughborough - Rural, C2DE, 46+

"You can hear the static crackle off the lines which must be them losing power from point A to point B" Newcastle – Suburban, ABC1. 46+

In the main though, even people who notice electricity infrastructure in their daily lives are not too bothered about it.

"I'm a keen walker, cyclist etcetera and I do notice the pylons, but to be honest, they don't upset me too much" Loughborough - Rural, C2DE, 46+

"You notice them but it's not something that upsets me or I find an eye-sore or anything like that; they're just there and they always have been" Newcastle – Suburban, ABC1. 46+

"They don't really bother me at all, because they're all done in a good way..." London – young/future bill payers

"They're just part of the landscape, nothing too offensive" Glasgow – Urban, ABC1 46+

Visibility of National Grid infrastructure - countryside

People were also asked how much they noticed electricity infrastructure in the countryside. Figure A4.11 shows several more people notice pylons and overhead lines to a greater degree compared to in everyday life, with fewer noticing them not very much.

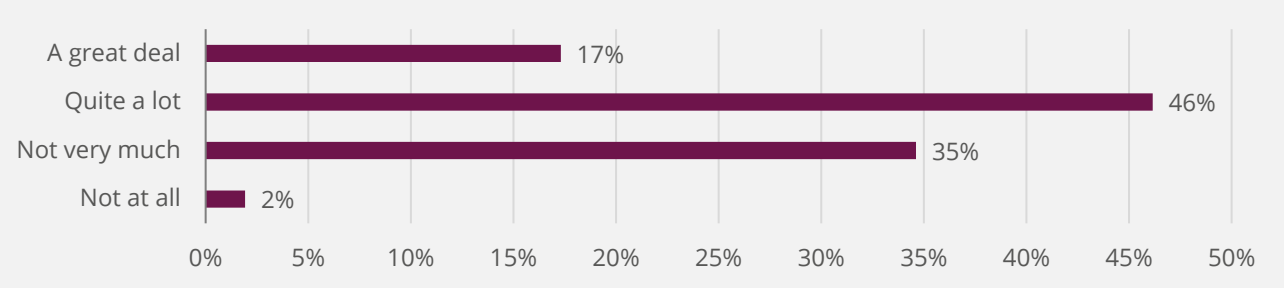

Figure A4.11: Response to "To what extent do you notice electricity infrastructure in the countryside?" (n=52, one group did not complete this poll)

People were then asked to what extent they were concerned about National Grid infrastructure being visible in National Parks and AoNBs. Figure A4.12 shows that around half of the participants said they were concerned about pylons and overhead lines.

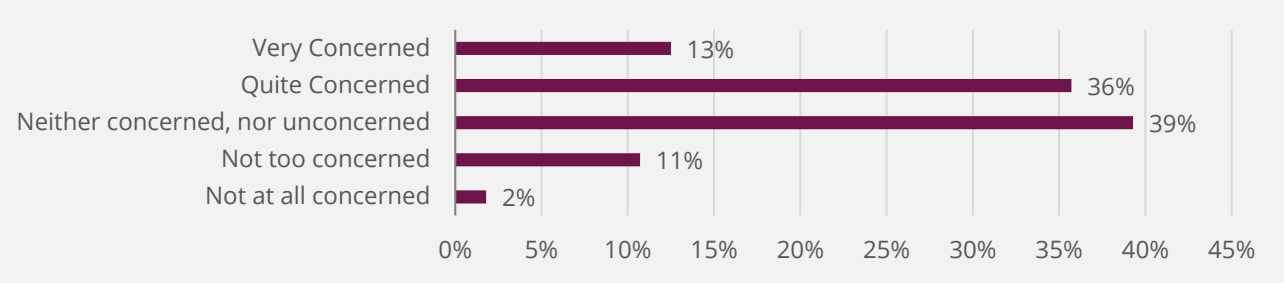

Figure A4.12: Concern about electricity infrastructure in National Parks and AoNBs (N = 56)

Much of the concern related to their visual impact with 'eyesore' often being used, as well as other descriptions such as 'ugly' 'unattractive' and a 'blight'

"Sometimes I think they are quite ugly and obviously it's needed, but in countryside it can be a bit of an eye-sore" Bath – Urban, C2DE, 18-45

"I do think they make the environment look ugly, especially some of the more beautiful areas you walk out to and you see cables and pylons across everywhere" Bath – Rural, ABC1, 46

"I mean, pylons are not the most attractive of things when you're driving past them, especially when they're plonked in the middle of a field..." Wrexham - Rural, C2DE, 46+

"In places like that which are so beautiful, they do really stand out..." Newcastle – Suburban, ABC1. 46+

"When you go to a green environment or you see a nice green space and you see the pylons and cables, you do think they've ruined the natural landscape, but they are essential" London – Young/future bill payers

"The impact on environment, the aesthetics of it. It just basically ruins the countryside for me, when you see massive pylon runs going across beautiful landscapes" Glasgow – Urban, ABC1, 46+

"It's the potential to ruin the natural beauty of the place, but also the disruption of wild-life and the eco-system is quite delicate" London – Young/future bill payers

For some who were not concerned or indifferent towards pylons, they were seen as a necessity and just part of the scenery.

"I probably just switch off from it, it's one of those that's kind of a necessity so I don't really take notice of it; it's always been there, wherever you're driving in the countryside" Bath – Urban, C2DE, 18-45

"It doesn't really penetrate in any way for me. It's just something I'm used to seeing in these situations. I don't think much of it" Bath – Urban, C2DE, 18-45

"Personally, I don't notice much about the pylons, they are there for a purpose; they're not very pretty but I see them as being quite functional" Bath – Rural, ABC1, 46

"I don't see them as unsightly, but I do see them as a necessary evil to provide us with electricity" Wrexham – Suburban, ABC1, 18-45

"They are a necessity so it needs to be there, I'm not too concerned; if it was pretty excessive you might get more concerned" London – Young/future bill payers

For others, there was both an interest and a fascination with pylons.

"It just makes me think about how it all works and how it gets distributed and things like that, even though I do think it is an eye sore in areas of natural beauty, sometimes I think it's quite cool" Bath – Urban, C2DE, 18-45

"We do notice them when we're out walking, and think they are quite interesting, but they don't bother me at all" Bath – Rural, ABC1, 46

"I do quite a lot of walking and I have to say you do notice them, because they're very visible, but sometimes they can be strangely beautiful in some places" Bath – Rural, ABC1, 46

Familiarity with National Parks and AONBs

Familiarity with National Parks and AONBs was quite high (Figure) with well over half saying they were quite or very familiar. People spontaneously mentioned places like the Lake District, the Peak District, the Forest of Dean, the Cotswolds, Exmoor, Dartmoor, Loch Lomond, the Cairngorms and the Brecon Beacons.

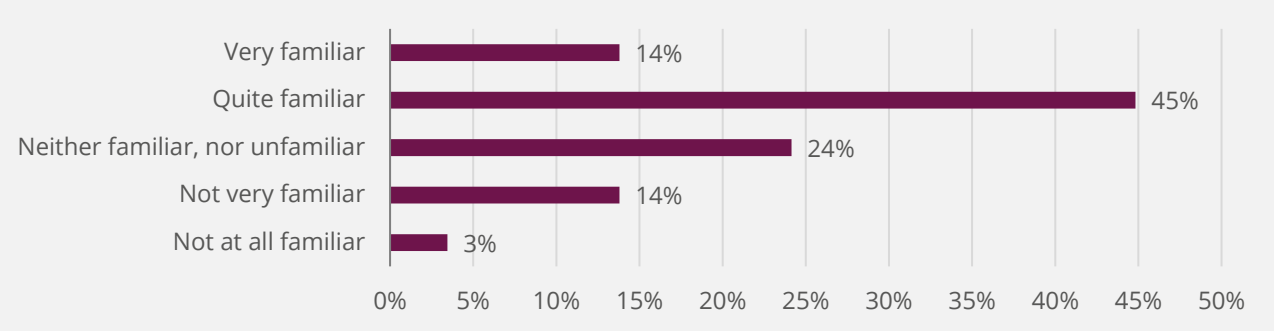

Figure A4.13: Familiarity with National Parks and AoNBs (N = 58)

People were generally much more familiar with National Parks than they were with AONBs.

"I've never heard that term (AoNB) used. If someone said to me, name one area of outstanding national beauty, I couldn't name one, it's just not something I've heard of" Bath – Urban, C2DE, 18-45

"I've heard the term but if you asked me to name them, I'm not sure I could name any" Bath – Urban, C2DE, 18-45

"I'm from Wrexham so Snowdonia is only a stone's throw away" Wrexham – Suburban, ABC1, 18-45

"We live on the edge of the Peak District, which is very picturesque. Over the years we've walked a lot of the country, the national parks and things, so we're quite familiar with them" Loughborough - Rural, C2DE, 46+

"We do go up to Aviemore and the Cairngorms quite a lot, which I suppose is a National Park" Glasgow – Urban, ABC1, 46+

Differences between designated areas of beauty vs non-designated ones

Generally, people were not aware of aware of the differences between designated and undesignated areas of beauty. Most people stated the obvious that there was 'unlikely' to be much in the way of various infrastructure such as buildings and roads.

"I guess, they're protected so you can't build on them…" Bath – Urban, C2DE, 18-45

"I presume they are enclosed because they are of national interest or… you're not allowed to build pylons or whatever in them because of the natural beauty…" Wrexham - Rural, C2DE, 46+

"They're protected on what you can do with them and what you're allowed to do. You can't touch them at all can you, with buildings; they're conservation areas" Loughborough - Rural, C2DE, 46+

A small number of people were aware that designated areas were protected and subject to more stringent planning conditions.

"There is different legislation covering them, on what you can do and stuff" Bath – Urban, C2DE, 18-45

"Development is a lot more regulated in them, the planning issues etc.." Newcastle – Suburban, ABC1, 46+

"Planning would be a lot more difficult to get, certain activities wouldn't be allowed to take place there" London – Young/future bill payers

There was also a view that that designated areas of beauty were more likely to have a greater variety of variety of wildlife.

"There's probably loads of different wildlife depending on which one you go to..." Bath – Urban, C2DE, 18-45

"There'd be protected species there I suppose – flora, fauna, animals..." Wrexham - Rural, C2DE, 46+

"Just thinking about species, and birds of prey, and species like that which have their natural habitats in these places and because there are less road networks they are more protected in that area" Newcastle – Suburban, ABC1, 46+

"They are areas designated for wildlife, have a richer bio-diversity and they are protected" London – Young/future bill payers

Frequency of visits to National Parks & AoNBs

The frequency of visits to National Parks and AONBs was varied for people, with the majority having visited them at least twice a year (see Figure A4.14).

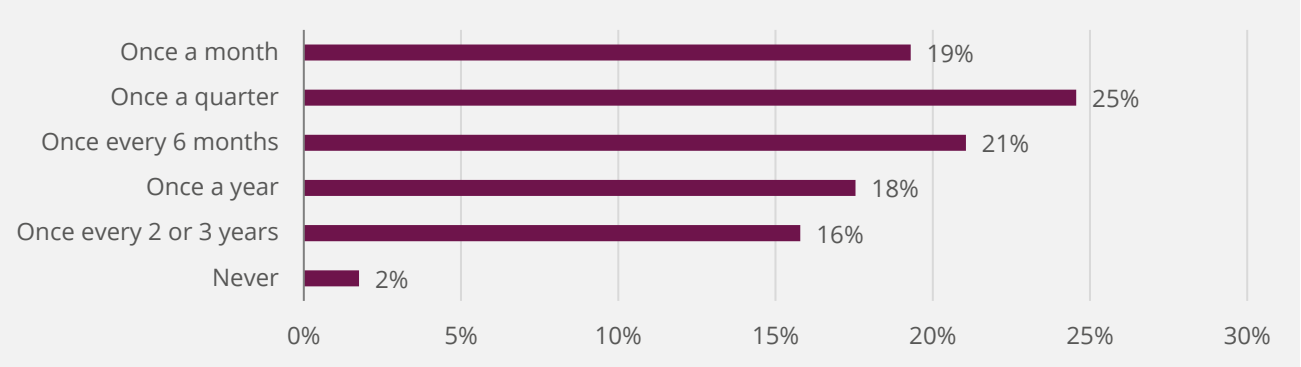

Figure A4.14: Frequency of visit to National Parks and AoNBs (N = 57)

There was a wide range of reasons for people visiting National Parks and AoNBs (Table A4.3).

Table A4.3: Reasons for vising National Parks and AONBs (n=58)

Reason	No. of mentions
Enjoy the fresh air and outdoors	47
To enjoy the scenery	46
Spend time with family & friends	42
To relax & unwind	39
Walk & exercise the dog	29
Exercise eg running, walking cycling	29
Peace & quiet	27
Mental health	26
To enjoy the wildlife	20
Break from work	18
Entertain the children	15
Other e.g. holidays, weekend breaks	4

Visual Impact Provision

Participants were provided with an explanation of the Visual Impact Provision (VIP) programme being carried out by National Grid. This outlined a series of projects in the UK where a partnership between Ofgem and energy transmission companies - National Grid in England and Wales, and Scottish Grid and SSEN in Scotland - to underground overhead powerlines; the aim being, to help reduce the visual impact of the electricity transmission infrastructure in these designated landscapes. Summary details were provided in Figure .

Figure A4.15: VIP summary (showing before and after undergrounding power lines)

Awareness of 'undergrounding' electricity cables

Previous to the focus group, people were unaware that electricity cables could be put underground.

"I hadn't heard of anything like that before, it's just you see so many electric pylons everywhere, you just presume that all of the transportation of the electricity is overhead, on the pylon" Bath – Urban, C2DE, 18-45

"I had no realisation really that it existed or was going on. You've seen these pylons up for a long time and I had no idea that the process was going on to remove them" Loughborough - Rural, C2DE, 46+

"I didn't know about the undergrounding, the cables and pylons and being able to manage that in locations, so that was new information for me" Newcastle – Suburban, ABC1, 46+

"I didn't know that they were doing it, no I had no idea that this was coming or proposed" Glasgow – Urban, ABC1, 46+

Attitudes towards 'undergrounding' electricity cables

The majority of participants were positive about the undergrounding of electricity cables in National Parks and AoNBs, as shown in Figure A4.16.

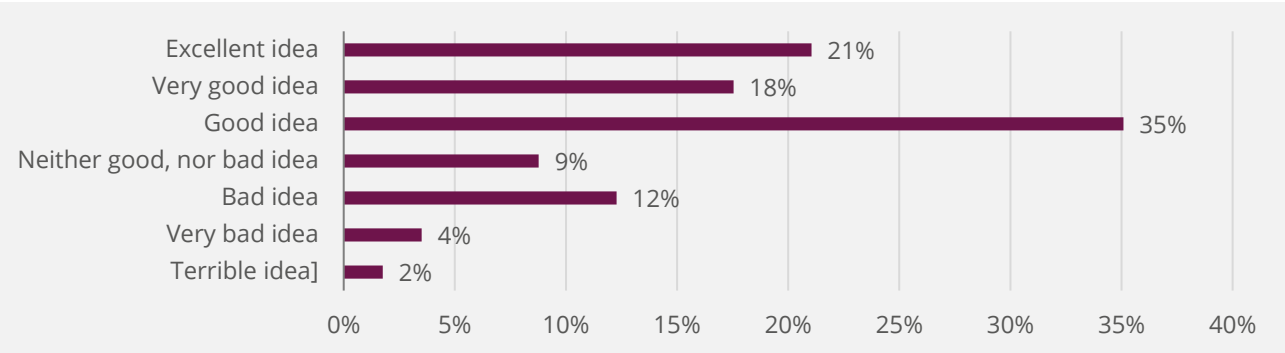

Figure A4.16: Whether 'undergrounding' is a good or bad idea (N = 57)

People were asked for their top two reasons as to why they thought that 'undergrounding' was a good idea. The reasons for saying it was a good idea are shown in Table , the main one being about that protecting the scenery which was mentioned twice as many times as any of the other reasons.

"It's less of an eye-sore and in the long run less damage to the environment" Bath – Urban, C2DE, 18-45

"I don't like seeing them, because they look ugly and they make the countryside look ugly" Bath – Rural, ABC1, 46+

"...because it takes away the impact of the unsightly structures" Wrexham – Suburban, ABC1, 18-45

Table A4.4: Reasons for undergrounding being a good idea (N = 58)

Reason	No. of mentions
Protecting or restoring the landscapes and views of the countryside	36
Replacing old infrastructure	17
Modernising the grid	17
Better for future generations	14
(Potentially) easier for maintenance	5
(Potentially) better for wildlife	4
Other	1

One person in Loughborough suggested that another benefit of undergrounding is that the infrastructure is protected against storm damage.

Where people thought undergrounding was a bad idea, they were mostly concerned about the potential environmental impact manifested in terms of disturbances to wildlife and the landscape during construction, as shown in Table A4.5.

Table A4.5: Reasons for undergrounding being a bad idea (N = 58)

Reason	No. of mentions
Disturbance to wildlife during construction	27
Disturbance of landscape during construction	22
Cost	22
Carbon emissions from the work	8
Construction disruption e.g. traffic delays	7
Unnecessary to keep grid running	6
Other	2

"When I did the reading about it, it said it would put everything back to how it was, but you can't, in terms of the wildlife, how can you say it will go back to how it was" Wrexham – Suburban, ABC1, 18-45

"They're talking about a lot of kilometres of cables that they potentially want to dig up, or dig down, so the impact on the environment is greater than seeing them in the field" Bath – Urban, C2DE, 18-45

"I do think it will solve the problem visually, but it's going to disrupt so much of the natural world, is it really worth it? Wrexham – Suburban, ABC1, 18-45

Cost was also seen as a key factor, although people at this stage had no idea how it would impact on their energy bills till the specifics of the North Wessex Down and the overall VIP programme were discussed. Their perceptions were based on the headline figure of the £500 million.

"It sounds massively expensive, I have to be honest" Bath – Urban, C2DE, 18-45

The pre-reading information sent to participants explained that almost £500 million of funding was in place to undertake the undergrounding work. However, there were several people who thought this money could be more effectively spent in other areas. Using that money to reduce people's energy bills was mentioned several times.

"I'd much rather Ofgem put that towards reducing our utility bills over the coming year" Bath – Rural, ABC1, 46+

Others said the budget could be spent on the electric vehicle structure.

"I'd rather £500 million was invested in more charging points for electric cars, so more people can look at getting them" Bath – Rural, ABC1, 46+

Other concerns about 'undergrounding' included repair and maintenance issues.

"I do think it's a good idea but it's a lot of work, a lot of money, and at the moment with them being above ground, I'm assuming works can be carried out quite easily, whereas when they're underground and something needs to be done, they're going to have to dig it up, repair it, and dig it up again. That would be the downside, that's why I just put 'good', because there are downsides to it as well" Bath – Urban, C2DE, 18-45

"Has it been checked how easy it is to maintain it, because surely if something goes wrong all the landscape will have to be dug up again?" Loughborough - Rural, C2DE, 46+

"If you have a problem with an overhead system, you can more or less see where it's going to be. If you have a problem with an underground system, that's when you start to cause some disruption" Newcastle – Suburban, ABC1, 46+

"I think it's important to consider, if something goes wrong, what's the timeline for fixing that, because everything will have to be dug up again and that will have impacts on the environment forever" London – Young/future bill payers

Furthermore, there were also some health-related concerns.

"Isn't there lots of work on about how high voltage cables create magnetic fields around them which aren't very good for people's health?" Bath – Urban, C2DE, 18-45

There were several people who could see both pros and cons with putting electricity cables underground, even if some of the downsides were ill-informed.

North Wessex Downs VIP

In addition to the general information about the VIP programme, specific details of the North Wessex Downs VIP project were also shown to respondents, as shown in Figure A4.17, Figure A4.18 and Figure A4.18 below.

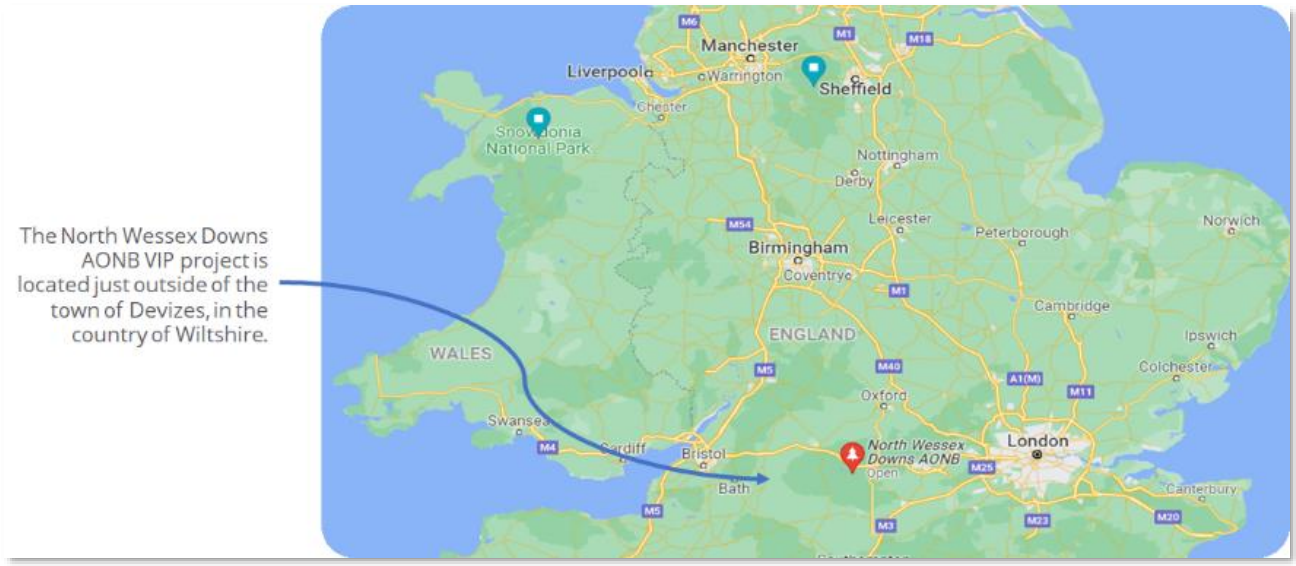

Figure A4.17: Location of the North Wessex Downs project (showcard)

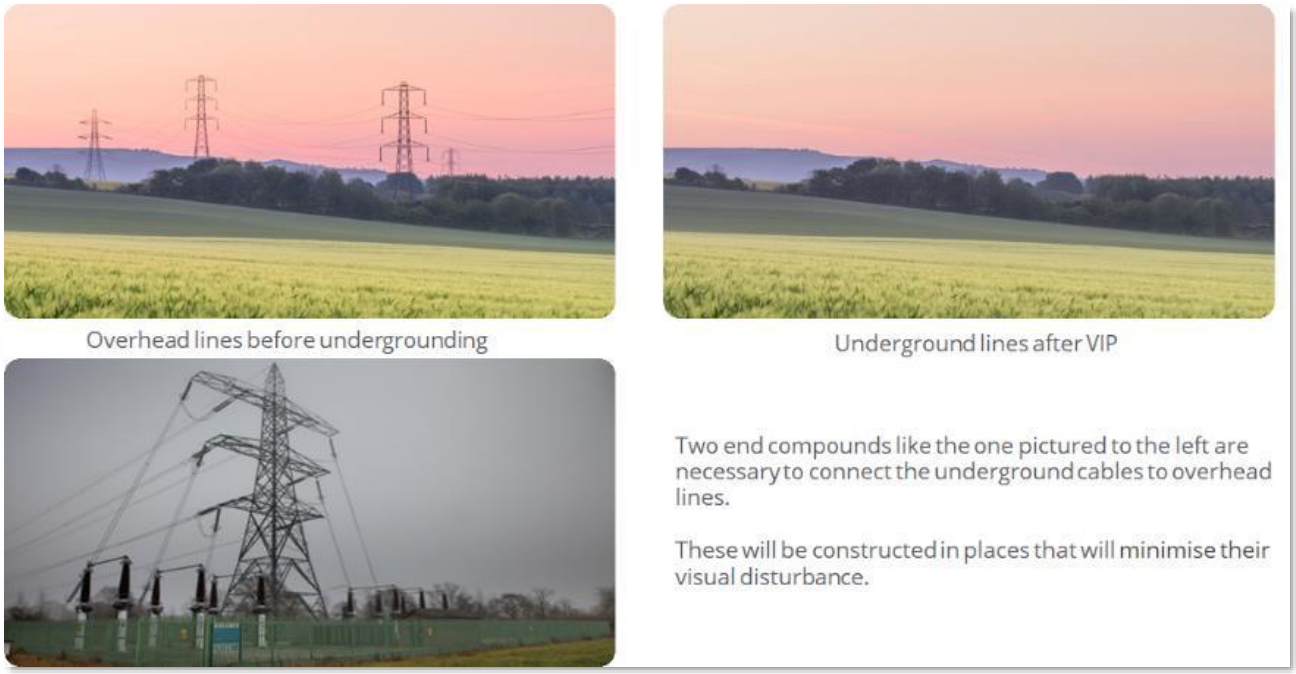

Figure A4.18: Images of the North Wessex Downs project (showcard)

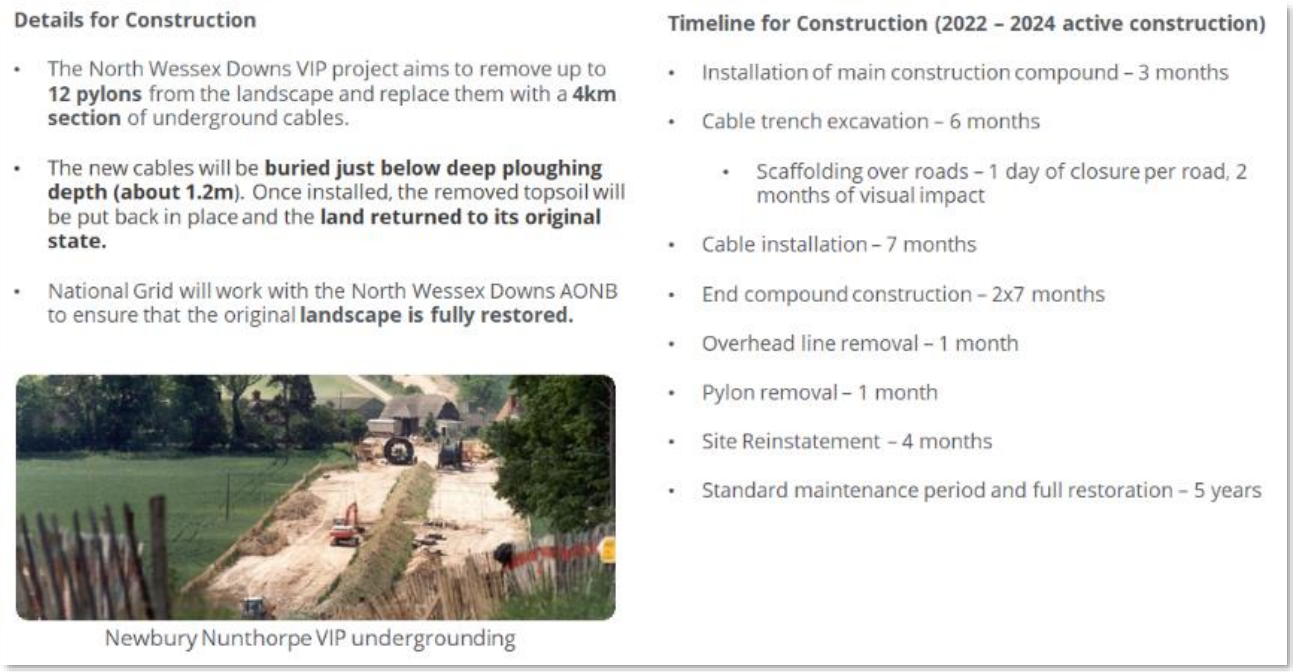

Figure A4.19: Construction of the North Wessex Downs VIP (showcard)

Having been presented with the above facts and figures, participants were asked for their general views towards the North Wessex Downs project, and what they thought the pros and cons were. Many felt it was a good idea in terms of removing the pylons and powerlines to improve the visual impact.

"Personally, I feel it sounds good and they are eye-sores, there's no denying that…" Bath – Urban, C2DE, 18-45

"I certainly think the big one is that the landscape is fully restored to how it was, so I picked up on you saying that there's less faults with this, so providing there's some protection of the wildlife and the ground as it's being down and then it's fully restored, it seems win-win to be fair" Loughborough - Rural, C2DE, 46+

"The change in the countryside is absolutely phenomenal when you look and you don't see the big cables" Glasgow – Urban, ABC1, 46+

But there were concerns about the potential upheaval and subsequent consequences.

"It looks much better without the pylons, but what if you're in this beautiful national park or area of outstanding beauty and you've taken away the pylons and then you've got to dig up all the underground stuff, and then you're stood in the beautiful park and it looks rubbish because it's all dug up anyway" Bath – Urban, C2DE, 18-45

"It's a fair distance that they're undergrounding, if you look at the before and after it does look like they return it to the landscape before the work was undertaken" Wrexham – Suburban, ABC1, 18-45

"It's going to be two years just to take down 12 pylons. It's a lot of disruption just to put some cables underground" Glasgow – Urban, ABC1, 46+

Questions and concerns were raised about the impact to wildlife and whether the disruption was worth it in the long run.

"...the disruption that's going to be caused on animal habitats and things like that. For the sake of a more pleasant view, it a bit outweighs... " Bath – Urban, C2DE, 18-45

"The end result might be good but it seems an awful lot of trouble to go to, to get to that stage - the cost of it, the cost to the environment and everything else associated with it, you've got to wonder whether it is long term worth it" Loughborough - Rural, C2DE, 46+

"It's reassuring to know that they are working alongside the AONB to make sure it's restored, but I guess it's just the damage to habitats and things that they won't be able to restore, so yes they may be able to get the landscape back, but there will be things that are lost completely" Newcastle – Suburban, ABC1, 46+

There was also a perception that two years construction time to lay four kilometres of underground cables was too long.

"It's a long time for four kilometres, given there are 570 kms of these pylons in national parks" Bath – Urban, C2DE, 18-45

"It looks like quite a lot of time to take down such a small number of pylons, in respect of how many there are around the place. Two years to take down 12 pylons, bury the cables underground, it seems quite a long time" Wrexham - Rural, C2DE, 46+

"It does seem an awful lot of work and a long period of time if it's only 12 pylons" Loughborough - Rural, C2DE, 46+

Some thought the timescales were quite reasonable...

"I think the timescale is not that bad, really. To get rid of 12 pylons, to have this inconvenience, but once it's done, it's done. And I think the improvement will last a lot longer than the cost of excavation etc. So once it's done it'll be beneficial thereafter" Wrexham - Rural, C2DE, 46+

"It's actually quicker than I thought it would have been" Newcastle – Suburban, ABC1, 46+

"I think it's good and it's good to see the timeline, and personally I think although two years seems like a long time, I don't think it's that long for how much they have to do, and the fact that they are restoring the natural landscape by the end of it, I don't see a big issue" London – Young/future bill payers

However, there was some occasional cynicism as to whether the timescale would be adhered to as experience suggested that timescales were rarely achieved with big construction projects.

"The time-scales look like they wouldn't impact us as much but I never trust timescales as much when it comes to building work and things like that. I think building work always goes over from what I've seen and experienced. Giving a rough idea is great but realistically is it going to take that time or be a lot longer?" Wrexham – Suburban, ABC1, 18-45

"That's fantastic if they stick to it, but how many times do you start a project and five years later it's still not going because of delays" Glasgow – Urban, ABC1, 46+

Although the North Wessex Downs VIP project is primarily about improving the visual impact of the landscape, there were two positive side effects that were spontaneously mentioned in Glasgow. One was

that the value of house prices would increase for those people who lived in the area. The other factor, supporting the earlier point on why undergrounding in general is a good idea, was that pylons and overhead lines would not be exposed to severe storms, thus reducing the risk of a major outage.

One person in London failed to see the point of undergrounding electricity cables.

"I just think it's a waste of time and money and resources that would be better spent somewhere else on a quite dilapidated system, like modernising the network and ensuring everyone has fair access to power..." London – Young/future bill payers

Acceptability of North Wessex Downs VIP and proposed VIP plans

All the above views were provided before people were shown the actual impact of the North Wessex Downs VIP project on people's bills, which was four pence a year from 2022-2047. Having received this information, participants were asked how acceptable the project is.

As shown in Figure A4.20, the vast majority said the North Wessex Downs VIP was acceptable, with many stating how little it was and that they thought it was going to be much higher. This certainly seemed to allay people's cost concerns.

"It's only 4p, overall, I thought it was going to be higher than that" Bath – Urban, C2DE, 18-45

"The cost to me of 4 pence a year is not anything, so from a personal point of view it's not going to make a difference to me" Bath – Rural, ABC1, 46+

"Four pence a year, it's nothing really is it, in comparison to other bills that are going up. And for a project to be undertaken of such magnitude, I think it's reasonable" Wrexham - Rural, C2DE, 46+

"Four pence a year doesn't make any difference to me" Wrexham – Suburban, ABC1, 18-45

"You can lose a pound down the side of the sofa, can't you; a pound is nothing, I'd say it's completely acceptable" Loughborough - Rural, C2DE, 46+

"I thought it would cost a lot more than 4p, to be honest" Glasgow – Urban, ABC1, 46+

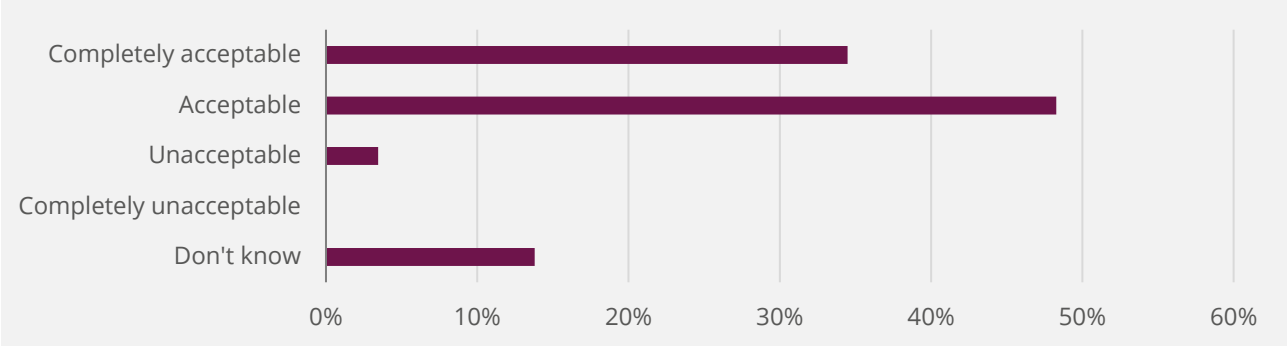

Figure A4.20: Acceptability of the NWD project (N = 58)

Although the North Wessex Downs VIP project was acceptable was largely thought to be acceptable, there was a small number of people with reservations around the principle of doing it...

"I'm happy to pay an extra 4p a year on my bill, that has no bearing on me whatsoever, but I'm not convinced the project is the right thing to do" Wrexham – Suburban, ABC1, 18-45

"I'd say it's slightly acceptable because it removes the ugly overhead lines but at the same time you could use that money to put in something else" London – Young/future bill payers

...and whether there is transparency about the bill impact.

"I think the cost is absolutely fine, no issue, if they're being completely honest and that is what it will be, I don't see an issue" Wrexham – Suburban, ABC1, 18-45

There was also the potential issue of cost creep.

"I've never seen a project that goes to cost anyway, they always go over and I'm sceptical about this 4p" Loughborough - Rural, C2DE, 46+

Factors that influenced people's acceptability of the North Wessex Downs VIP project varied, although nature and wildlife factors were most important to people (Table A4.6).

Table A4.6: Ranking of acceptability factors (1 = highest, 7 = lowest)

Acceptability Factor	Average Ranking
Wildlife impacts	3.07
Landscape impacts	3.30
Visual impact	3.48
Cost	3.62
Construction methods	4.36
Location	4.55
Congestion eg. traffic delays	5.59

Everybody thought that four pence would make no difference to their views on value for money of the electricity bill, or the affordability of them.

"I don't think anyone is going to miss 4p a year, are they?" Bath – Urban, C2DE, 18-45

"Four pence a year doesn't make any difference to me" Wrexham – Suburban, ABC1, 18-45

"4p is nothing; if we're talking about 4p a project here, 4p a project there, if it ultimately helps future proof our electricity, 4p seems nothing to be fair" Loughborough - Rural, C2DE, 46+

"I think it makes it seem more value for money when you contemplate the sum of it all" London – Young/future bill payers

"It's not going to change my electricity bill much" Glasgow – Urban, ABC1, 46+

As well as asking about acceptability about the four pence, people were asked how their acceptability would change if there were other increases to the electricity bill. As Table A4.7 shows, most people said the 4p was acceptable up to a certain point, but there was a significant minority who said the plan would not be acceptable if other parts of the bill increased. However, the bill increases were not quantified, so this seemed more an issue of principle.

Table A4.7: VIP acceptability changes if other parts of the electricity bill increase

Acceptability changes	No. of people
Yes – regardless of the change to other parts of the bill	10
Yes – but only up to a certain point	27
No – the plan would not be acceptable if other parts of the bill increased	15
Don't know	2

Participants were also asked about the acceptability of National Grid's proposed plans for the overall VIP programme which listed a number of other National Parks and AoNBs where 'undergrounding' was due to occur (Figure). To carry out this work, people were told that the annual increase on their electricity bill would be an average of 27 pence a year between 2022-2047.

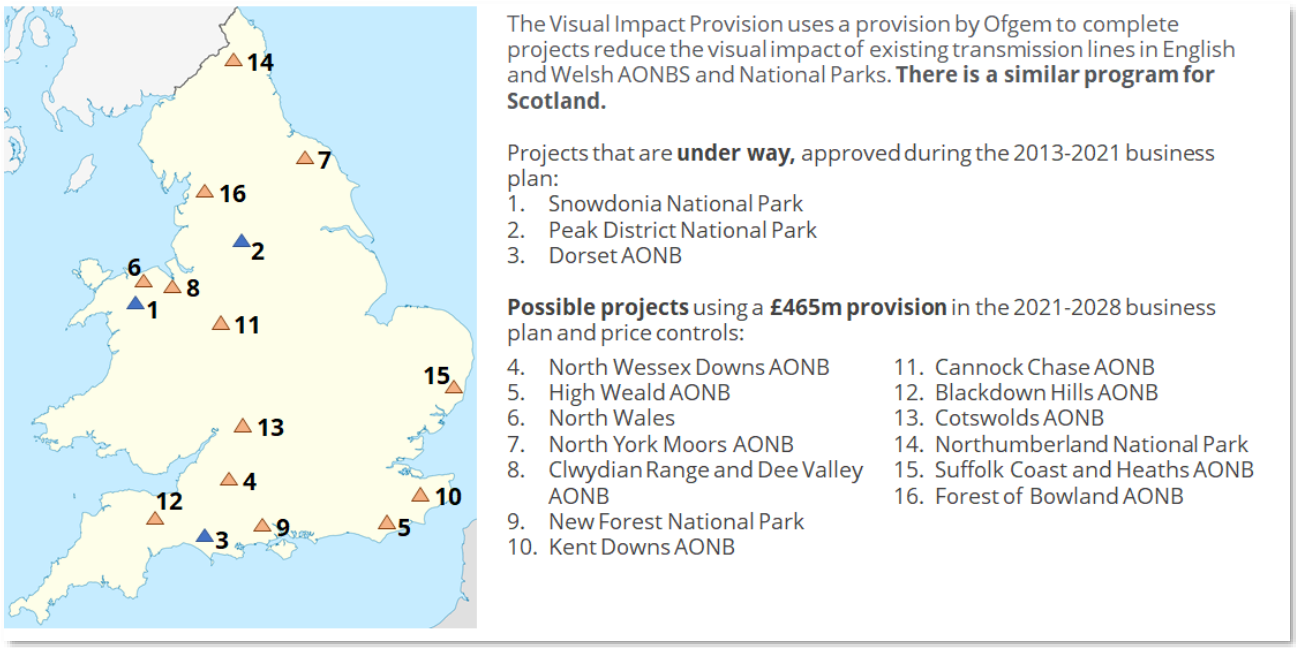

Figure A4.21: Proposed locations for the VIP programme (showcard)

As with the North Wessex Downs VIP project, the vast majority of participants said the proposed plans for the overall VIP programme were acceptable (Figure A4.22).

"My electricity bill is just under £300 a month now so in the grand scheme of things it's not a lot more money. It doesn't bother me enough because it's pence rather than pounds" Bath – Rural, ABC1, 46+

"I think the value for what you're getting for the money you'd be paying – I suppose that's £6.75 over the full term, and I guess it's a lot of people paying into that but overall, you're going to transform the AoNB aren't you?" Wrexham - Rural, C2DE, 46+

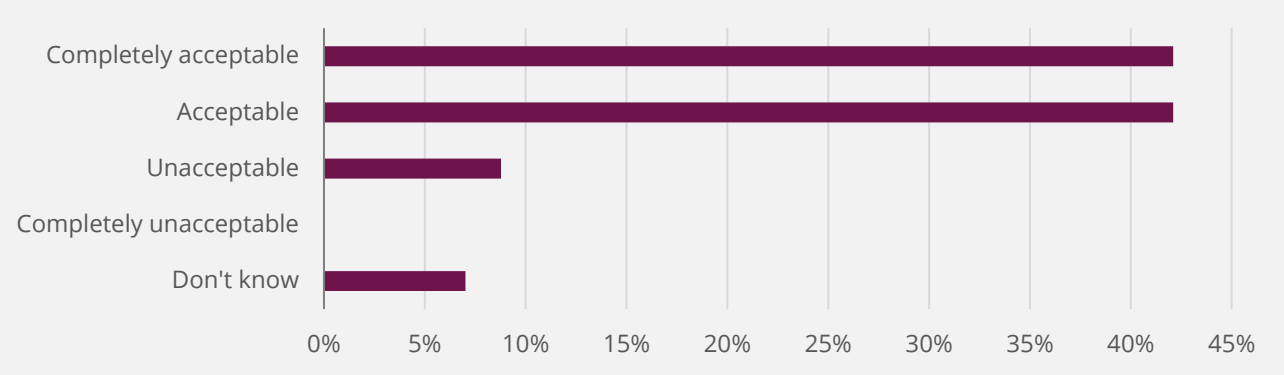

Figure A4.22: Acceptability of National Grids proposed VIP plans (N = 57)

For those that found it unacceptable it was more about the cost of living going up across the board.

"You can't just keep on adding stuff on, at some point you've got to draw a line" Bath – Rural, ABC1, 46+

While people find both the North Wessex Downs VIP and the overall VIP plans acceptable, there is scope to provide more reassurance about the potential wildlife and landscape impacts, especially around any remedial actions to expedite the restoration of the landscape to its previous natural state.

And although the impact on bills was insignificant to people, there was still a nagging concern about the total budget allocation which it was felt could be more effectively spent.

"I don't think visual impact is an important thing, and I just don't think they should be pursuing it particularly. I think there's more important things going on at the moment with fuel, with the environment, and money would be better spent elsewhere" Bath – Rural, ABC1, 46+

"I agree with the merits of making it look better and just removing the eye-sore, but it does just seem like a lot of money for something that's not going to bring too many benefits" London – Young/future bill payers

Similar to the North Wessex Downs VIP project, the 27 pence a year that people would have to pay made no difference to their views on value for money of their electricity bills, or their affordability.

"For me I can still afford 27 pence for a year, but I still don't know if it's a good idea" Wrexham – Suburban, ABC1, 18-45

"In the grand scheme of things, it's such a small amount of money, it doesn't make a dent in terms of what you're paying proportionally on the bills, so it wouldn't make any difference to me" Bath – Urban, C2DE, 18-45

"It's not a large sum relative to the average bill amount" London – Young/future bill payers

While people absolutely saw the benefits of improving the visual amenity of designated landscapes as a

result of 'undergrounding', this was sometimes offset by various concerns as set out above. This caused people to query the point of the VIP programme and whether it was actually worth the disruption to landscapes and habitats.

Therefore, to understand the strength of feeling about these concerns, a question of 'support in principle' was introduced after the first four groups, for both North Wessex Downs VIP and the overall proposed plans. Figure A4.23 show that most people supported the VIP programme, both at a local and overall level, with hardly anyone saying they were against the projects.

There was however a noteworthy minority who were undecided.

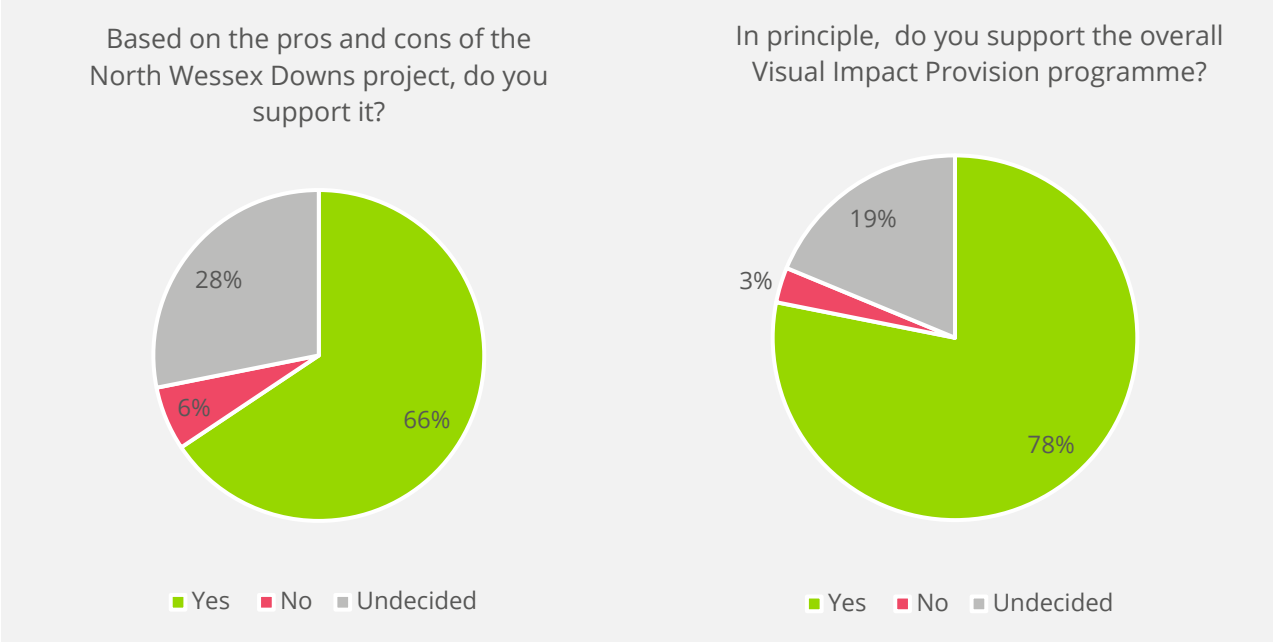

Figure A4.23: Support for North Wessex Downs and overall VIP programme

Annex 5: Survey summary statistics

Annex 5. Summary statistics.xlsx

Annex 6: Econometric analysis

This annex reports the result of the econometric model used in the analysis of the household responses for the NWD project. Model specifications, estimation results (coefficient estimates, statistical significance) and marginal effects are reported in the following sections.

A6.1 – Estimation for acceptability of NWD

Probit models were used to examine the influence that different factors (e.g. socio-economic characteristics, demographic characteristics, attitudes etc.) had on consumer support for the NWD project. The model control for multiple factors and the results identify which factors influence support and the direction of the relationship. The model is specified as follows:

$$\Pr(Acceptability = 1 \mid X) = \phi(X^T\beta)$$

where, Pr denotes the function for probability, X is a matrix of observable factors and β denotes the correlation coefficient matrix for each explanatory variable. These models are advantageous as they incorporate non-linear effects of X and are applicable to large sample sizes. However, the magnitude of coefficient estimates cannot be readily interpreted. Conventionally the approach is to calculate the marginal effects which is the derivative of the prediction function $[\phi(X^T\beta)]$. The marginal effect shows how a 1 unit change in the explanatory variable affects the level of support for the NWD project / VIP.

Table A6.1: Explanatory variables

Variable	Definition	Survey question
Age	Age group of the respondent – Factor variable [(1) -18-24, (2) – 25-34, (3) – 35-44, (4) – 45-54, (5) – 55-64 and (6) – 65+]	Q4
Gender	Gender group of the respondent – [(1) – Male, (2) – Female and (3) – "I prefer to identify in another way"]	Q5
Income	Average monthly income of respondents – [(1) – £250, (2) - £792, (3) – £1213, (4) – £1472, (5) – £1884, (6) – £1884, (7) – £2417, (8) – £2834, (9) – £3251, (10) – £3751, (11) – £4667, (12) – £6667, (13) - £8000	Q43
Support	Dummy variable depicting if respondents receive support or not – 1 = Support, 0 = No Support	Q11
Region	What region of UK are respondents from [(1 – Base) – South West, (2) – North East, (3) – North West, (4) – Yorkshire and the Humber, (5) - East Midlands, (6) West Midlands, (7) – East of England, (8) – Greater London, (9) – South East, (10) Scotland and (11) - Wales	Q3
Bill Amount	Average monthly bill capped at 1 standard deviation from the mean (£550)	Q8/Q9

Table A6.2: Dependent variables

Model	Definition	Survey question
Acceptability (NWD)	Acceptability of the North Wessex Downs project 1 = Acceptable, 0 = Unacceptable, undecided, or not sure	Q26

A4.2 - Results – Probit model

Table A6.3: Regression output (NWD Acceptability)

Group	Variable	Coefficient (95% CI)	Marginal effect (95% CI)
-	Age	-0.0072 (-0.056 to 0.041)	-0.0021 (-0.017 to 0.0122)
-	Gender (Female)	-.21*** (-0.35 to -0.067)	-.061*** (-0.103 to -0.0202)
-	Income	.000083*** (0.000042 to 0.00012)	.000025*** (0.000013 to 0.000037)
Region	Base – South West	Base	Base
	North East	0.24 (-0.089 to 0.57)	0.073 (-0.03 to 0.18)
	North West	0.44 (-0.30 to 0.39)	0.014 (-0.097 to 0.13)
	Yorkshire and the Humber	0.41** (-0.76 to 0.41)	0.12** (.010 to 0.22)
	East Midlands	0.15 (-0.21 to 0.51)	0.048 (-0.065 to 0.16)
	West Midlands	0.13 (-0.22 to 0.47)	0.040 (-0.07 to 0.15)
	East of England	-0.013 (-0.35 to 0.33)	-0.0044 (-0.12 to 0.11)
	Greater London	0.12 (-0.201 to 0.45)	0.039 (-0.064 to 0.14)
	South East	0.26 (-0.095 to 0.61)	0.077 (-0.031 to 0.18)
	Scotland	0.079 (-0.27 to 0.43)	0.025 (-0.086 to 0.14)
	Wales	-0.068 (-0.43 to 0.30)	-0.023 (-0.14 to 0.099)
-	Bill Amount	0.00025 (-0.0010 to 0.0015)	0.00075 (-0.00031 to 0.00046)
Bill Support	Winter Fuel Payment	0.25*** (0.079 to 0.42)	0.075*** (0.024 to 0.13)
	Cold Weather Payment	0.01 (-0.21 to 0.23)	0.0033 (-0.062 to 0.068)
	Warm Home Discount	-0.11 (-0.31 to 0.08)	-0.034 (-0.091 to 0.023)
	Support from Energy Supplier	0.33 (-0.12 to 0.42)	0.097 (-0.021 to 0.22)
-	Cons	0.45 (0.074 to 0.82)	-
Model fit	N	1816	1816
	Pseudo R2	0.0296	-

Notes: * denotes statistically significant at the 10% level; ** denotes statistically significant at the 5% level; *** denotes statistically significant at the 1% level.

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