

## Energy bills and literacy

### A survey of UK adults

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1 in 6 adults (7.1 million people) in England<sup>1</sup> have very poor literacy skills, and this increases in the most deprived communities, where up to 1 in 3 adults lack the literacy skills expected of an 11-year-old<sup>2</sup>. Low literacy comes at a cost to the individual, as adults with low literacy levels are more likely to be unemployed or on a low income, experience mental health problems and have a shorter life expectancy<sup>3</sup>. Low literacy skills also present a significant cost to the UK economy, with the total estimated at £81 billion per year. This consists of a loss of £58 billion to individuals and businesses, and £23 billion for the UK taxpayer<sup>4</sup>.

While literacy skills and confidence around reading may be expected to influence how well energy bills can be understood, there is little research on this area in the UK. However, over the past decade, the readability of utility bills has been a focus of some UK studies. For example, research conducted for the Department for Energy and Climate Change in 2011 explored the viability of including benchmarking on bills to make them more easily understood ([Ipsos Mori, 2011](#)). More recently, research suggests an increase in the number of consumers concerned about their bills due to reduced income during the lockdown in response to the COVID-19 pandemic ([Ofgem, 2020](#)). Indeed, about two-thirds (65%) of those with payment issues have sought advice on how to manage their energy bills.

Working with Octopus Energy, we conducted a survey of 2,520 energy bill payers in the UK in early 2021. The survey was designed to explore how well they understood their energy bills, ways in which they felt bills could be made easier to read, and the perceived benefits of such improvements. The research also aimed to examine any associations between confidence in reading skills, household income and other demographic factors such as age, gender and level of education.

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<sup>1</sup> Comparable estimates suggest 1 in 4 adults in Scotland experience challenges due to poor literacy, 1 in 8 adults in Wales and 1 in 5 in Northern Ireland have poor literacy skills ([Scottish Government \[2009\]](#); [Welsh Government \[2010\]](#) and [OECD, \[2016\]](#)).

<sup>2</sup> See [OECD \(2016\)](#); [Department for Business, Innovation and Skills, \[2011\]](#)

<sup>3</sup> See [Morrisroe \(2014\)](#); [Gilbert et al., \(2018\)](#)

<sup>4</sup> [World Literacy Foundation \(2015\)](#)

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## Key findings

### Younger bill payers struggle to read their energy bills because of the language used

- Poor readability is an important barrier to engagement with energy bills, particularly for younger age groups. More than **1 in 5** (22.4%) of 18 to 24-year-olds responsible for paying bills said they sometimes avoided reading their bills because of the language used, compared with just 3.1% of the over 65s.
- Younger bill payers were also less able to identify the correct definitions of six terms commonly used on bills (such as “kWh”, “standing charge” and “tariff”). Only **1 in 11** (9.0%) 18 to 24-year-olds could identify the correct definitions of all six common terms, compared with **4 in 5** (78.6%) bill payers over 65.
- **1 in 4** (24.8%) of those aged 18 to 24 said they find it difficult to understand their energy bill. Indeed, **almost half** (45.2%) had to ask for help to explain a word or term they did not understand in the last 12 months, compared with just 1 in 50 (2.1%) of over 65s.

### Adults with the lowest household incomes and those with the lowest confidence in their reading skills are most likely to struggle or need help to understand their energy bill

- **Less than half** (46.6%) of the 2,520 UK adult bill payers surveyed were able to identify the correct definitions of all six terms commonly used on bills.
- Fewer respondents with the lowest household incomes (£20,000 or less) were able to identify all six terms correctly compared with respondents in higher income bands. Just 38.4% were able to identify all terms correctly, compared with more than 50.0% of those with higher household incomes.
- Respondents with the most confidence in their reading skills were almost **three times** more likely to say they find it ‘very easy’ to understand their energy bills than those with the least confidence (28.6% vs. 9.8%). Conversely, those with the least confidence were three times more likely to find it ‘very difficult’ (7.6% vs. 2.1%).
- **More than half** (51.3%) of respondents with the lowest levels of confidence in their reading skills have had to ask for help to explain a word or term on their bill, compared with **1 in 5** (20.2%) respondents generally, indicating that more could be done to anticipate the needs of this group.

### Improving the clarity of energy bills

- **Three-quarters** (74.7%) of bill payers responding to our survey had never been taught how to read energy bills at school, and two-thirds (65.2%) were not taught how to understand energy bills at home.
- Almost **two-thirds** (63.8%) of respondents agreed that energy bills should use simpler language.
- **A third** (32.9%) of bill payers believed that easier-to-read energy bills would improve their understanding of how to use less energy, suggesting making bills easier to read could reduce the cost of energy use both to the consumer and to the environment.
- Notably, nearly **a fifth** (18.9%) of bill payers also felt that easy-to-read bills would reduce how much they worried about managing their bills.

## Methodology

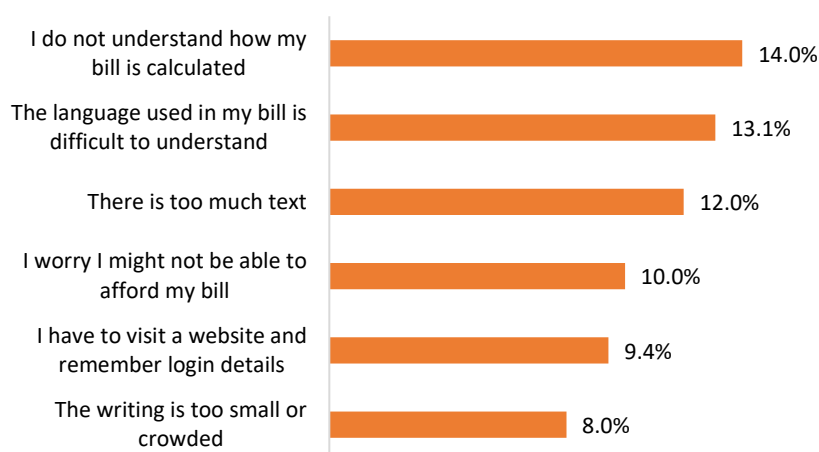
We commissioned OnePoll to conduct a survey of 2,520 energy bill payers in the UK in early April 2021 (420 from each of six age groups<sup>5</sup>). Survey respondents first agreed that they were fully or jointly responsible for paying the energy bills in their household, and they were then asked questions about their attitudes to energy bills, how well they felt they understood their energy bills, confidence in their reading skills, ways in which they felt that the clarity of bills could be improved, and the perceived benefits of such improvements.

### Attitudes to energy bills

Survey respondents were asked if there was anything that might put them off reading their energy bill. Of the 2 in 5 (42.6%) who sometimes avoid reading their bill, the most common reason given was difficulty understanding how their bill was calculated, with 14.0% citing this reason for avoiding their bill (see **Figure 1**). At the same time, 1 in 8 (13.1%) of bill payers said that they sometimes avoided reading their energy bills because the language used was difficult to understand or because there was too much text, indicating that poor readability is an important barrier to engagement with energy bills. Fewer of those surveyed said that they avoided reading their bill for other reasons, such as being worried they might not be able to afford it (10.0%), the need to visit a website and remember login details (9.4%) or the writing being too small or crowded (8.0%).

3 in 5 (57.4%) adults responding to our survey said they didn't avoid reading their energy bills.

**Figure 1: I sometimes avoid reading my energy bills because...**



Those in younger age groups were more likely than older respondents to say that they sometimes avoided reading their bills for all the reasons suggested (just 29.3% of those aged 18 to 24 said they don't avoid reading their energy bills for any reason, compared with 87.9% of over 65s). Indeed, more than a fifth (22.4%) of 18 to 24-year-olds said they found the language used difficult to understand, compared with just 3.1% of the over 65s.

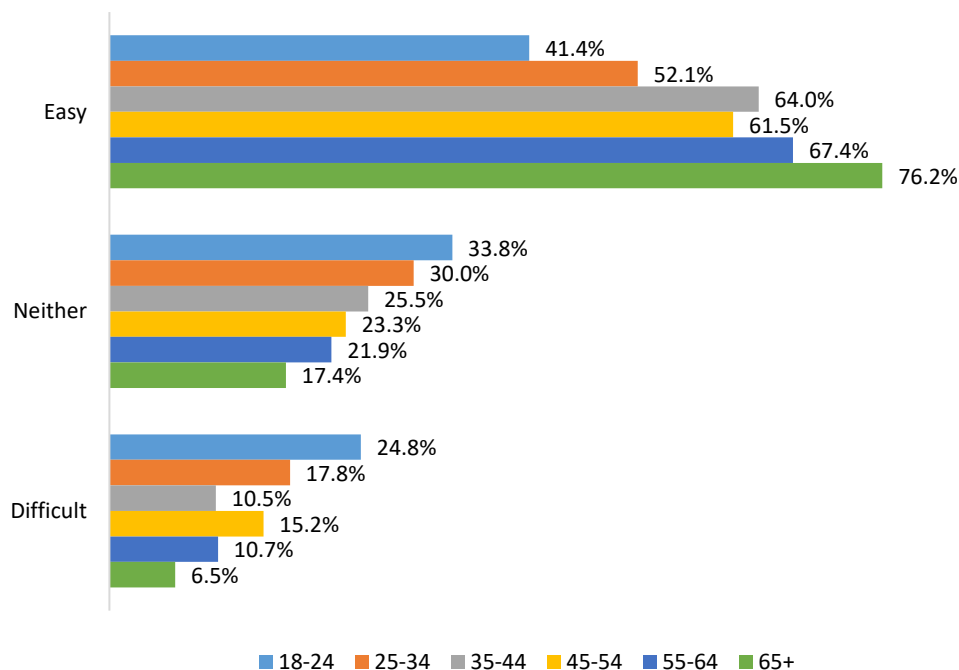
<sup>5</sup> Research (see e.g. [Energy Saving Trust, 2015](#)) has indicated that younger age groups might struggle most with understanding their energy bills. We therefore sampled a percentage of the youngest age group (18 to 24s, a 7-year age band) equal to other, 10-year age bands (25-34; 35-44; 45-54; 55-64; 65+). See Appendix 1 for more details of the sample.

## How easy or difficult bill payers find it to understand their energy bills

3 in 5 (60.4%) of adults responding to the survey said they found it either ‘very easy’ or ‘easy’ to understand their energy bill, and a quarter (25.3%) felt it was ‘neither easy nor difficult’. 1 in 7 (14.2%) said that they found it ‘difficult’ (11.2%) or ‘very difficult’ (3.0%) to understand their bills.

Age was, again, a significant factor in relation to how easy or difficult bill payers find it to understand their energy bill. As shown in **Figure 2**, older bill payers are progressively more likely to say that they find it ‘easy’ to understand their energy bill, with more than **three-quarters** (76.2%) of those aged 65 or older finding it easy compared with **2 in 5** (41.4%) of those aged 18 to 24. Conversely, while 24.8% of the youngest age group said that they found it difficult to understand their energy bill, just 6.5% of the over 65s agreed. This suggests that younger consumers have more to benefit from having energy bills that are easier to read.

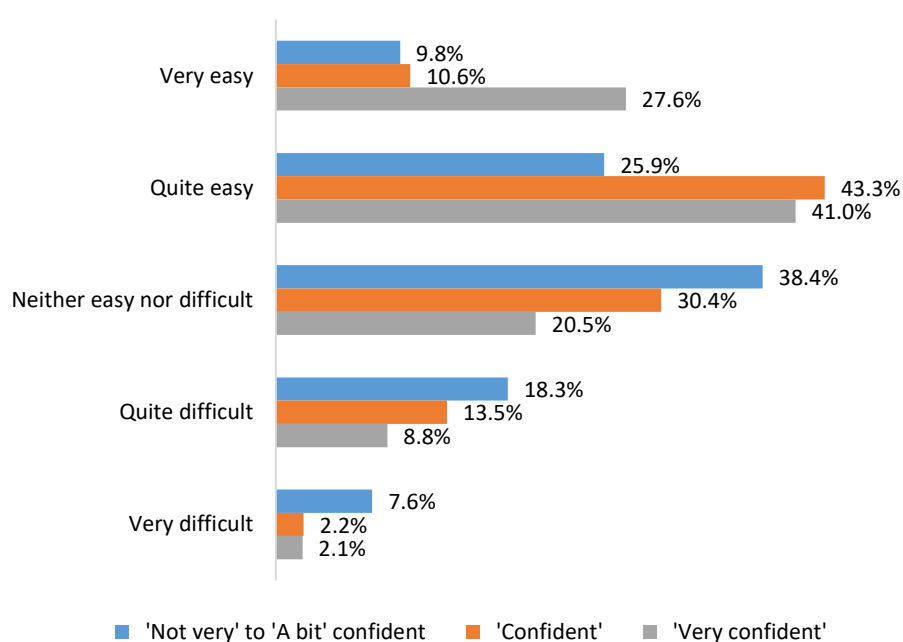
**Figure 2: Ease of understanding energy bills by age group**



There were also significant differences associated with respondents’ confidence in their reading skills. Survey participants were asked to rate themselves on a scale of 1 to 5 about how confident they felt about having the reading skills they needed in everyday life (with 1 being ‘not at all confident’ and 5 being ‘very confident’)<sup>6</sup>. Respondents with the most confidence in their reading skills were almost three times more likely to say that they found it ‘very easy’ to understand their energy bills than those with the least confidence (27.6% vs. 9.8%, see **Figure 3**).

<sup>6</sup> Within this sample, 16.2% described themselves as feeling ‘not very’ to ‘a bit’ confident about the reading skills they need for everyday life; 19.4% described themselves as ‘confident’ and 64.3% as ‘very confident’. Those who described themselves as ‘not very’ to ‘a bit’ confident are considered to have the lowest levels of confidence in their reading skills.

**Figure 3: Ease of understanding energy bills by confidence in reading skills**



Conversely, respondents with the lowest levels of confidence were more than three times more likely to report finding it 'very difficult' to understand their energy bills than those who described themselves as 'confident' or 'very confident' readers (7.6% vs. 2.2% and 2.1% respectively). Finally, there was some difference in how easy respondents of different genders found it to understand their bill: 67.8% of men and 55.1% of women said they found it easy, while 9.7% of men and 17.5% of women found it difficult. 22.5% and 27.4% respectively found it neither easy nor difficult<sup>7</sup>.

### How well bill payers understand the key terms on energy bills

In order to test bill payers' knowledge of the meaning of key terms commonly used on energy bills, survey respondents were invited to identify the correct definitions of six terms: dual fuel, kWh, standing charge, tariff, unit charge and VAT<sup>8</sup>. The correct definitions were provided based on Ofgem definitions<sup>9</sup>, which were given alongside two alternative choices and a 'don't know' option. Less than half (46.6%) of the 2,520 UK adults surveyed who are responsible for paying bills were able to identify the correct definitions of all six terms commonly used on bills.

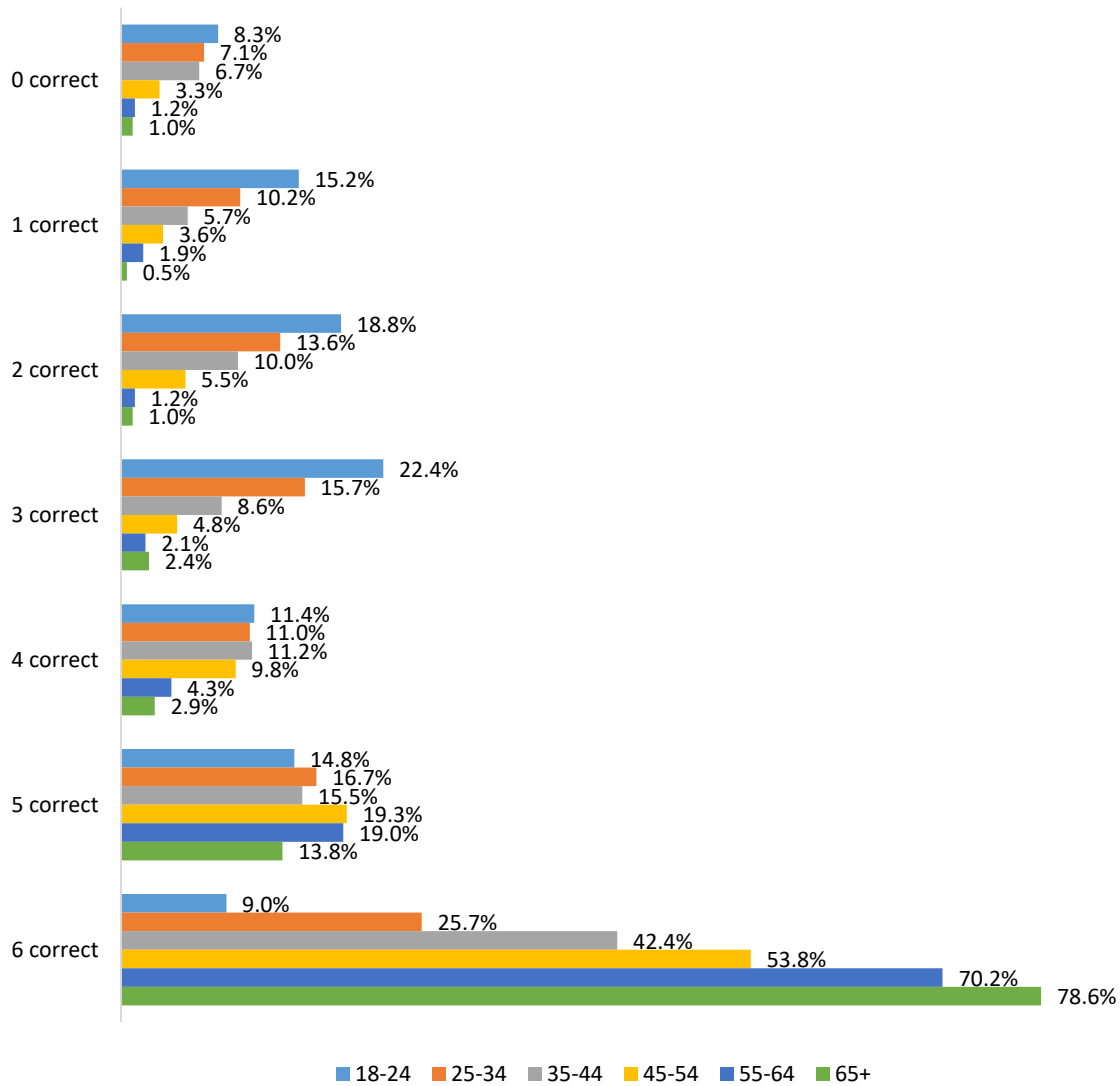
Older bill payers were more able to identify all terms correctly, with 4 in 5 (78.6%) of the oldest age group able to do so compared with only 1 in 11 (9.0%) of the youngest age group (see **Figure 4**).

<sup>7</sup> We also looked at level of education, but found no significant difference between those educated to secondary, post-secondary or university level ( $p=.265$ ).

<sup>8</sup> Fewest (66.1%) respondents were able to correctly identify the meaning of 'dual fuel', 72.1% could identify 'kWh', 75.0% identified 'tariff'; 75.9% 'standing charge', 75.8% 'unit rate' and 82.9% 'VAT'.

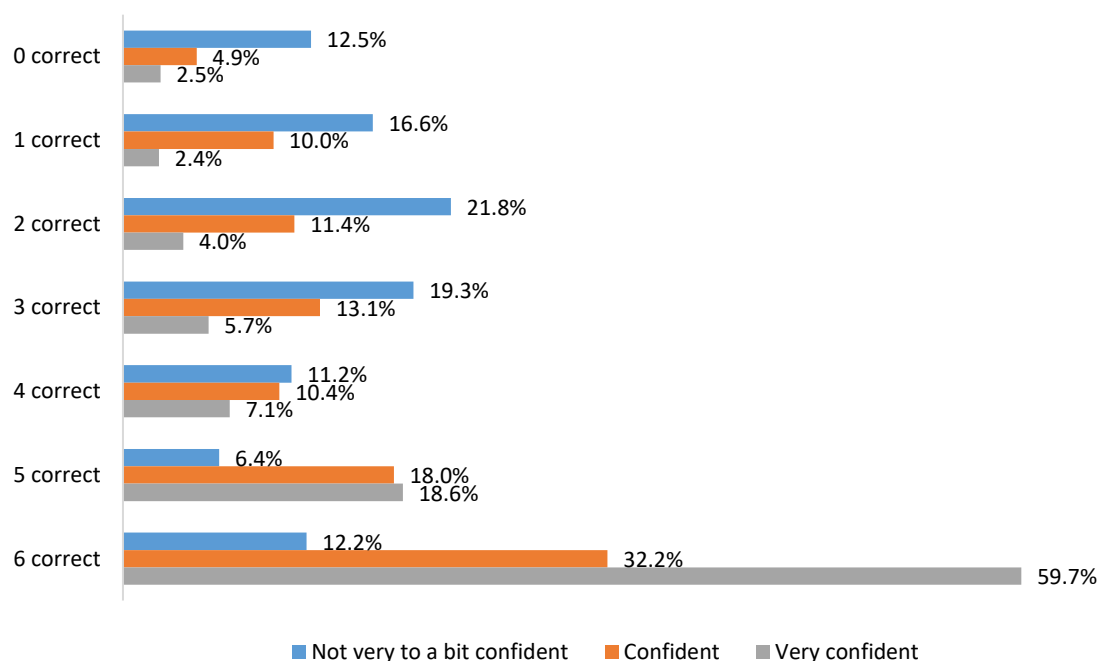
<sup>9</sup> <https://www.ofgem.gov.uk/consumers/household-gas-and-electricity-guide/key-terms-and-issues-explained>.

**Figure 4: Number of key terms identified correctly by age group**



While 3 in 5 (59.7%) respondents with the highest confidence in their reading skills were able to identify all six words correctly, this decreased to a third (32.2%) of ‘confident’ readers and just 1 in 8 (12.2%) of those who described themselves as ‘not at all’ or ‘a bit’ confident (see **Figure 5**).

**Figure 5: Number of key terms identified correctly by level of confidence in reading skills**



Compared with respondents in other income bands, respondents with the lowest household incomes (£20,000 or less) were less likely to identify all six terms correctly<sup>10</sup>. 38.4% identified all six terms correctly, compared with 50.5% of those with an income of £20,001-40,000, 54.5% of those with an income of £40,001-60,000 and 54.6% of those with an income of £60,000 or more. As a note, this survey focused on those who pay energy bills and therefore excludes those on pre-payment meters, many of whom are on lower incomes<sup>11</sup>.

Perhaps more surprisingly, understanding of energy bill terms was similar among all educational levels<sup>12</sup> (see **Figure 6**). Almost half (46.7%) of respondents educated to secondary level identified all six terms correctly, while 47.2% of those with post-secondary and vocational and 46.0% of those with university education were able to do so. This suggests that such terms present challenges to reading comprehension regardless of educational background<sup>13</sup>.

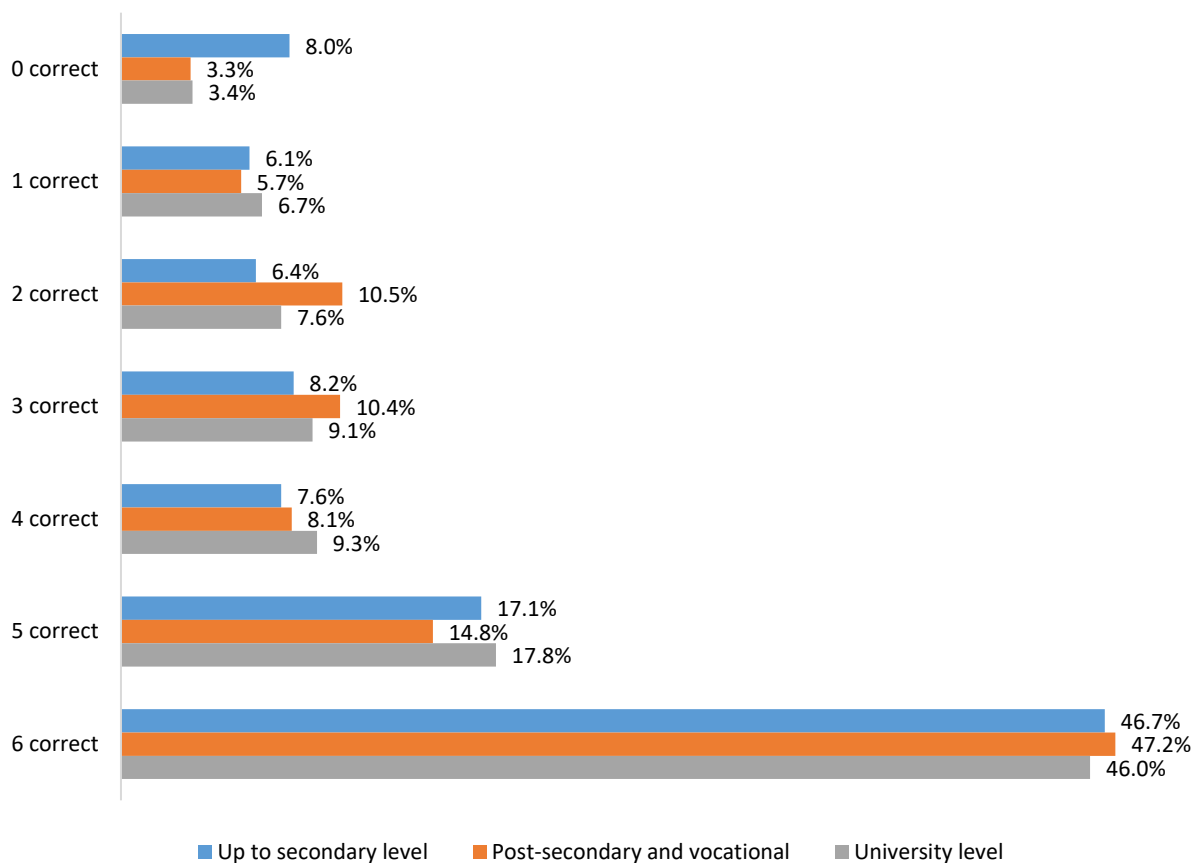
<sup>10</sup> Within this sample, 34.5% of respondents had a household income of £0-20,000, 36.8% of £20,001-40,000, 17.3% of £40,001-60,000 and 11.4% £60,001+. 'Low income' households may be defined as those with an income of approximately £18,480, or 60% of the median of c.£30,000 at the time of the survey (see [UK Government, 2020](#), [ONS, 2020](#)).

<sup>11</sup> See e.g. <https://www.citizensadvice.org.uk/about-us/about-us1/media/press-releases/140000-households-cant-afford-to-top-up-prepayment-energy-meter/>

<sup>12</sup> Within this sample, 24.0% had attained Secondary Education (GCSE/O-Levels); 36.2% had Post-Secondary Education (College, A-Levels, NVQ3 or below, or similar) and Vocational Qualification (Diploma, Certificate, BTEC, NVQ 4 and above, or similar) and 37.1% an Undergraduate Degree (BA, BSc etc.), Postgraduate Degree (MA, MSc etc.) or Doctorate (PhD), 2.7% had none of the suggested qualifications.

<sup>13</sup> We also explored gender but there were no systematic differences between men and women in terms of literacy and energy bills.

**Figure 6: Number of key terms identified correctly by level of education**



As a note, respondents who had said they found it ‘easy’ to understand their energy bills were indeed more likely to identify all six terms correctly, with 56.4% of those who found it easy identifying the terms correctly, compared with 34.2% of those who found it neither easy nor difficult and 27.3% of those who found it difficult. This indicates that bill payers’ perceptions of how easy they found it to understand bills broadly corresponded with their ability to identify key terms, although it should also be noted that more than half of those who found it difficult to understand their bills were also able to do this well.

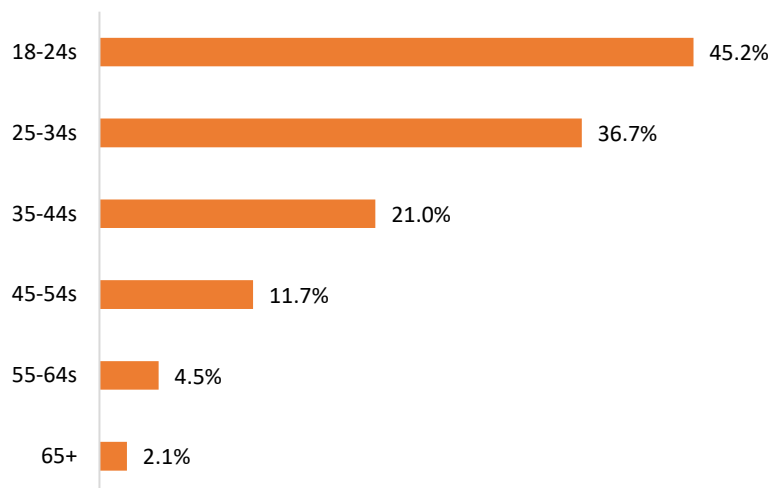
### Asking for help with a word or term on an energy bill

One in 5 (20.2%) adults surveyed said they have had to contact their supplier or ask someone for help to explain a word or term on their bill they did not understand in the last 12 months.

Reflecting earlier findings about age and ease of understanding energy bills, more bill payers from the youngest age groups said they have had to ask for help to explain a word or term on their energy bill in the last 12 months (see **Figure 7**). While almost half (45.2%) of those aged 18 to 24 have had to do this, the percentage decreases steadily by age group, with only 2.1% of the over 65s needing help with a word or term they did not understand. This may indicate the benefits of increased familiarity with the language used on bills.

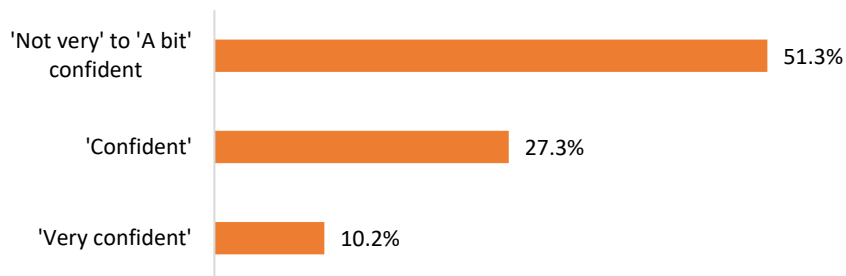


**Figure 7: Asking for help with a word or term on an energy bill by age group**



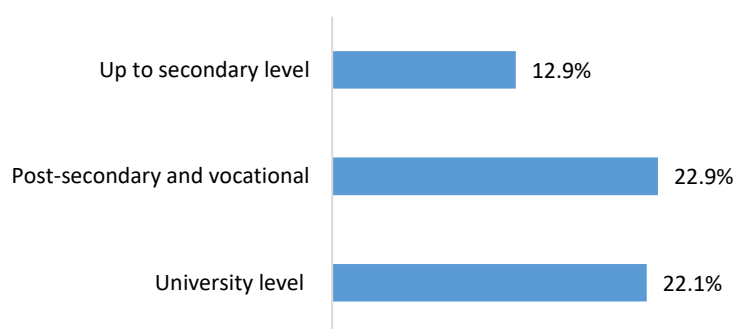
More of those with lower levels of confidence in their reading skills have had to ask for help with a word or term on their energy bill. 51.3% of those from this group said they had needed to ask for help with a word on their bill in the last 12 months, compared with 27.3% of those who described themselves as confident and 10.2% of those who are very confident about the reading skills they need for everyday life (see **Figure 8**).

**Figure 8: Asking for help with a word or term on an energy bill by confidence in their reading skills**



Interestingly, as well as those with the lowest confidence in their reading skills, more of those with the highest levels of education said they had asked their supplier, family or friends for help with a word on their bill (see **Figure 9**). Just 12.9% of those educated up to secondary level had asked for help, compared with 22.9% of those with post-secondary and vocational education and 22.1% of those educated at university.

**Figure 9: Asking for help with a word or term on an energy bill by level of education**



Perhaps even more intriguingly, looking more closely at the university-educated group, those educated at post-graduate level were the most likely to have asked for help with a word or term on their energy bill. Those educated to undergraduate level were the least likely to say they'd asked for help (16.6%) compared with those educated to MA or MSc (29.2%) or PhD (43.5%) levels. While it is possible to speculate that this may reflect increased confidence in those with higher levels of education to question their bills, or that increased education may relate to more specialised rather than practical knowledge, the scope of this survey did not allow any insight into the reasons for this. Further research would therefore be needed to explore this finding.

Respondents were further invited to share more about the reason they had to ask for help. Comments most frequently mentioned confusion around debit and credit status and help with reducing their bill. However, others mentioned having difficulty understanding more technical aspects of their bill, such as how their kWh use and tariff had been calculated:

*“How much I was paying, what credit meant, why I was in deficit.”*

*“The whole bill is made to confuse, so we pay it regardless, the abbreviations used make it impossible to understand.”*

*“I can't remember the terms but I know I had to have family and friends sit down with me and explain what the words mean and how the process works.”*

*“I couldn't understand any of it.”*

*“It generally needs simplifying to be understood better.”*

*“Instead of kWh - put kilowatts per hour”*

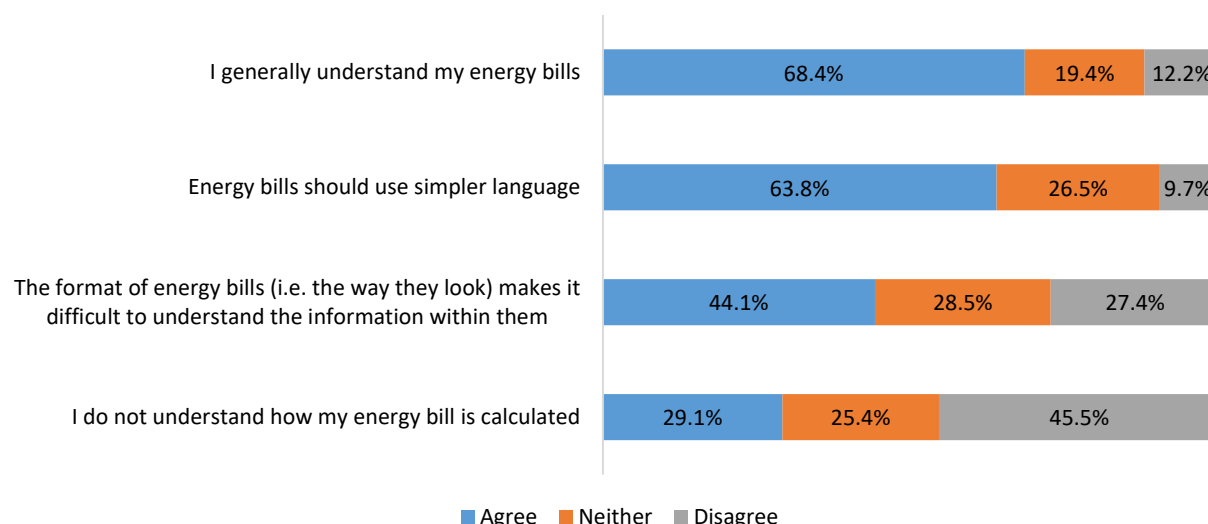
### **Improving the clarity of energy bills**

When asked to what extent they agreed or disagreed with a number of attitudinal statements about energy bills, encouragingly, more than two-thirds of bill payers responding to our survey (68.4%) said that they generally understand their bills (see **Figure 10**). However, fewer respondents with the lowest confidence in their reading skills agreed with this, with 40.4%

understanding their bill compared with 63.7% of those who were confident about their reading skills and 76.9% of those who were very confident.

At the same time, nearly **two-thirds** (63.8%) of bill payers believed that energy bills should use simpler language, and more than 2 in 5 (44.1%) said the way that bills look makes it difficult to understand the information within them. Fewer (29.1%) agreed that they struggled to understand how their bill was calculated<sup>14</sup>.

**Figure 10: Agreement with statements about energy bills**



While interesting differences were revealed in how easy or difficult different sub-groups found it to understand their bill, and their ability to identify the definition of key terms correctly, fewer differences were found between demographic groups (e.g. age, income, education and gender) in relation to the above statements about energy bills.

### How bill payers learn to read energy bills

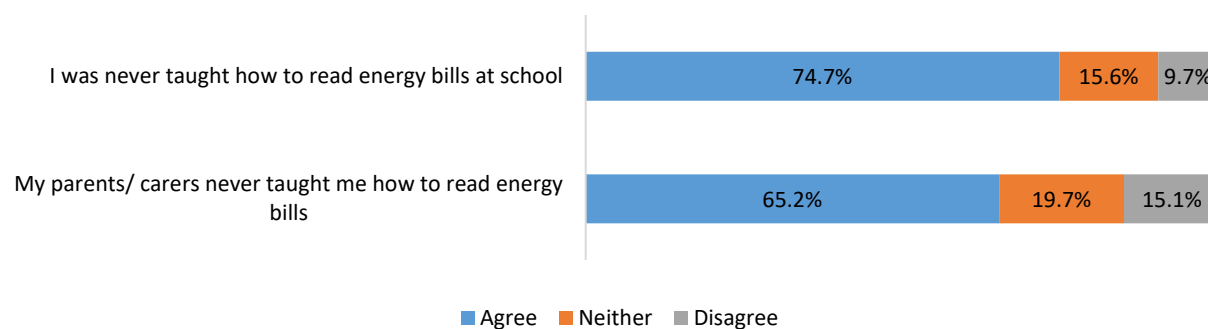
While simpler language and a clearer format could help support a better understanding of energy bills, it is also important to consider other ways of ensuring that all bill payers are able to access and comprehend the information in their bill.

For example, some might expect schools, parents or carers to play a role in teaching children and young people how to read a typical utility bill. The current Key Stage 3 science curriculum includes the need to teach young people about how to interpret energy bills<sup>15</sup>. However, 74.7% of bill payers responding to our survey said they had never been taught how to read energy bills at school. It does not appear that this was compensated for by being learned at home either, with two-thirds (65.2%) of adults responding to the survey saying their parents or carers never taught them how to read energy bills (see **Figure 11**).

<sup>14</sup> Attitudes were further explored in relation to demographic factors such as income, education, age and gender but no interesting differences were found.

<sup>15</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/335174/SECONDARY\\_national\\_curriculum\\_-\\_Science\\_220714.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/335174/SECONDARY_national_curriculum_-_Science_220714.pdf)

**Figure 11: Learning about energy bills at school or at home**



As a note, the small percentage (9.7%) who said they'd learned to read energy bills at school were not more likely to identify all six terms correctly, with 21.0% who'd been taught to read energy bills being able to do this compared with 49.4% of those who hadn't been taught to read energy bills at school. Of the higher percentage who said their parents or carers had taught them to read energy bills (15.1%), 47.7% were able to identify all six terms correctly, compared with a relatively similar percentage (40.6%) of those who said they hadn't been taught to read energy bills at home.

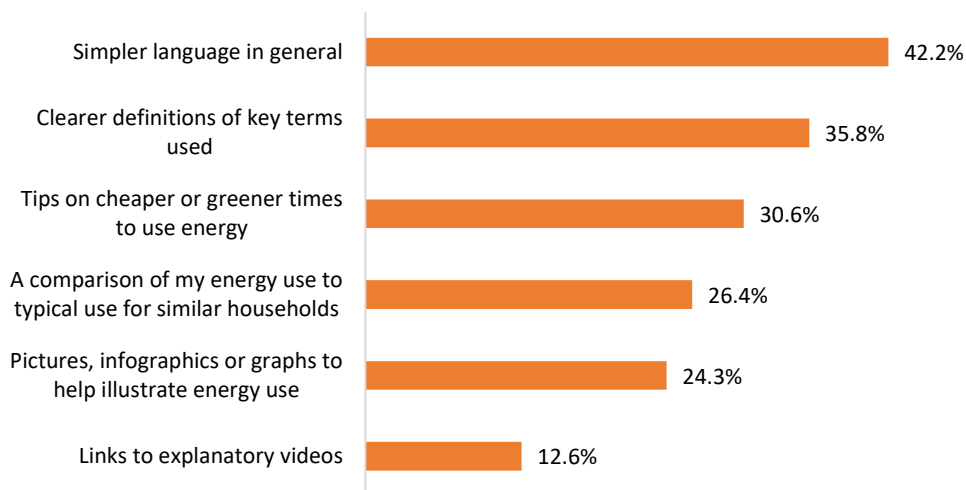
### Supporting better understanding of energy bills

Previous studies have found that a number of changes to documents such as insurance policies and utility bills can effectively improve readability. For example, refinements to structure, word frequency, sentence length and defined terms were found to improve the readability of insurance documents ([Browne Jacobsen, 2018](#)), while British Telecom (BT) found that customers preferred bills that clearly listed changes, tracked what customers used, referred to previous bill payments and explained numbers in charts ([BT, n.d.](#)). Similarly, in 2011, the Department for Energy and Climate Change (DECC) suggested bar charts as a preferred format for presenting numerical information, noting also that pictorial and monetary (rather than kWh-based) representations of data were generally well received and understood ([DECC, 2011](#)).

Respondents to our survey were presented with a number of suggestions about what might help them better understand their energy bills (see **Figure 12**). Options that were chosen by the highest percentage of respondents related to language and vocabulary, with most agreeing that using simpler language in general (42.2%) and clearer definitions of key terms (35.8%) would help them most in understanding their energy bill. This indicates that support around the language used in energy bills would be appreciated by many bill payers<sup>16</sup>.

<sup>16</sup> Demographic factors were explored but nothing notable emerged when looking into these statements in relation to factors such as income, education, age and gender.

**Figure 12: What, if anything, might help you better understand your energy bills?**

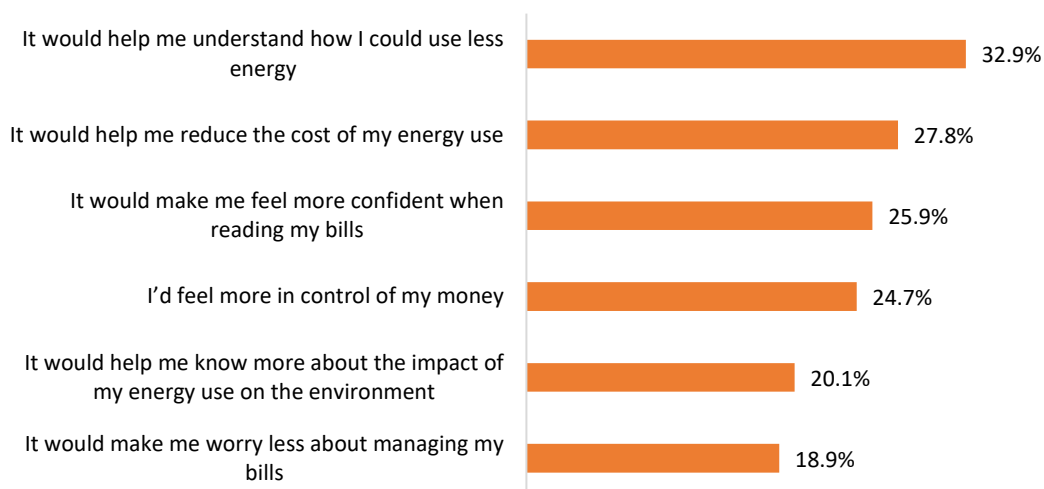


Notably, 3 in 10 also felt that they'd benefit from tips on cheaper or greener times to use energy (30.6.8%) and a quarter from a comparison of their energy use to typical use for similar households (26.4%). Just under a quarter (24.3%) felt that images such as pictures, infographics or graphs to illustrate their energy use could support their understanding of the information in their bill, and more than 1 in 10 (12.6%) believed that an explanatory video would be helpful.

### Benefits of making energy bills easier to read

Respondents were further invited to agree with a range of suggested potential benefits of easier-to-read energy bills. The most popular perceived benefit was an improved ability to understand how to use less energy, with a third (32.9%) believing this (see **Figure 13**). This is worth noting, as a better understanding of how to use less energy could not only reduce the cost of energy use to the consumer, but also its cost to the environment.

**Figure 13: Perceived benefits of easier-to-understand energy bills**



Indeed, more than a quarter (27.8%) of respondents agreed that financial savings would be a benefit of easier-to-read bills and a fifth (20.1%) felt that they would help them better understand the impact of their energy use on the environment. A final, but important, point is that almost a fifth (18.9%) of bill payers felt that easy-to-read bills would reduce how much they worried about managing their bills<sup>17</sup>, indicating that improving the readability of bills may offer potential benefits for mental wellbeing.

## Summary and discussion

While some evidence suggests that energy bill readability is improving (see e.g. [Echo Managed Services, 2016](#); [Aptumo, 2019](#)), findings from this survey show that a significant percentage of those responsible for paying energy bills in the UK still find their bills difficult to understand. It is particularly concerning that younger bill payers, those from the lowest-income households and those with the lowest levels of confidence in their reading skills are most likely to struggle to understand their bills.

Findings from this research indicate that literacy plays an important role in how well adults are able to understand their energy bills. Furthermore, while simplifying the language used in energy bills would have most benefit for those with low confidence in their reading skills, it would also appeal to the majority of bill payers, with two-thirds of survey respondents agreeing that energy bills should use simpler language. Perhaps most importantly, responses indicate that such changes would have the potential to increase awareness of how to use less energy, reducing costs to both the consumer and the environment.

Further research could explore these ideas in more depth by evaluating the impact of simplifying energy bill language on adults' energy usage. Ultimately, the use of jargon may be seen as an issue of social justice, with difficult language affecting younger, less confident and financially disadvantaged customers in particular. Improvements in this area may therefore have the potential to promote the economic and social development of the communities with most to benefit.

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<sup>17</sup> While a small number of significant findings emerged when exploring demographic factors and perceived benefits of easier-to-understand bills, no clear patterns emerged in this data.

## Appendix: Sample characteristics

### Age

Note: previous research indicated that younger age groups might struggle most with understanding their energy bills (see e.g. [Energy Saving Trust, 2015](#)). We therefore chose to sample a percentage of the youngest age group (18 to 24, a seven-year age band) equal to other (10-year) age bands.

	n	%
18 to 24	420	16.7
25 to 34	420	16.7
35 to 44	420	16.7
45 to 54	420	16.7
55 to 64	420	16.7
65+	420	16.7
<b>Total</b>	<b>2,520</b>	<b>100%</b>

### Gender

58.3% of respondents were female (n=1,469), 41.2% were male (n=1,051) and 0.0% preferred to describe themselves another way.

### Regional breakdown

	n	%
North East	126	5.0
North West	263	10.4
Yorkshire and the Humber	191	7.6
East Midlands	195	7.7
West Midlands	210	8.3
East Anglia	220	8.7
London	400	15.9
South East	323	12.8
South West	194	7.7
Scotland	213	8.5
Wales	126	5.0
Northern Ireland	59	2.3