

BEIS Public Attitudes Tracker: Energy Infrastructure and Energy Sources, Spring 2022, UK

16 June 2022

Official Statistics

This report covers questions on energy infrastructure and energy sources from the Autumn 2021, Winter 2021 and Spring 2022 waves of the BEIS Public Attitude Tracker. The report includes a quarterly tracking measure on support for renewable energy, and biannual tracking measures on awareness and support for different types of renewable energy and fusion energy.

The report also includes results from Spring 2022 on attitudes towards renewable energy and infrastructure, installation of solar panels in the home, carbon capture and storage, and hydrogen. The report further includes results on awareness and support for shale gas and small modular reactors in Autumn 2021 and for nuclear energy in Winter 2021.

What you need to know about these statistics: These results from the BEIS Public Attitudes Tracker (PAT) were collected using the Address Based Online Surveying (ABOS) methodology introduced in Autumn 2021, which uses random probability sampling. The results should not be compared with previous PAT surveys, which used different data collection methods. For details, see the Technical Overview.

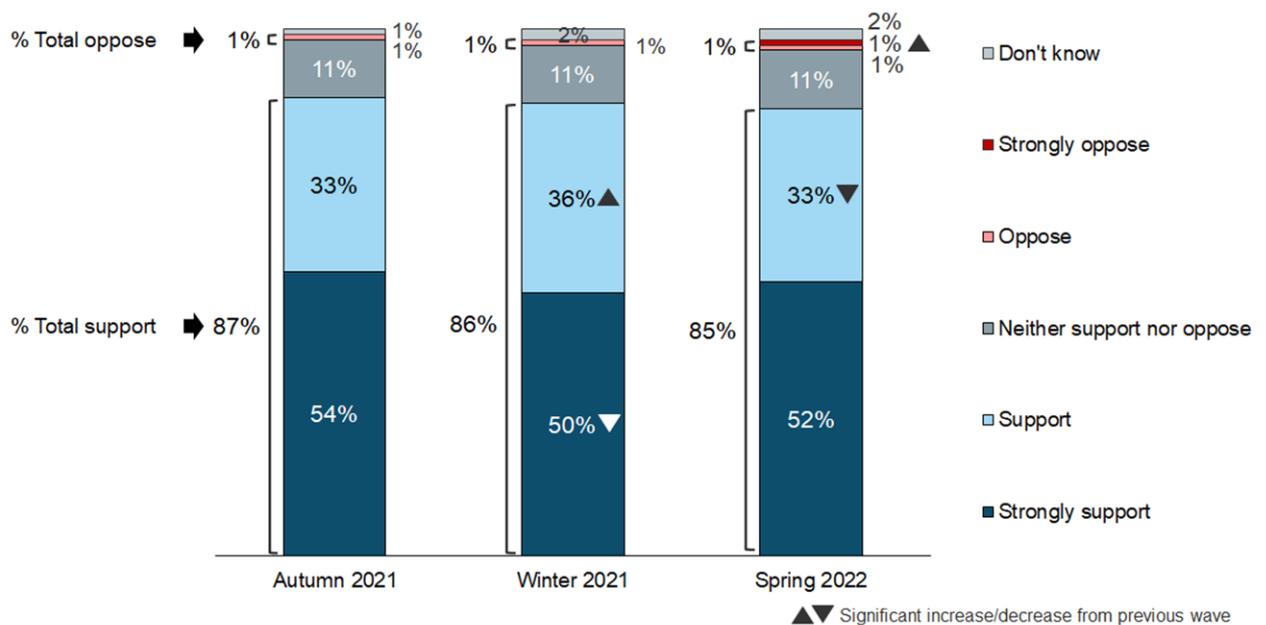
The table below shows the topics covered in this report and when these questions were included in the BEIS Public Attitude Tracker. Links are included to the findings for each topic within this report.

Topic	When included	Link to findings
Support for renewable energy	Quarterly	Link
Support for different types of renewables	Autumn 2021, Spring 2022	Link
Attitudes towards renewable energy and infrastructure	Spring 2022	Link
Attitudes towards solar panels in the home	Spring 2022	Link
Awareness and support for fusion energy	Autumn 2021, Spring 2022	Link
Awareness and support for shale gas	Autumn 2021	Link
Awareness of small modular reactors	Autumn 2021	Link
Attitudes towards nuclear energy	Winter 2021	Link
Awareness and support for carbon capture and storage	Spring 2022	Link
Awareness of hydrogen	Spring 2022	Link

Support for renewable energy

In Spring 2022, 85% of people said that they supported the use of renewable energy, such as wind power, solar energy and biomass to provide electricity, fuel and heat (Figure 1.1). The overall level of support was unchanged compared with Winter 2021 although there has been a slight fall in overall support between Autumn 2021 and Spring 2022 (from 87% to 85%). Opposition to renewable energy remained low, with just 1% of people saying they opposed renewable energy.

Figure 1.1: Whether support use of renewable energy (based on all people), Spring 2022



RENEWSSUPPORT. The next question is about renewable energy. This includes a number of different forms of energy, such as wind power, solar energy and biomass. Do you support or oppose the use of renewable energy for providing our electricity, fuel and heat?

Base: All wave respondents – Autumn 2021 (5,558), Winter 2021 (3,705), Spring 2022 (4,373) (Asked Quarterly)

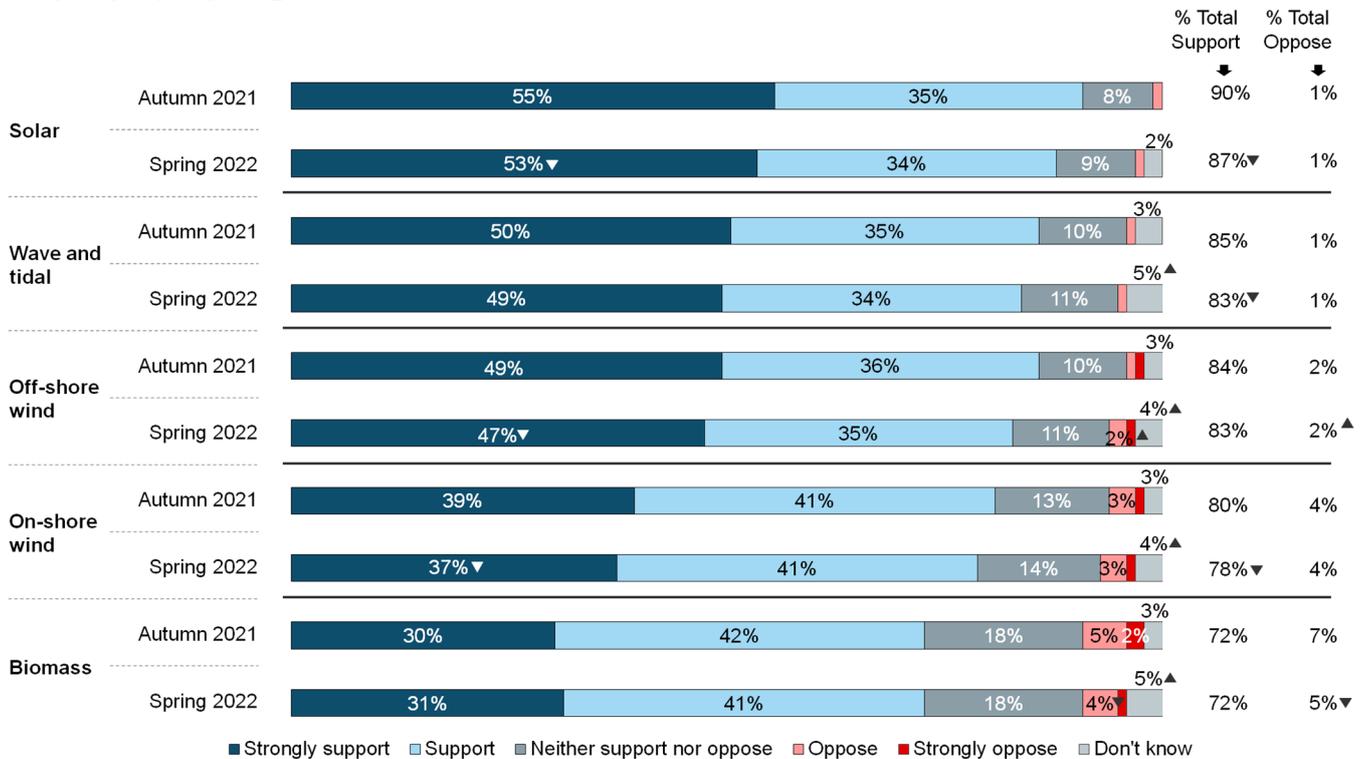
Men, people with high levels of education, and younger people were more likely to strongly support the use of renewable energy. The proportion who strongly supported renewable energy was higher for men (56% compared with 49% of women), people aged under 35 (59%, compared with 53% of people aged 35 to 64 and 45% of those aged 65+), and people educated to degree level (69%, compared with 48% of those with other qualifications and 41% of people with no qualifications).

Support for different types of renewables

As noted in Figure 1.1, 85% of people in Spring 2022 supported renewable energy as a general concept. A further question on the level of support for different types of renewable energy is asked bi-annually and was asked for the second time in Spring 2022.

In Spring 2022, level of support for different types of renewable energy developments varied by type of renewable energy. At least eight in ten were supportive of solar energy (87%, down from 90% in Autumn 2021), wave and tidal energy (83%, down from 85%), off-shore wind (83%, no change), and on-shore wind (78%, down from 80%), while support for biomass was slightly lower (72%, unchanged). However, where support for certain renewables was lower, this was mainly driven by larger proportions saying they had no opinion. Opposition remained very low across all renewable energy technologies (between 1% and 5% in Spring 2022) (Figure 2.1).

Figure 2.1: Whether support use of specific renewable energy developments (based on all people), Spring 2022



RENEW2SUPPORTA-RENEW2SUPPORTE. Generally speaking, do you support or oppose the use of the following renewable energy developments ...

*Biomass fuller wording: this refers to any plant or animal-based material (for example food waste, branches, sawdust) or purposely grown crops which can be burned to produce heat and electricity

Base: All wave respondents (Asked Biannually): Autumn 2021: Solar (5,498), wave and tidal (5,482), off-shore wind (5,490), on-shore wind (5,509), Biomass (5,470); Spring 2022: Solar (4,317), wave and tidal (4,311), off-shore wind (4,320), on-shore wind (4,327), Biomass (4,296)

Support varied by gender and education level, with men and people with higher levels of education reporting higher levels of support. Men were more likely than women to strongly support all types of renewable energy with the exception of biomass (no difference by gender): solar (56% compared with 51%); wave and tidal (55% compared with 43%); off-shore wind (53% compared with 42%); on-shore wind (40% compared with 34%). Those educated to

BEIS Public Attitudes Tracker (Spring 2022, UK)

degree level were more likely than those without a degree to say they strongly supported each of these five types of renewable energy.

People aged 65+ were less likely to strongly support on-shore wind (31% compared with 39% of people aged under 65) and solar (48% compared with 56% of people aged under 65) but this difference was not observed for other types of renewables.

Attitudes towards renewable energy and infrastructure

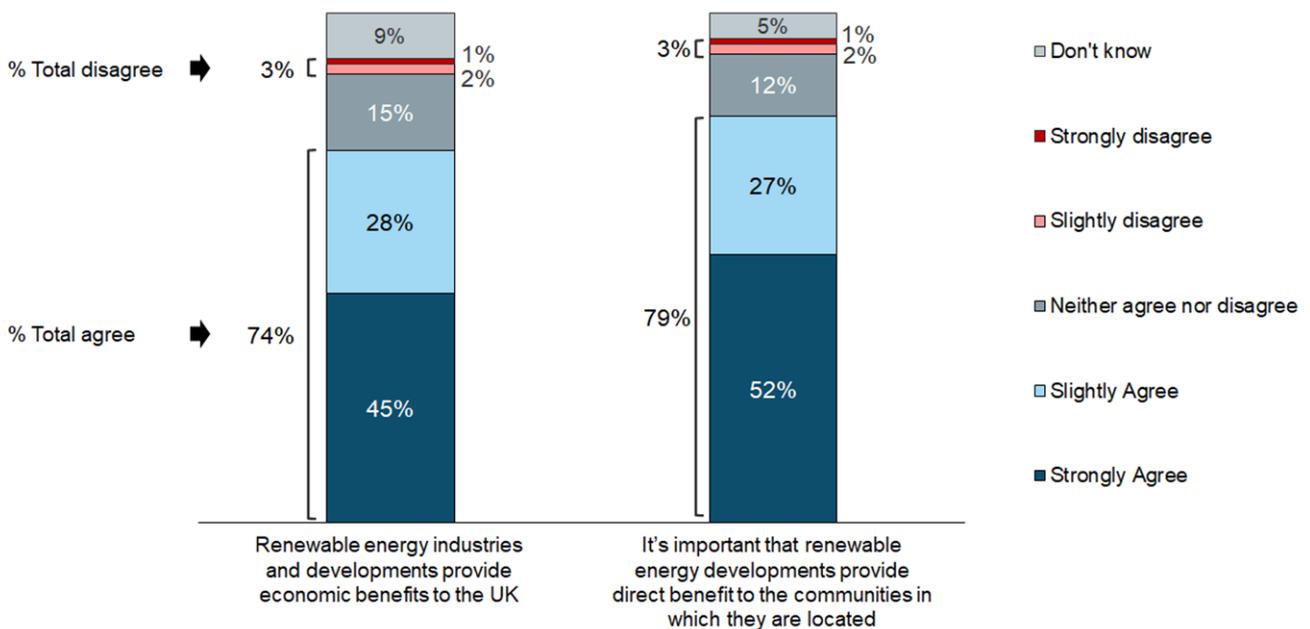
Attitudes towards renewable energy

In Spring 2022, attitudes towards renewable energy were further measured by asking people how much they agreed or disagreed with the following statements:

- ‘Renewable energy industries and developments provide economic benefits to the UK’
- ‘It’s important that renewable energy developments provide direct benefit to the communities in which they are located’

At an overall level, people were positive that renewable energy provides benefits to the national economy (74% agreed with the first statement), and that it should also directly benefit communities where they are located (79% agreed with the second statement). Negative opinions about renewable energy were rare, with only 3% of people disagreeing with each of these statements. (Figure 3.1).

Figure 3.1: Attitudes towards renewable energy (based on all people), Spring 2022



RENEWATT. As mentioned, renewable energy covers a number of different forms, including wind power, solar energy and biomass. How much do you agree or disagree with each of the following statements?

Base: All wave respondents – Spring 2022: Renewable energy industries and developments provide economic benefits to the UK (4,344); It’s important that renewable energy developments provide direct benefit to the communities in which they are located (4,328)

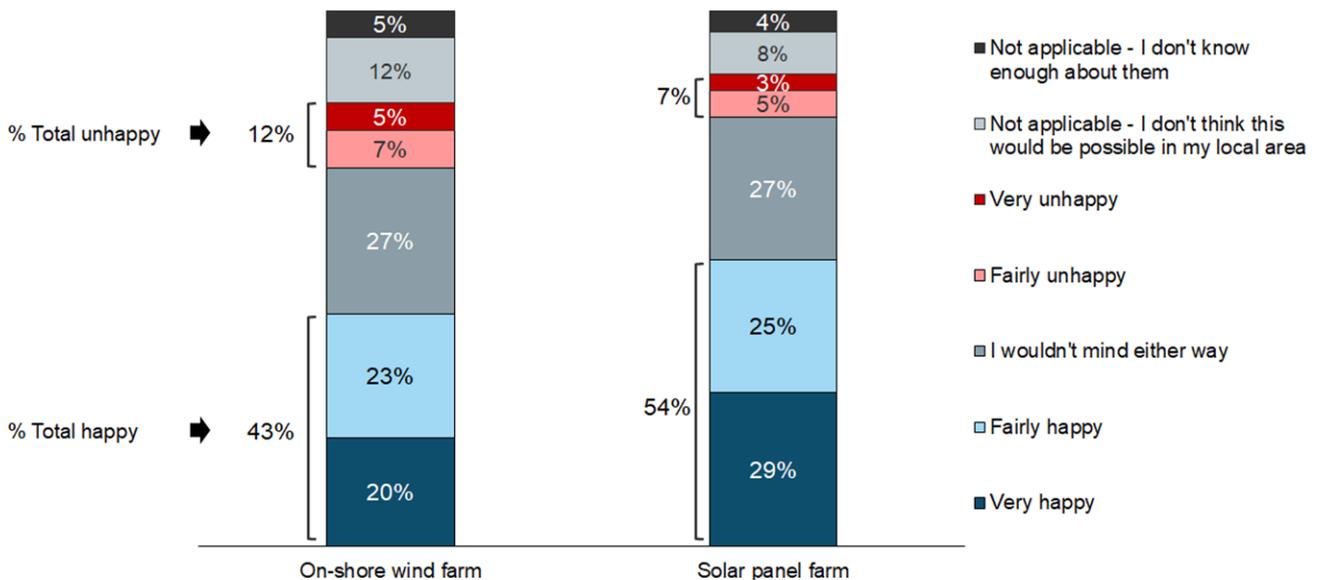
Men were more likely than women to agree that renewable energy industries and developments should provide economic benefits to the UK (78% compared with 70% of women); and those with a degree were also more likely to agree (83% compared with 74% of those with other qualifications and 62% of people with no qualifications).

Attitudes towards renewable energy infrastructure in the local area

In Spring 2022, people were asked how happy they would feel about renewable energy infrastructures being constructed in their local area; separate questions were asked about the construction of an on-shore wind farm and a solar panel farm.

People were happier for a solar panel farm to be built in their local area than an on-shore wind farm. Overall, 54% said that they would be happy about a solar panel farm being built in their local area, while 43% would be happy for an on-shore wind farm to be built in their local area (Figure 3.2). Just over a quarter (27%) said they didn't mind either way about each of these. Relatively few actively opposed either of these types of development: 12% said they would be unhappy about the local construction of an on-shore wind farm and 7% would be unhappy about the local construction of a solar panel farm. A further minority felt that such developments wouldn't be possible in their local area (12% for wind farms, 8% for solar panel farms).

Figure 3.2: Whether would be happy for an on-shore wind farm and solar panel farm to be constructed in their local area (based on all people), Spring 2022



WINDFARM. Now imagine that there are plans for an on-shore wind farm to be constructed in your local area. How happy or unhappy would you be about this? If you already have this in your local area, answer on the basis of how you feel about this now

SOLARFARM. Now imagine that there are plans for a solar panel farm to be constructed in your local area. How happy or unhappy would you be about this? If you already have this in your local area, answer on the basis of how you feel about this now

Base: All wave respondents – Spring 2022: Wind farm (4,361), Solar farm (4,369)

Men were more accepting of both types of renewable infrastructure, being more likely to be happy about a local on-shore wind farm (46% compared with 41% of women) and a local solar panel farm (58% compared with 51% of women).

People educated to degree level were also more likely to be happy about a local on-shore wind farm (48% compared with 42% of people without a degree) and about a local solar panel farm

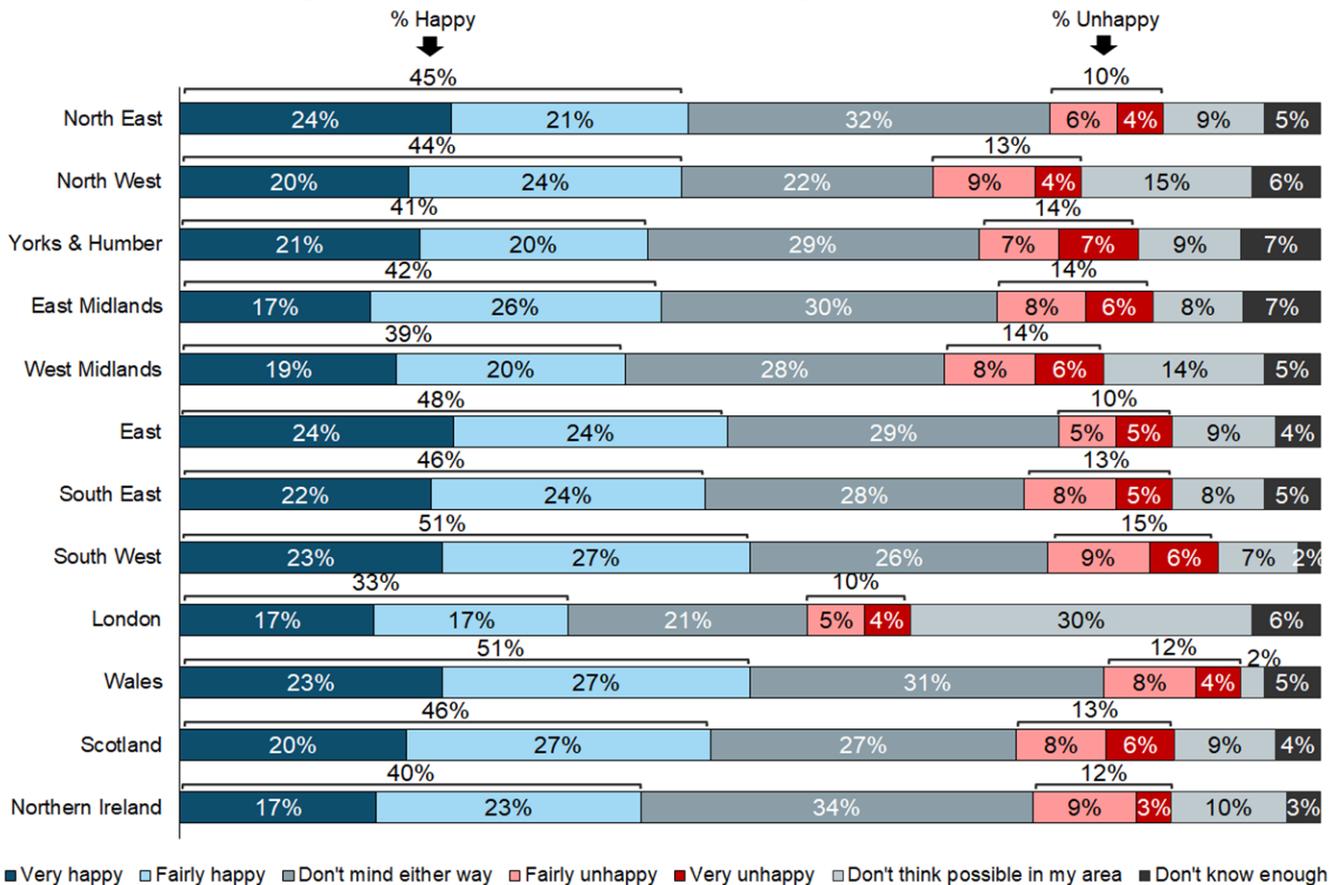
(63% compared with 54% of those with another qualification and 43% of people with no qualifications).

While there was no difference in overall happiness by age in relation to on-shore wind farms, people aged under 45 were more likely to say they would be happy to have a local solar panel farm (59% compared with 54% of people aged 45-64 and 46% of those aged 65 and over).

People who were concerned about climate change were considerably more likely to be happy about local constructions of both a solar panel farm and an on-shore wind farm. Overall, 68% of people who were very concerned about climate change said they would be happy about a local solar panel farm being built in their local area compared with 50% who were fairly concerned and 31% who were not very or not all concerned about climate change. A similar pattern was observed for local on-shore wind farms with 57%, 39% and 24% of these groups respectively saying they would be happy about this.

Levels of approval for a local on-shore wind farm varied by region (Figure 3.3). Happiness about having a local on-shore wind farm was higher than the UK average (43%) for people in the East (48%) and South West (51%) of England and in Wales (51%), while it was substantially lower in London (33%). However, the lower level of happiness for an on-shore wind farm in London was not due to a higher level of opposition, but instead because a larger percentage of people thought it wouldn't be possible to build a wind farm in their locality: 30% of Londoners felt that a wind farm would not be a viable option, considerably higher than every other locality in the UK.

Figure 3.3: Whether would be happy for an on-shore wind farm to be constructed in their local area by region (based on all people), Spring 2022



WINDFARM. Now imagine that there are plans for an on-shore wind farm to be constructed in your local area. How happy or unhappy would you be about this? If you already have this in your local area, answer on the basis of how you feel about this now

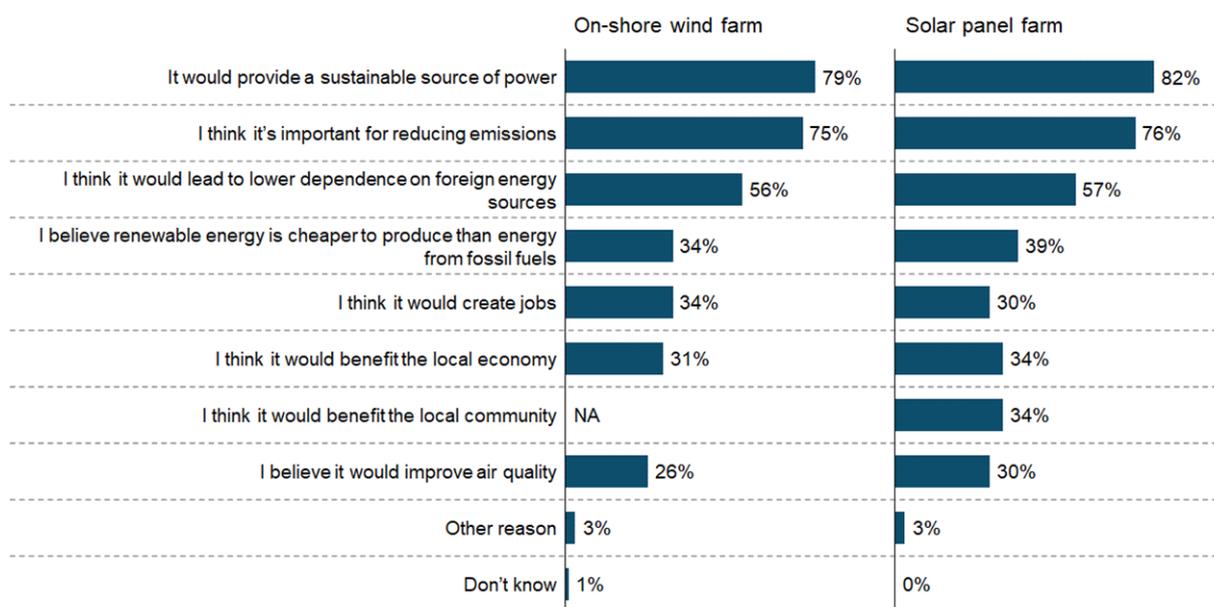
Base: All wave respondents – Spring 2022: North East (260), North West (431), Yorkshire & Humber (342), East Midlands (335), West Midlands (339), East of England (408), London (446), South East (600), South West (424), Wales (213), Scotland (390), Northern Ireland (173)

There was relatively little regional variation in relation to happiness for a local solar panel farm, although, as with on-shore wind farms, people in London were more likely to think this wouldn't be possible in their local area (20% compared with an average of 6% of people outside of London).

Reasons for being happy about energy infrastructure in local area

Overall in Spring 2022, 43% of people would be happy to have an on-shore wind farm, and 54% would be happy to have a solar panel farm, constructed in their local area. People who said they would be happy about each of these were asked why this was the case. People were prompted to choose from a list of possible reasons, or they could choose an 'other' reason. (Figure 3.4)

Figure 3.4: Reasons for being happy to have an on-shore wind farm or solar panel farm constructed in their local area (based on all who would be happy), Spring 2022



WINDWHYHAPP. You said you would be very or fairly happy for an on-shore wind farm to be built in your local area. Why is this? Please select all that apply

SOLWHYHAPP. You said you would be very or fairly happy for a solar panel farm to be built in your local area. Why is this? Please select all that apply

Base: All wave respondents who would be happy – Spring 2022: Wind farm (1,935), Solar farm (2,363)

The main reasons for being happy about such constructions in their local area were similar for both types of renewable energy infrastructure. Among those who said they would be happy about each of these, a large majority said that it was because they would provide a sustainable source of power (79% wind, 82% solar) with around three quarters saying it was because they think it important for reducing emissions (75% wind, 76% solar). National energy security was also an important reason, with over half of those who were happy thinking that local construction would lower dependence on foreign energy sources (56% wind, 57% solar). It should be noted that the survey was fielded during the war in Ukraine when the potential impact of the war on foreign imports of energy, and on energy prices, was widely covered in the media. This may partly explain the prominence of this reason compared with some other items in the list.

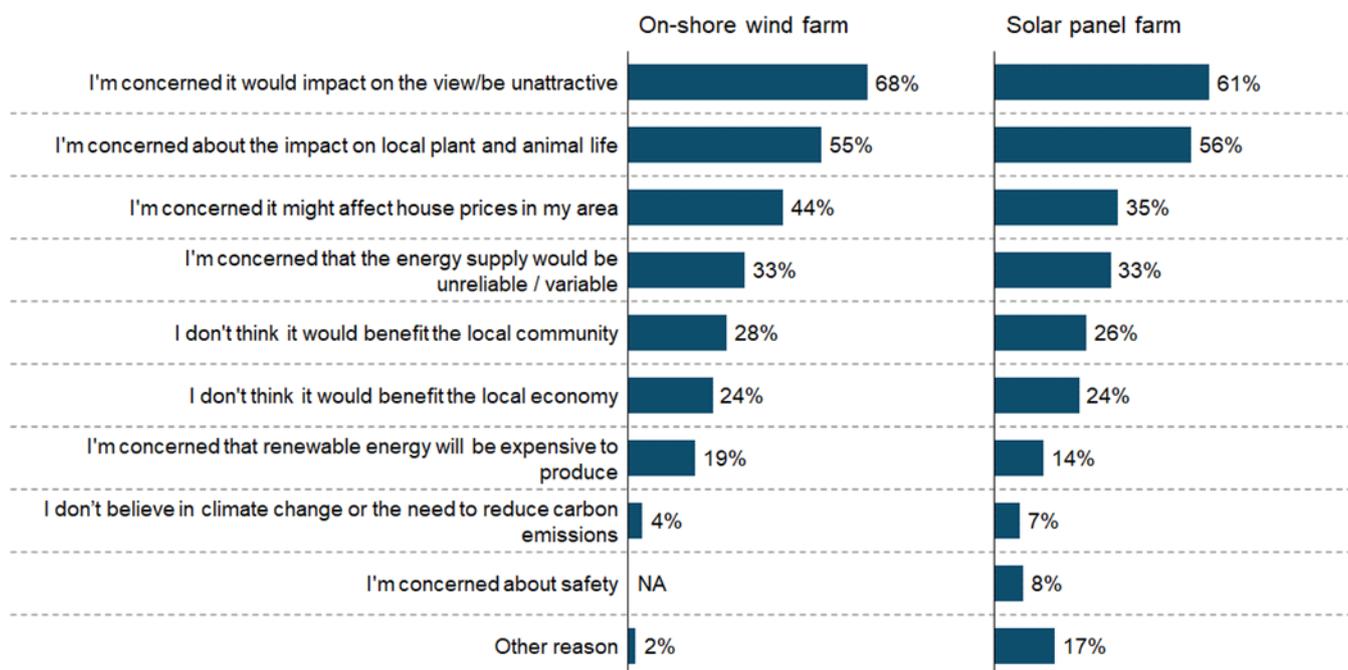
Other reasons for being happy to have renewable energy infrastructures in their local area focussed on economic factors such as cheaper energy production (34% wind, 39% solar), creation of jobs (34% wind, 30% solar), and benefitting the local economy (31% wind, 34% solar). The potential for improved air quality (26% wind, 30% solar) was also mentioned. One

in three (34%) of those happy about a local solar panel farm thought that this would benefit the local community (not included in the list of options for wind farms).

Reasons for being unhappy about energy infrastructure in local area

Overall in Spring 2022, 12% of people would be unhappy to have an on-shore wind farm, and 7% would be unhappy to have a solar panel farm, constructed in their local area. People who said they would be unhappy about each of these were asked why this was the case. People were prompted to choose from a list of possible reasons, or they could choose an ‘other’ reason. (Figure 3.5).

Figure 3.5: Reasons for being unhappy to have an on-shore wind farm or solar panel farm constructed in their local area (based on all who would be unhappy), Spring 2022



WINDWHYNO. You said you would be very or fairly unhappy for an on-shore wind farm to be built in your local area. Why is this? Please select all that apply

SOLWHYNO. You said you would be very or fairly unhappy for a solar panel farm to be built in your local area. Why is this? Please select all that apply

Base: All wave respondents who would not be happy – Spring 2022: Wind farm (573), Solar farm (361)

The reasons provided for why people would object to these constructions was similar for both on-shore wind farms and solar panel farms. Within the subgroups of people feeling unhappy about these, the main reasons were concerns about it being unattractive or impacting the view (68% wind, 61% solar), impact on local plant and animal life (55% wind, 56% solar), and concerns about impact on house prices (44% wind, 35% solar).

Between a quarter and third of each of these subgroups cited concerns about reliability of energy supply (33% for both), and possible negative impacts on the local community (28% wind, 26% solar) or local economy (24% for both). Smaller proportions were concerned about

the cost of production (19% wind, 14% solar) and a relatively high proportion (17%) gave an 'other' response to why they wouldn't want a solar panel farm in the locality¹.

¹ Other reasons included concerns that technology is ineffective or inefficient, or that they consider this to be an inappropriate use of land/better to locate in homes.

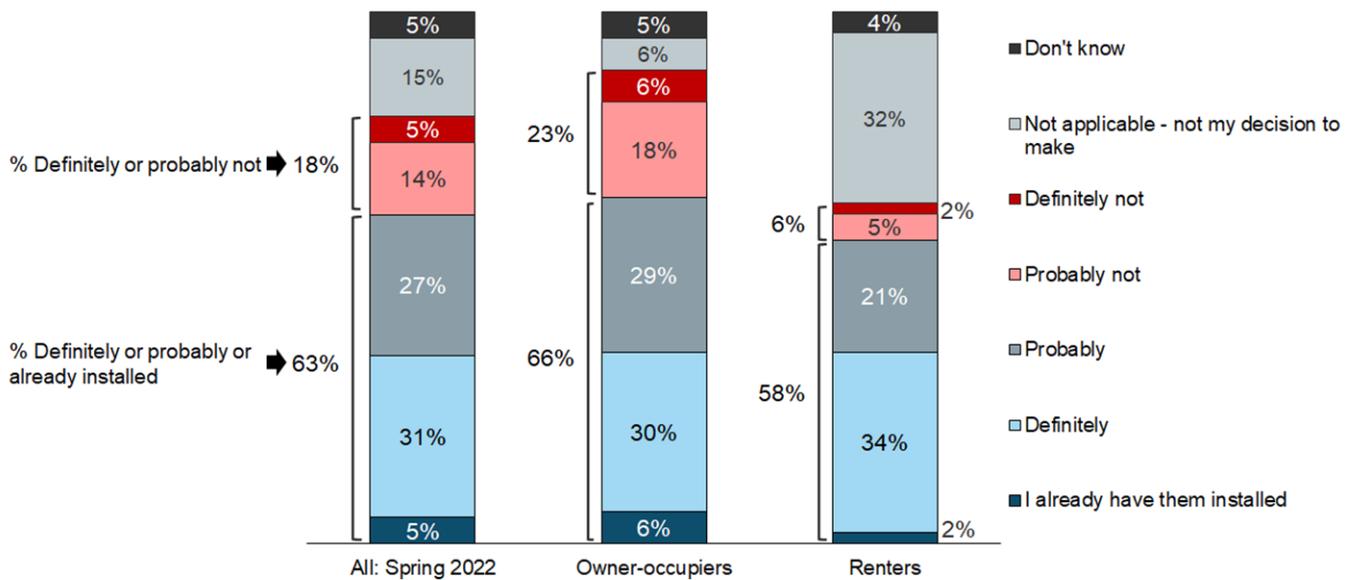
Attitudes towards solar panels in the home

In Spring 2022, people were asked about their propensity to install solar panels in their home in the next few years. The results are shown separately by tenure.

Two in three people living in owner-occupied homes (66%) said that they either already had or would be likely to consider installing solar panels in their home in the next few years, with 30% saying they would definitely consider this, 29% saying they would probably do so, and 6% who already had these installed (Figure 4.1). Almost a quarter (23%) of people living in owner-occupied homes said they probably wouldn't (18%) or definitely wouldn't (6%) do this.

Among renters, a third (32%) say that they wouldn't be in a position to make this decision, and as a result the likelihood of considering installing or already having these installed was lower (58%). Given that a large proportion of renters do not regard this issue as applicable to them, the remaining analysis in this section is based only on people living in owner-occupied homes.

Figure 4.1: Likelihood to consider installing solar panels in the home to generate electricity by tenure (based on all respondents), Spring 2022



SOLARHOME. Would you consider having solar panels installed in your current home to generate electricity, in the next few years?

Base: Spring 2022 - All wave respondents (4,367); Owner-occupiers (3,285); Renters (963)

Focussing on owner-occupied homes only, the following subgroups of people living in owner-occupied homes were more likely to be open to the idea of installing solar panels in their home²: people educated to degree level (72% compared with 57% of those with no qualifications); people aged 25-55 (74% compared with 62% of people aged 16-24, 67% of those aged 55-64 and 53% of those aged 65 or over); people who live in a house or bungalow (67% compared with 48% of people who live in flats); and people with higher level occupations

² These percentages include those who had already had these installed in their home

(ranging from 70% of those in managerial and professional occupations to 54% of those in semi-routine or routine occupations).

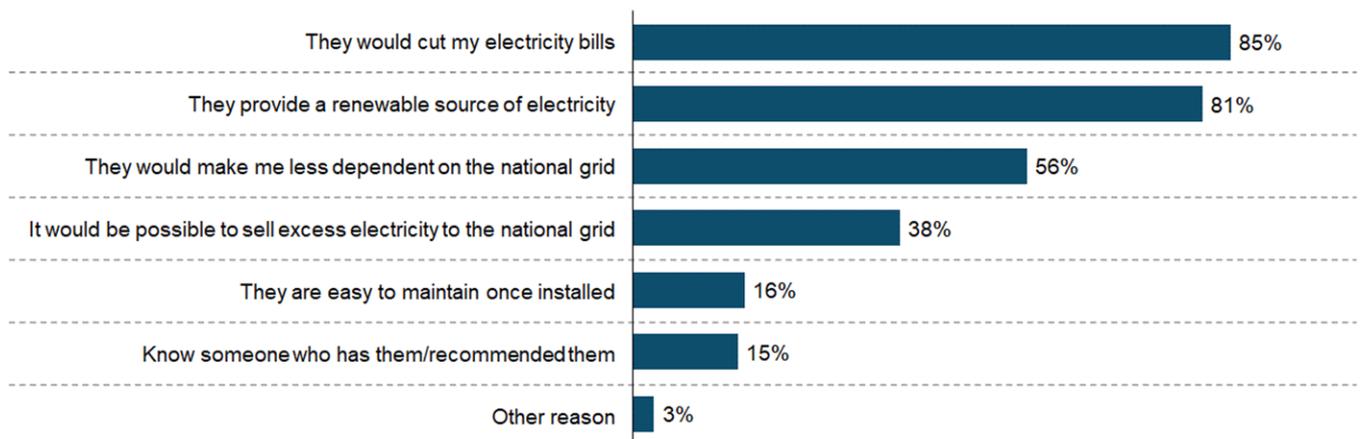
Reasons for being likely to install solar panels

People living in owner-occupied homes who didn't already have solar panels but said they were likely to install them in their home in the next few years were asked their reasons for this (respondents were presented with a list of possible reasons).

In Spring 2022, economic and environmental considerations both played a major role in propensity to install solar panels (Figure 4.2). The two main motivations for considering solar panels were to cut electricity bills (85%) and to provide a renewable source of electricity (81%).

Over half saw being less dependent on the national grid as a motivation (56%), with fewer choosing the ability to sell excess electricity to the grid (38%), ease of maintenance (16%), or being recommended them (15%) as motivations to install solar panels.

Figure 4.2: Reasons for considering installing solar panels in the home to generate electricity (based on owner occupiers who would consider this), Spring 2022



SOLARWHYINT. You said that you would consider installing solar panels. Why is this? Please select all that apply

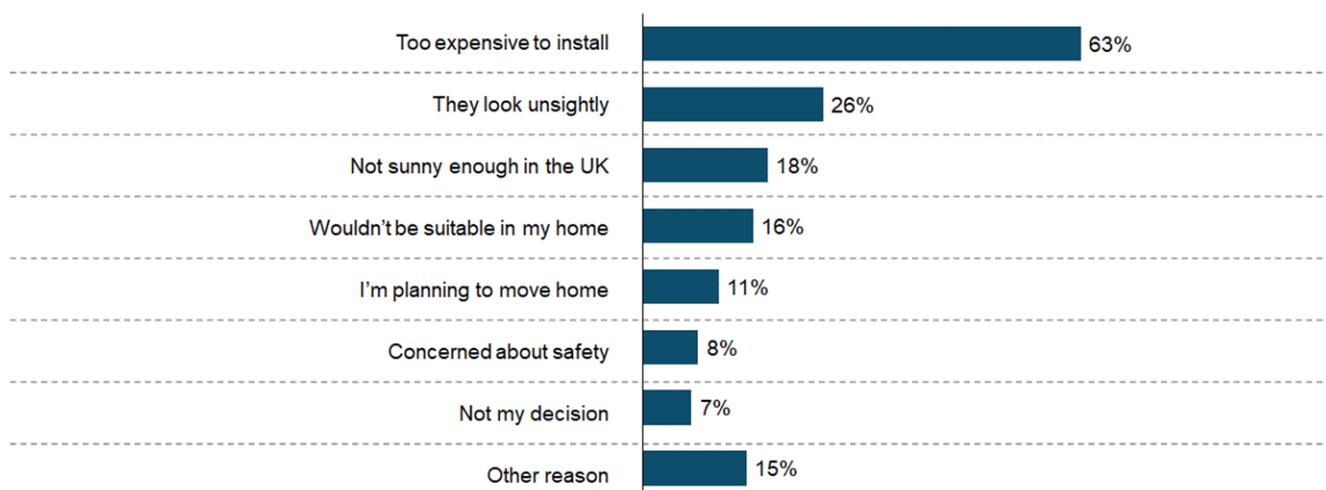
Base: All wave owner occupiers who would consider this - Spring 2022 (1,921)

Reasons for being unlikely to install solar panels

People living in owner-occupied homes who said they were unlikely to install solar panels in their home in the next few years were asked their reasons for this (respondents were presented with a list of possible reasons).

In Spring 2022, expense was by far the main barrier for owner-occupiers who would not consider solar panels with 63% of this group saying they were too expensive to install (Figure 4.3). Other more minority objections include looking unsightly (26%), insufficient sun in the UK (18%), not suitable to install in their home (16%)³ or a plan to move home (11%). A relatively high proportion (15%) mentioned other reasons not to install solar panels⁴.

Figure 4.3: Reasons for not considering installing solar panels in the home to generate electricity (based on owner occupiers who would not consider this), Spring 2022



SOLPANWHYNO. You said that you probably or definitely wouldn't install solar panels. Why is this? Please select all that apply

Base: All wave owner occupiers who would not consider this – Spring 2022 (845)

³ While this figure may seem relatively low, it is worth noting that 91% of people living in owner-occupied homes live in a house or bungalow and only 8% live in a flat.

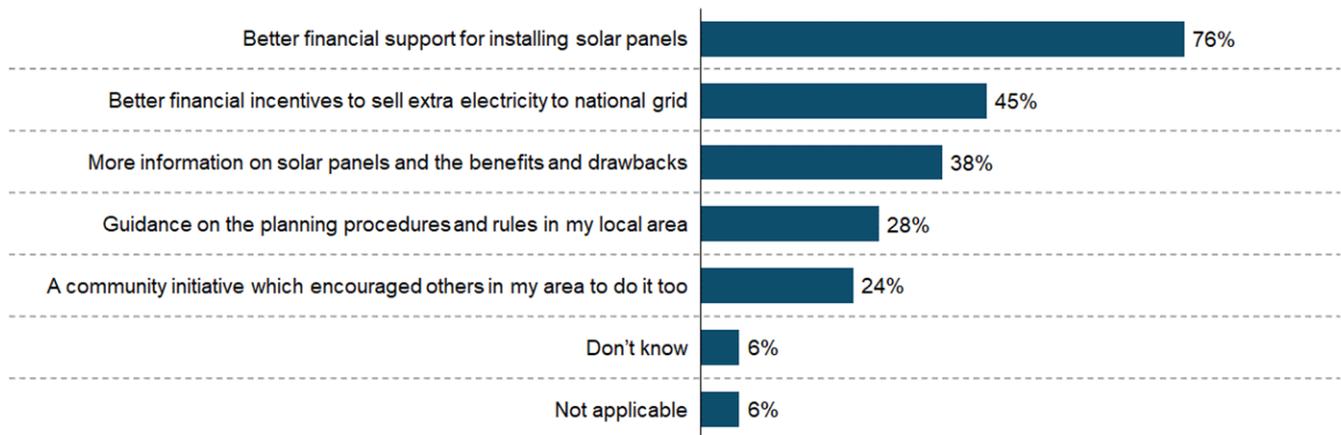
⁴ Other reasons cited included a belief that technology is ineffective or inefficient, the respondent feeling they are too old, and the hassle of installation and upkeep.

What might encourage people to install solar panels

Excluding those who said this was not their decision to make, people living in owner-occupied homes who did not already have solar panels were asked which of a list of possible factors might encourage them to install solar panels (Figure 4.4).

In Spring 2022, better financial support for installation was by the far the biggest encouragement factor: overall 76% selected this reason. Other people in this subgroup would be encouraged by incentives to sell electricity to the national grid (45%), and more information (38%). Fewer than three in ten would be encouraged by guidance on local planning rules (28%) or community initiatives (24%).

Figure 4.4: What would encourage people to install solar panels (based on owner-occupiers responsible for decision who have not yet installed panels), Spring 2022



SOLARENC. Which, if any, of the following might make you more likely to consider installing solar panels? Please select all that apply

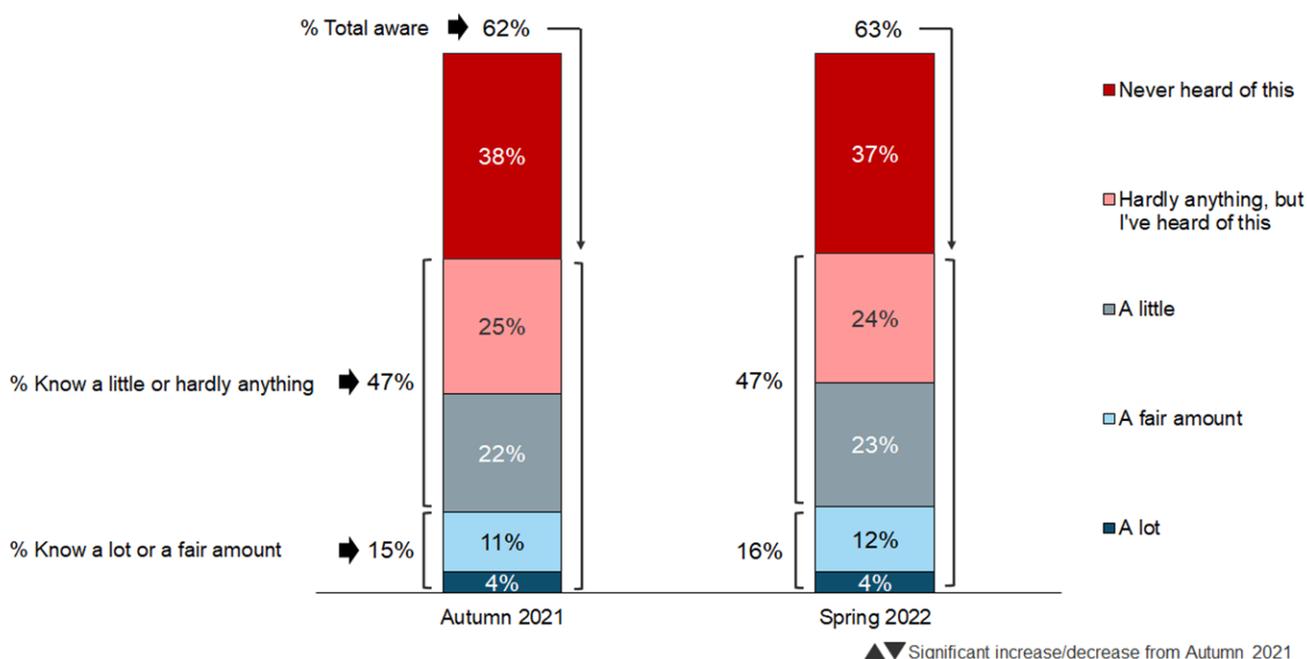
Base: All wave owner occupiers who have not already installed them excluding those who said it was not their decision to make – Spring 2022 (2,907)

Awareness and support for fusion energy

Respondents were provided with the following explanation before being presented with some questions on this topic *'Fusion energy is an experimental technology that works by fusing together atoms in order to release energy. The UK is exploring whether this technology could be used to generate zero carbon electricity'*.

In Spring 2022, 63% of people had at least some knowledge of fusion energy before the interview (Figure 5.1). This comprised 16% knowing a lot (4%) or a fair amount (12%), 23% knowing a little, and 24% saying they had heard of it but knew hardly anything about it. There was no change in awareness or level of knowledge of fusion energy between Autumn 2021 and Spring 2022.

Figure 5.1: Awareness of fusion energy (based on all people), Spring 2022



FUSIONKNOW. Fusion energy is an experimental technology that works by fusing together atoms in order to release energy. The UK is exploring whether this technology could be used to generate zero carbon electricity. Before today, how much, if anything, did you know about fusion energy?

Base: All wave respondents – Autumn 2021 (5,558), Spring 2022 (4,378)

Men were much more likely to be aware of fusion energy (76% compared with 51% of women) and to say they knew at least a fair amount about it (26% compared with 6% of women).

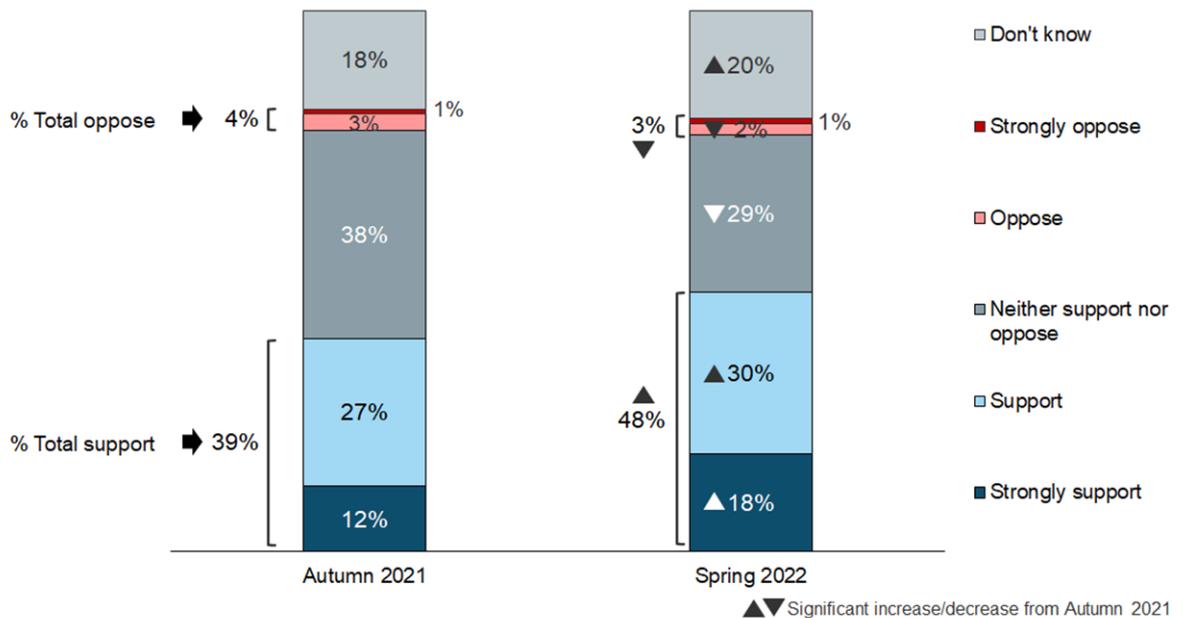
People aged 16 to 24 were also more likely to say they knew at least a fair amount about fusion (23% compared with 15% of people aged 25 or over).

As for other energy technologies, awareness of fusion energy was also higher for those educated to degree level (77% compared with 61% of those with other qualifications and 46% of people with no qualifications) and there was a similar pattern in reported levels of knowledge (26% of degree-educated people saying they knew at least a fair amount, compared with 14% of those with other qualifications and 5% of people with no qualifications).

While there had been no change in levels of knowledge of fusion, there was evidence of increased support for fusion energy between Autumn 2021 to Spring 2022 (Figure 5.2).

Overall support increased from 39% in Autumn 2021 to 48% in Spring 2022, with the proportion who strongly supported this rising from 12% to 18%. This was driven by a fall in the proportion who gave a non-committal (neither support nor oppose) answer from 38% in Autumn 2021 to 29% in Spring 2022. Opposition to fusion energy was already very low in Autumn 2021 (4%) but declined further to 3% in Spring 2022.

Figure 5.2: Whether support fusion energy (based on all people), Spring 2022



FUSIONSUPPORT. From what you know, or have heard about fusion energy, do you support or oppose the UK developing this technology?

Base: All wave respondents – Autumn 2021 (5,555), Spring 2022 (4,368)

In Spring 2022, men (60%, compared with 36% of women) and degree educated people (61%, compared with 46% of those with another qualification and 34% of those with no qualifications) were more likely to support fusion energy.

While women remained relatively less supportive of fusion than men, there was a greater increase in support since Autumn 2021 for women (36% up from 25%) than for men (60% up from 55%). By education, there was no increase among people with no qualifications, with the increase driven by those with a degree (61% up from 49%) or other qualification (46% up from 36%).

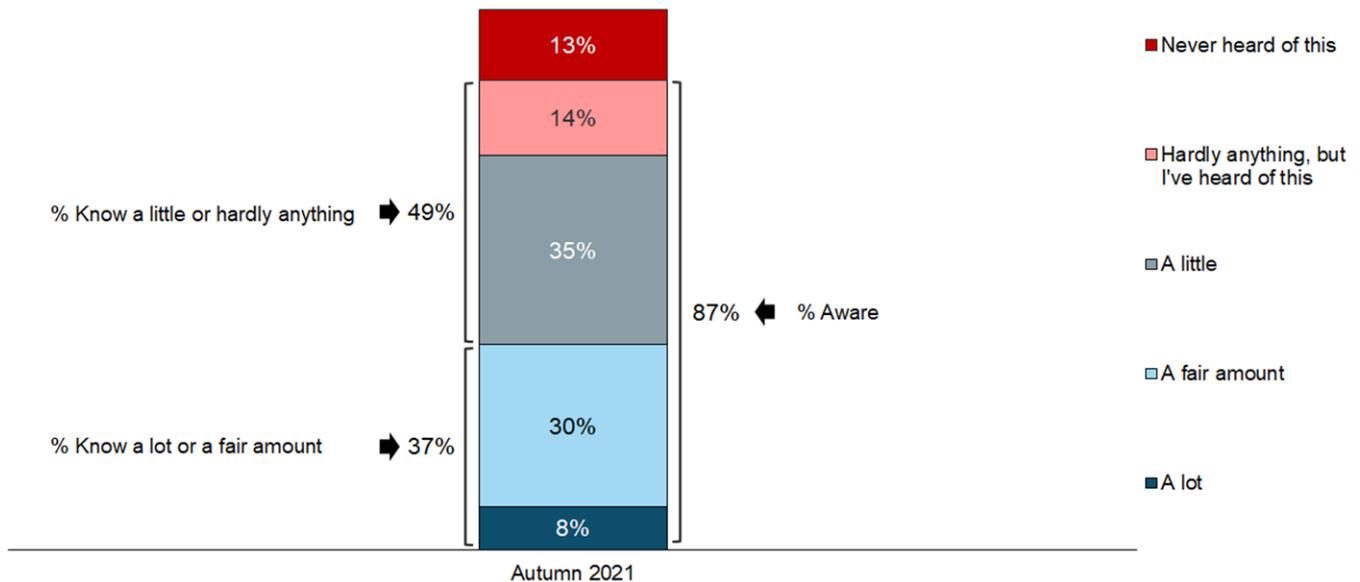
Awareness and support for shale gas

Questions on awareness and attitudes towards shale gas were last asked in Autumn 2021.

In Autumn 2021, 87% of people had at least some previous knowledge of hydraulic fracturing for shale gas otherwise known as 'fracking', where this was described to respondents as follows: *'Shale gas is natural gas found in shale, a type of rock which does not allow the gas to escape. Hydraulic fracturing or "fracking" is a process of pumping water at high pressure into shale to create narrow fractures which allow the gas to be released and captured. The gas can then be used for electricity and heating'*.

Over a third (37%) said they knew a lot (8%) or a fair amount (30%) about it, while nearly half (49%) said they knew a little (35%) or hardly anything about it (14%) (Figure 6.1).

Figure 6.1: Awareness of fracking (based on all people), Autumn 2021



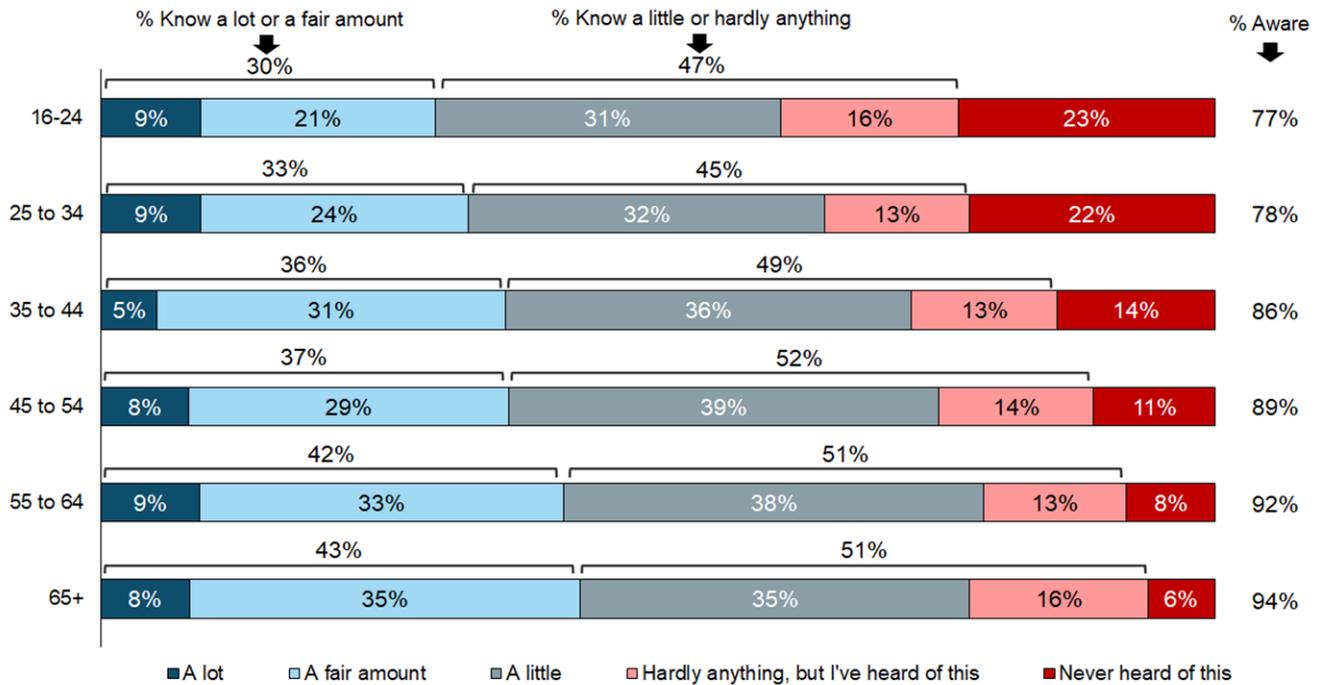
FRACKKNOW. Shale gas is natural gas found in shale, a type of rock which does not allow the gas to escape. Hydraulic fracturing or “fracking” is a process of pumping water at high pressure into shale to create narrow fractures which allow the gas to be released and captured. The gas can then be used for electricity and heating. Before today, how much, if anything, did you know about hydraulic fracturing for shale gas, otherwise known as ‘fracking’?

Base: All wave respondents – Autumn 2021 (5,559)

Men were more likely to say they were aware of fracking (92% compared with 82% of women) with a more marked difference in the proportion of men saying they knew at least a fair amount (48% compared with 27% of women).

Awareness of fracking was also higher among older people (Figure 6.2): 93% of those aged 55 or over compared with 77% of those aged 16 to 34. There was a similar age pattern in terms of the proportion who knew at least a fair amount about fracking: 43% of those aged 65 and over, declining through the age groups to 30% of 16 to 24s.

Figure 6.2: Awareness of fracking (based on all people), by age, Autumn 2021



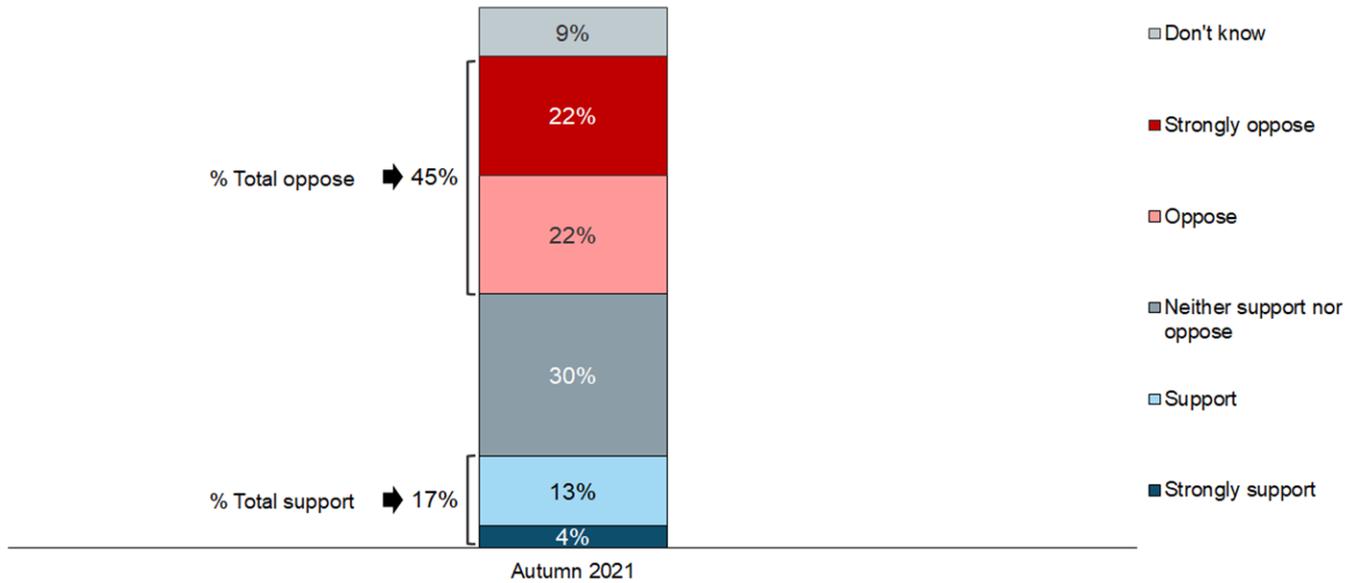
FRACKNOW. Shale gas is natural gas found in shale, a type of rock which does not allow the gas to escape. Hydraulic fracturing or “fracking” is a process of pumping water at high pressure into shale to create narrow fractures which allow the gas to be released and captured. The gas can then be used for electricity and heating. Before today, how much, if anything, did you know about hydraulic fracturing for shale gas, otherwise known as ‘fracking’?

Base: All wave respondents – Autumn 2021: 16 to 24 (332), 25 to 34 (686), 35 to 44 (655), 45 to 54 (774), 55 to 64 (905), 65 or over (2,170)

People educated to degree level were more likely to be aware of fracking (91% compared with 78% of people with no qualifications), and to know at least a fair amount about it (49% compared with 25%).

In Autumn 2021, opposition to fracking clearly outweighed support (Figure 6.3). In total 17% said they supported shale gas extraction, including just 4% of people expressing strong support. On the other hand, 45% said they opposed it, including 22% of people who strongly opposed it. However, levels of indecision were high, with three in ten people (30%) saying they neither supported nor opposed fracking.

Figure 6.3: Whether support fracking (based on all people), Autumn 2021



FRACKSUPPORT. From what you know, or have heard, about extracting shale gas to generate the UK's heat and electricity, do you support or oppose its use?
 Base: All wave respondents – Autumn 2021 (5,556)

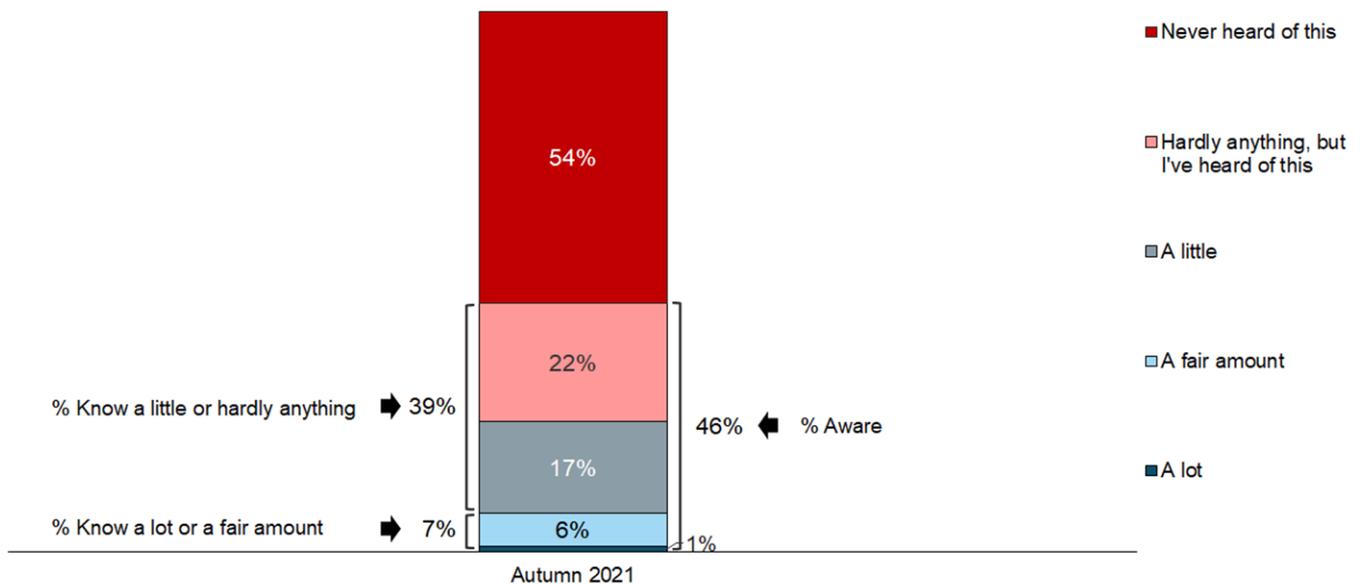
Those educated to degree level were more likely to oppose fracking (56% compared with 43% of those with other qualifications and 31% of people with no qualifications).

Awareness of small modular reactors

A question on awareness of small module reactors was last asked in Autumn 2021.

In Autumn 2021, 46% of people said they had heard of small modular reactors before the interview, described as ‘...new types of nuclear reactors, similar to existing nuclear power stations, but on a smaller scale. They can be used for electricity generation, to provide industry with heat and power, or to provide energy to UK communities not connected to the national gas grid’. However, only 7% said they knew at least a fair amount about them and 39% said they knew only a little or hardly anything (Figure 7.1). Over half (54%) had never heard of them.

Figure 7.1: Awareness of small modular reactors (based on all people), Autumn 2021



SMRKNOW. The next question is about Small Modular Reactors. These are new types of nuclear reactors, similar to existing nuclear power stations, but on a smaller scale. They can be used for electricity generation, to provide industry with heat and power, or to provide energy to UK communities not connected to the national gas grid. Before today, how much, if anything, did you know about Small Modular Reactors?

Base: All wave respondents – Autumn 2021 (5,548)

Men were considerably more likely to be aware of small modular reactors (57% compared with 35% of women). Awareness was also higher for those educated to degree level (54% compared with 34% of people with no qualifications).

Attitudes towards nuclear energy

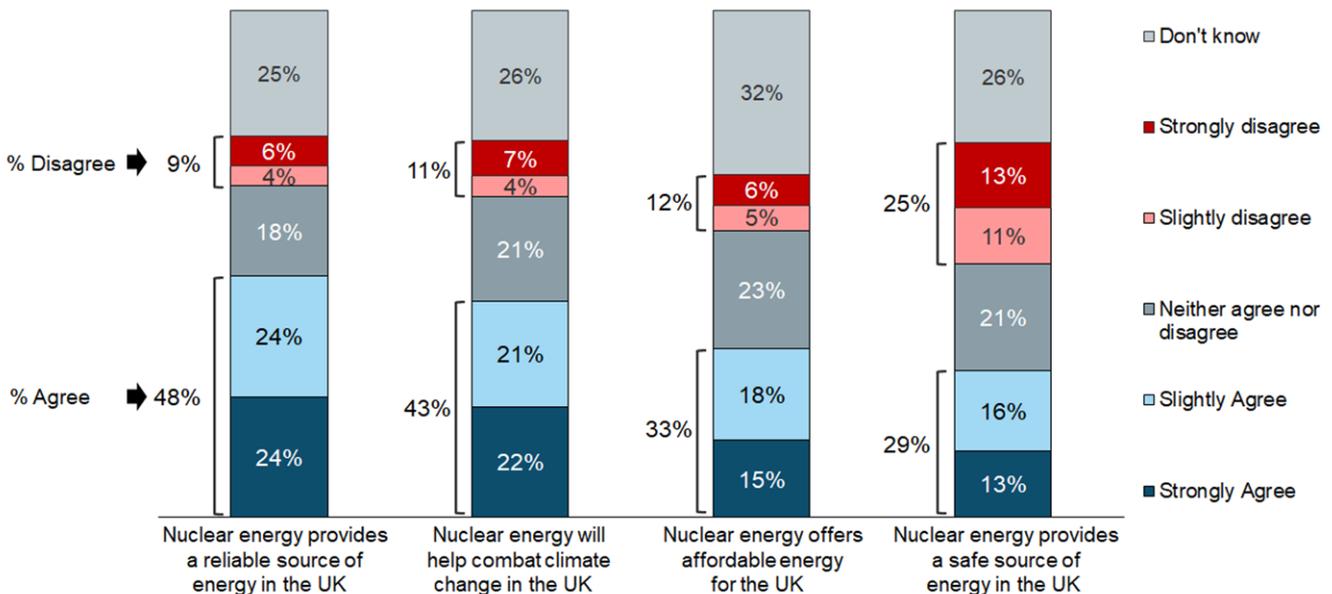
In Winter 2021, people were asked whether they agreed or disagreed with four statements in relation to nuclear energy.

For each of the four statements, the proportion of respondents who gave a non-opinion response - that is 'neither agree nor disagree' or 'don't know' - ranged from 43% to 55%, pointing to a substantial degree of uncertainty in attitudes in relation to nuclear energy (Figure 8.1).

Amongst those who gave an opinion for each statement, the public were more positive than negative about nuclear energy. Overall:

- 48% agreed (either strongly or slightly) that nuclear energy provides a reliable source of energy in the UK (compared with 9% who disagreed)
- 43% agreed that nuclear energy will help combat climate change in the UK (compared with 11% who disagreed)
- 33% agreed that nuclear energy offers affordable energy for the UK (12% disagreed)
- 29% agreed that nuclear energy provides a safe source of energy in the UK (25% disagreed)

Figure 8.1: Attitudes towards nuclear energy (based on all people), Winter 2021



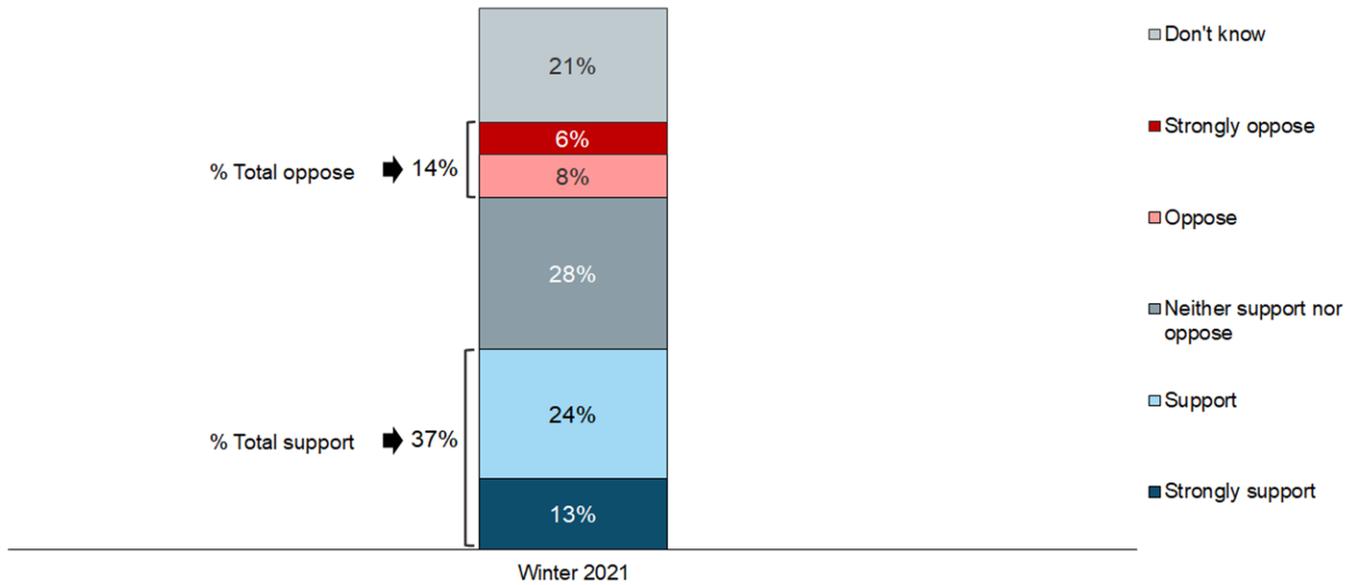
NUCATT-NUCATTD. The next questions are about nuclear energy. How much do you agree or disagree with the following statements?

Base: All wave respondents – Winter 2021: Nuclear energy provides a reliable source of energy in the UK (3,669), Nuclear energy will help combat climate change in the UK (3,683), Nuclear energy offers affordable energy for the UK (3,668), Nuclear energy provides a safe source of energy in the UK (3,670)

Overall, a fifth (20%) of people agreed with all four of these statements. Those most likely to agree with all four statements included men (27%, compared with 14% of women) and those educated to degree level (25%, compared with 19% of those with other qualifications and 18% of those with no qualifications).

In Winter 2021, 37% of the public supported using nuclear energy for generating electricity in the UK (Figure 8.2). This comprised 24% who supported it and 13% who strongly supported it. Overall, 14% opposed use of nuclear energy, with 6% strongly opposing it use. Around half did not give an opinion either way: 28% said that they neither supported nor opposed the use of nuclear energy, and 21% didn't know.

Figure 8.2: Whether support nuclear energy (based on all people), Winter 2021



NUCSUPPORT. From what you know, or have heard about using nuclear energy for generating electricity in the UK, do you support or oppose its use?

Base: All wave respondents – Winter 2021 (3,703)

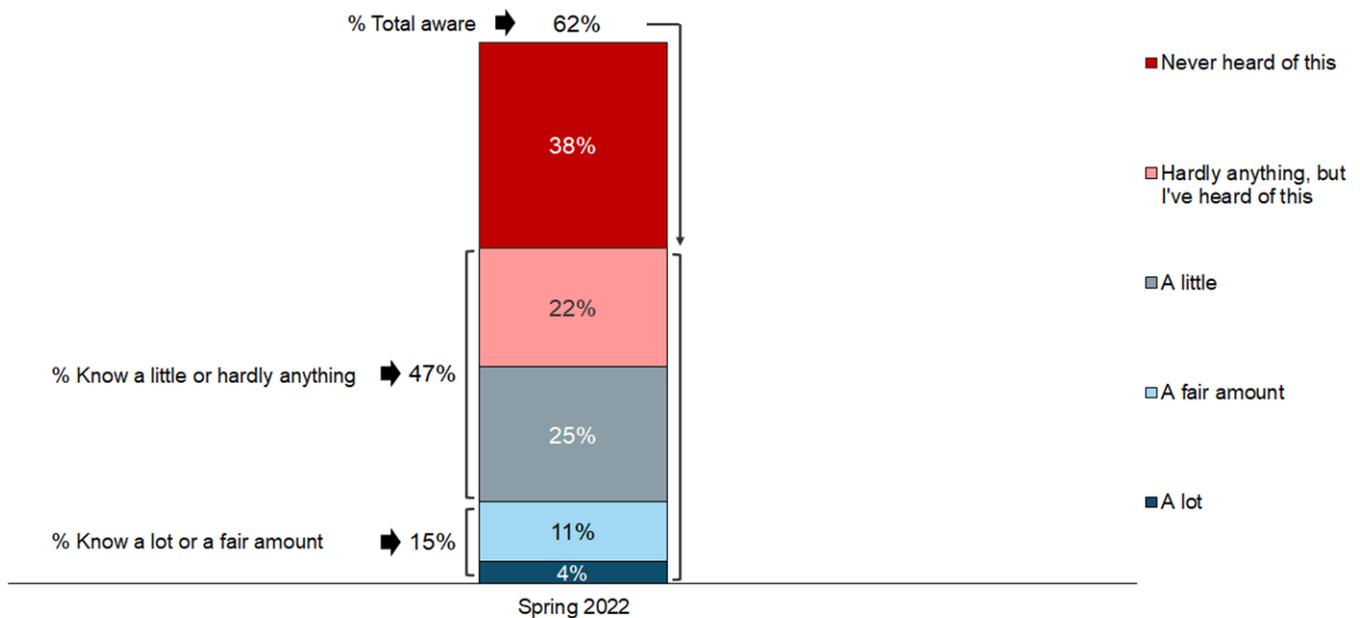
Support for nuclear energy was higher among men (49%, compared with 26% of women). However, this was to a large extent related to larger proportions of women answering 'don't know'; the level of opposition to nuclear energy was the same for both genders.

Awareness and support for carbon capture and storage

Respondents were provided with the following explanation before being presented with some questions on this topic: *‘Carbon capture and storage is a technology that stops greenhouse gases entering the atmosphere. It typically involves capturing carbon dioxide (CO2) emissions from power stations or industrial facilities where emissions are high. The CO2 is then piped to offshore underground storage sites, where it can be safely and permanently stored.’*

In Spring 2022, 62% of the public said they were aware of carbon capture and storage. This comprised 4% who knew a lot about it, 11% who knew a fair amount, and almost half (47%) saying they knew just a little (25%) or hardly anything (22%). Nearly four in ten (38%) had never heard of this (Figure 9.1).

Figure 9.1: Awareness of carbon capture and storage (based on all people), Spring 2022



CCSKNOW. Carbon capture and storage is a technology that stops greenhouse gases entering the atmosphere. It typically involves capturing carbon dioxide (CO2) emissions from power stations or industrial facilities where emissions are high. The CO2 is then piped to offshore underground storage sites, where it can be safely and permanently stored. Before today, how much, if anything, did you know about carbon capture and storage?
 Base: All wave respondents –Spring 2022 (4,375)

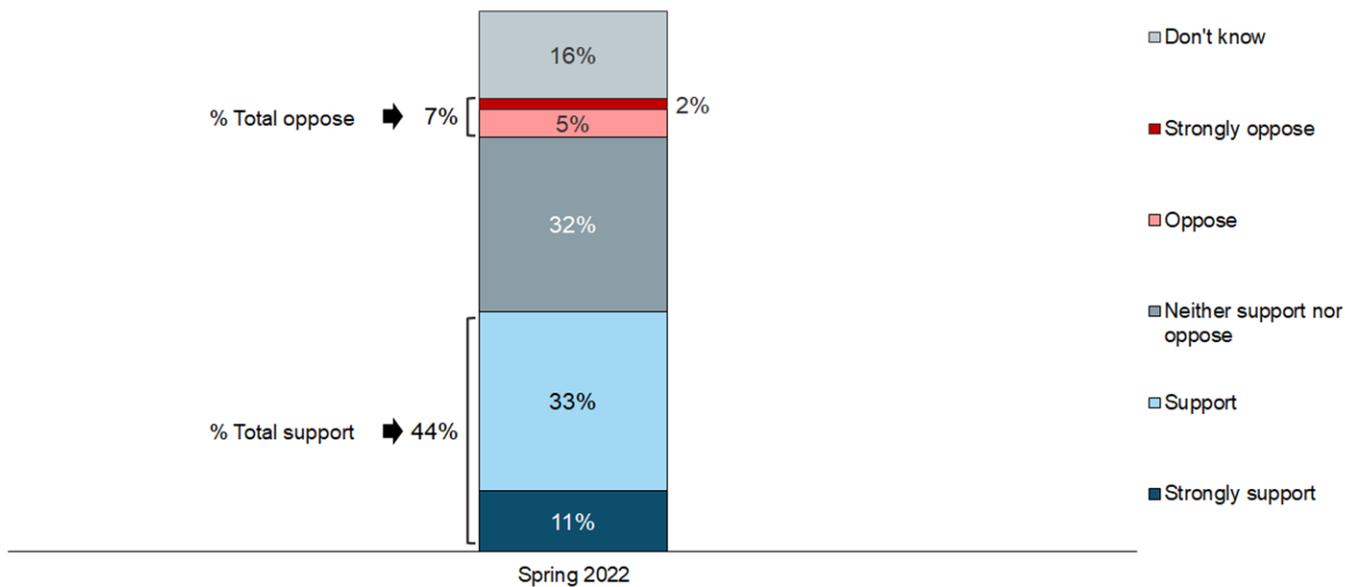
Men were much more likely to be aware of carbon capture (73% compared with 51% of women) and to say they knew at least a fair amount about it (23% compared with 7% of women).

As for most energy technologies, awareness of carbon capture was also higher among those educated to degree level (74% compared with 58% of those with other qualifications and 46% of people with no qualifications). The proportion of people who said they knew a lot or a fair amount about carbon capture was also higher among those educated to degree level (24% of degree-educated people compared with 11% of those with other qualifications and 7% of people with no qualifications).

Around half of people could not give an opinion on whether they supported or opposed carbon capture, with 48% saying they neither supported or opposed the technology (32%) or didn't know (16%) (Figure 9.2). This reflects the low level of understanding about this technology (Figure 9.1).

Where people did give an opinion, they were much more likely to support (44%) than oppose the technology (7%).

Figure 9.2: Whether support or oppose carbon capture and storage (based on all people), Spring 2022



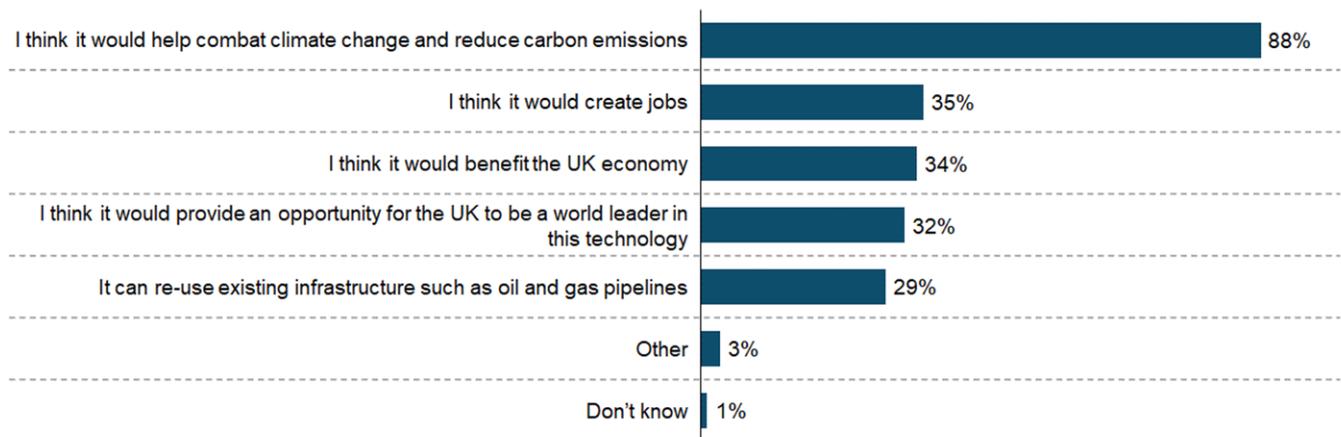
CCSSUPPORT. From what you know, or have heard about it, do you support or oppose the use of carbon capture and storage to reduce greenhouse gas emissions?
 Base: All wave respondents –Spring 2022 (4,366)

Support for carbon capture was higher among men (50%, compared with 39% of women) and degree educated people (55%, compared with 42% of those with another qualification and 34% of those with no qualifications). It was also considerably higher among those who were very or fairly concerned about climate change (48%) than those who were not very or not all concerned about it (27%).

Overall, 44% of people were supportive about the use of carbon capture and storage, and 7% opposed it. People were asked their reasons for support or opposition, from a list of possible reasons.

The principal reason for supporting the use of carbon capture and storage was to help combat climate change and reduce carbon emissions (88%) (Figure 9.3). Further reasons, each cited by around one in three supporters of carbon capture and storage included job creation (35%), benefit to the UK economy (34%), an opportunity for the UK to be a world leader in this technology (32%), and the ability to re-use existing infrastructure (29%).

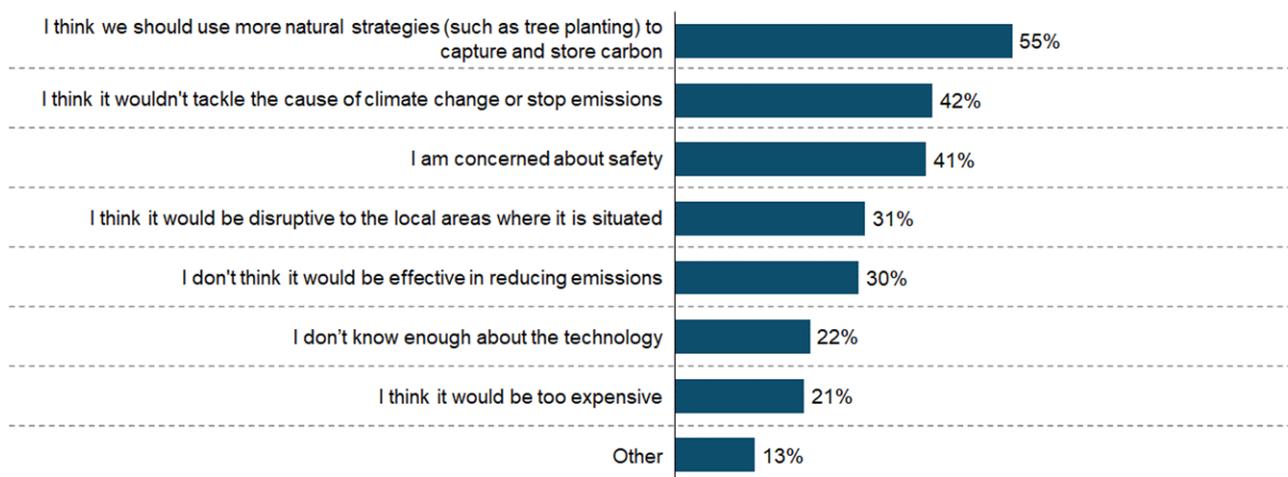
Figure 9.3: Reasons for supporting the use of carbon capture and storage (based on those who support this), Spring 2022



WHYSUPPCCS. You said that you support the use of carbon capture and storage in the UK. Why is this?
 Base: All wave respondents who support carbon capture & storage – Spring 2022 (1,992)

Reasons given for opposing carbon capture and storage included a preference for more natural strategies such as tree planting (55%), a feeling that it doesn't tackle the cause of climate change or stop emissions (42%), concerns about safety (41%), worries about disruption to the local area (31%) and a belief that it would be ineffective in cutting emissions (30%) (Figure 9.4).

Figure 9.4: Reasons for opposing the use of carbon capture and storage (based on those who oppose this), Spring 2022



WHYOPPCCS. You said that you oppose the use of carbon capture and storage in the UK. Why is this?

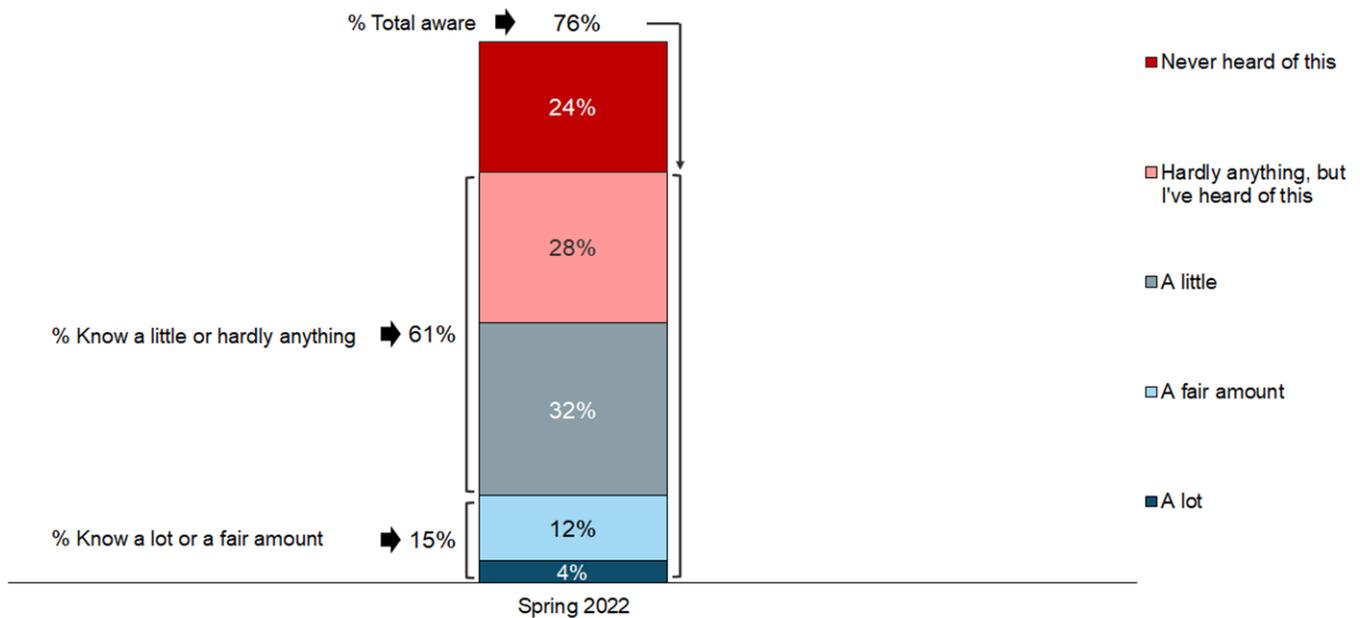
Base: All wave respondents who oppose carbon capture & storage – Spring 2022 (357)

Awareness of hydrogen

People were introduced to the concept of hydrogen by being provided with the following definition: *And now a question about hydrogen, which is used as a fuel in some industrial processes. Hydrogen is not naturally available. This means it needs to be produced from other sources to be used as a fuel. When produced in an environmentally friendly way, hydrogen can help reduce the carbon emissions in industries, power generation, lorries and shipping.*

Overall awareness of the use of hydrogen as fuel was relatively high at 76% in Spring 2022 although, as for other technologies, the level of knowledge was fairly low (Figure 10.1). Just 15% said they knew a fair amount (12%) or a lot (4%), 61% knew a little or hardly anything, while 24% had never heard of it.

Figure 10.1: Awareness of hydrogen used as fuel (based on all people), Spring 2022



HYDKNOW. And now a question about hydrogen, which is used as a fuel in some industrial processes. Hydrogen is not naturally available. This means it needs to be produced from other sources to be used as a fuel. When produced in an environmentally friendly way, hydrogen can help reduce the carbon emissions in industries, power generation, lorries and shipping. Before today, how much would you say you knew about hydrogen already being used as a fuel in some industrial processes in the UK?

Base: All wave respondents – Spring 2022 (4,372)

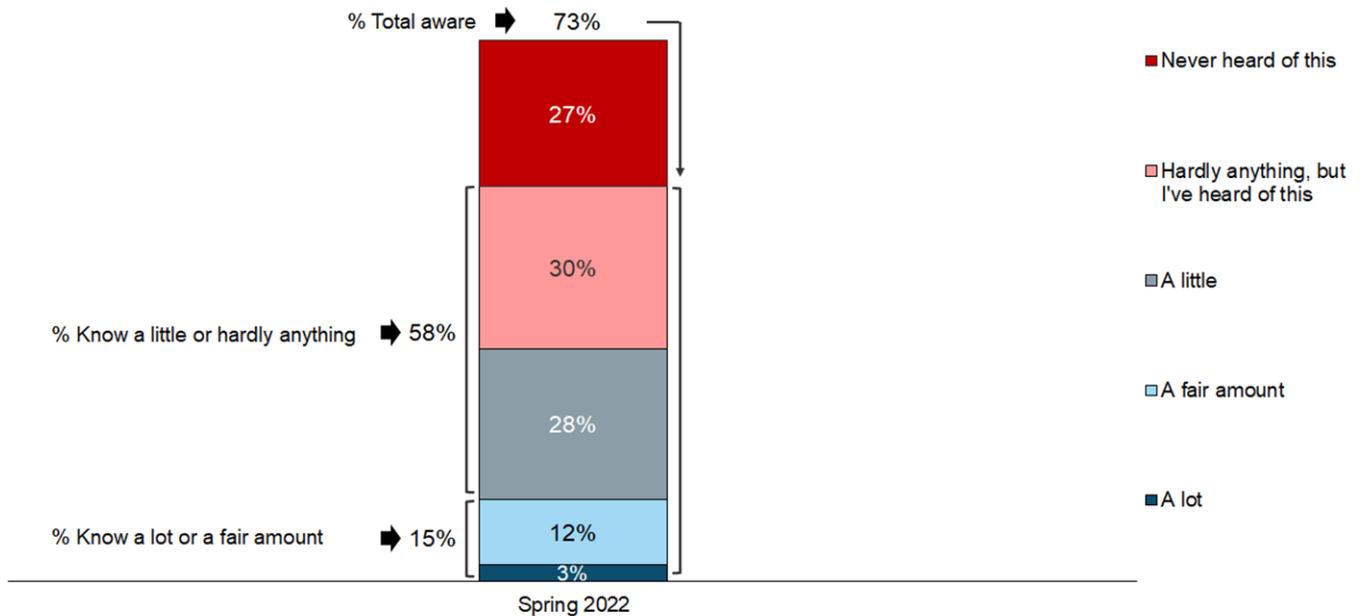
In common with awareness and knowledge of other energy sources, men were much more likely to be aware of hydrogen as a fuel (87% compared with 66% of women) and to say they knew at least a fair amount about it (25% compared with 6% of women). People aged 16 to 24 were also more likely to say they knew at least a fair amount about hydrogen as a fuel (21% compared with 15% of people aged 25 or over).

Awareness of hydrogen as a fuel was also higher for those educated to degree level (86% compared with 76% of those with other qualifications and 57% of people with no qualifications) and there was a similar pattern in reported levels of knowledge (23% of degree-educated

people saying they knew at least a fair amount, compared with 13% of those with other qualifications and 8% of people with no qualifications).

In Spring 2022, knowledge about the potential future uses of hydrogen to reduce emissions in some industries was at a similar level to broader knowledge about hydrogen as fuel (Figure 10.2). Almost three in four had heard of it (73%) but few said they knew a lot (3%) or a fair amount (12%). Most said they knew just a little (28%) or hardly anything (30%).

Figure 10.2: Awareness of potential future uses of hydrogen (based on all people), Spring 2022



HYDREDKNOW. Before today, how much would you say you knew about the potential future uses of hydrogen to reduce emissions in some industries?

Base: All wave respondents – Spring 2022 (4,372)

Patterns of difference in awareness of the potential uses of hydrogen to reduce emissions in some industries by sex, age and education were similar to those observed for more general awareness of hydrogen as a fuel.



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