

NOVEMBER 2023

IEEE POWER & ENERGY SOCIETY

SURVEY ON THE ROLE OF ENGINEERS IN ADDRESSING CLIMATE CHANGE

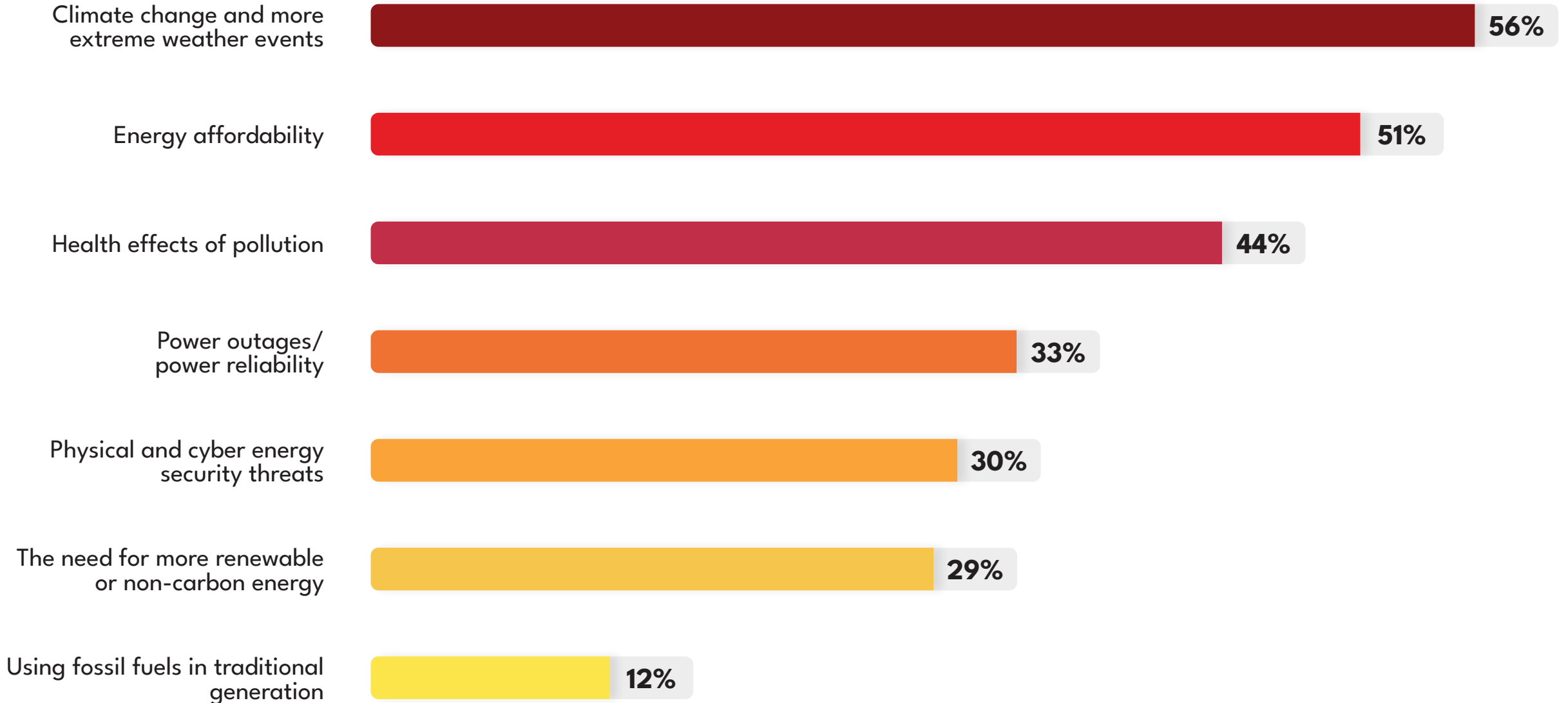
PARK STREET STRATEGIES

- **Climate change and extreme weather** are top concerns when it comes to the environment. These concerns, however, become secondary when compared to potential economic threats (e.g., economic recession) or political instability.
- A majority agrees that an **outdated electric grid** presents the biggest energy-related challenge, followed by government mandates and net-zero goals being misaligned with the current energy infrastructure realities.
- Most respondents worry that it may be difficult to reverse climate change on a global scale but believe that **technology is the key to addressing it**.
- A plurality of respondents has little understanding of the role that engineers play in addressing climate change.
- Even so, **respondents trust engineers the most** to find solutions to achieving a clean energy future, more so than researchers, environmental advocacy groups, utility companies, or government agencies.
- A plurality of respondents believe that engineers have the knowledge and skill set to research and develop new forms of renewables.

- Messages that provide concrete examples of what engineers do to address climate change (e.g., constructing green buildings, monitoring environmental conditions, reducing electronic waste, etc.) resonate the most.
- Engineers are most often described with positive terms such as **“innovative,” “creative,”** and **“smart.”**
- When it comes to describing our energy future, the word **“sustainable”** resonates the most, followed by **“cleaner.”** Words like “smart,” “modernized,” and “engineered” resonate less.
- Most respondents view engineers positively and acknowledge that they play a key role in addressing climate change, but **do not understand what that role is.** Educating the public about their role would be beneficial.
- A large majority (82%) expressed an interest in learning more about what engineers are doing, or planning to do, to address climate change.

ISSUES & CONCERNS

Which of the following environment- and energy-related issues are of the greatest concern to you? (Select your top 3 choices)

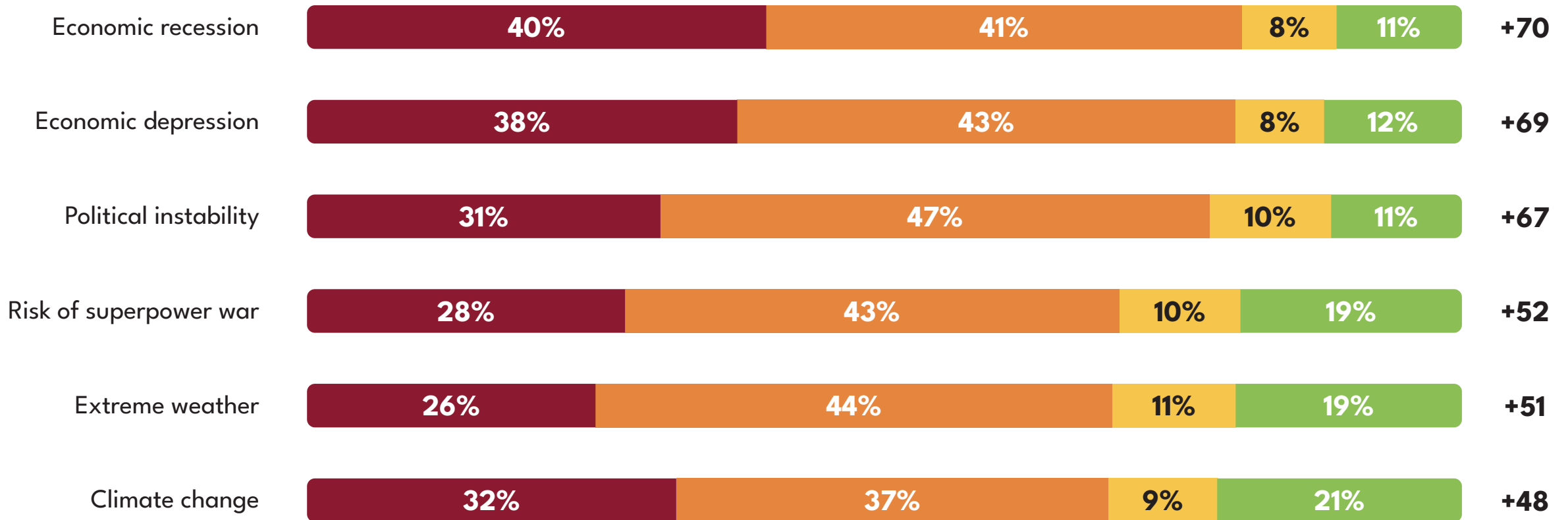


ISSUES & CONCERNS

On a scale of 1 to 10, with 1 being “not concerned at all” and 10 being “extremely concerned,” how concerned are you, personally, about the threat posed by each of the following issues to the nation and the world?

■ Extremely concerned (9-10)
 ■ Concerned (6-8)
 ■ Neutral (5)
 ■ Not concerned (1-4)

Net “Concern” Score:



*Net Concern = (Extremely concerned + Concerned) - Not concerned

Key Insight: In the face of economic and/or political instability, weather- and climate-related issues become less of a concern.

ISSUES & CONCERNS

On a scale of 1 to 10, with 1 being “no threat at all” and 10 being “extreme threat,” how would you score your reaction to the following energy-related challenges?

■ Extreme threat (9-10) ■ Threat (6-8) ■ Neutral (5) ■ Low threat (1-4)

Net “Threat” Score:

Not modernizing the electric grid quickly enough to deal with climate change



State/federal mandates & net zero goals are not aligned with current energy infrastructure requirements



Eliminating natural gas too fast



Not transitioning fast enough to renewables



*Net Threat = (Extreme threat + Threat) - Low threat

Key Insight: A large majority of respondents believe that an older electric grid and government hurdles present the greatest challenges to addressing climate change.

Looking ahead to the future, how optimistic or pessimistic are you about the ability to significantly reverse climate change on a global level?

Very optimistic



Somewhat optimistic



Somewhat pessimistic



Very pessimistic



Looking ahead to the future, how optimistic or pessimistic are you about the ability to use technology to address climate change on a global level?

Very optimistic



Somewhat optimistic



Somewhat pessimistic



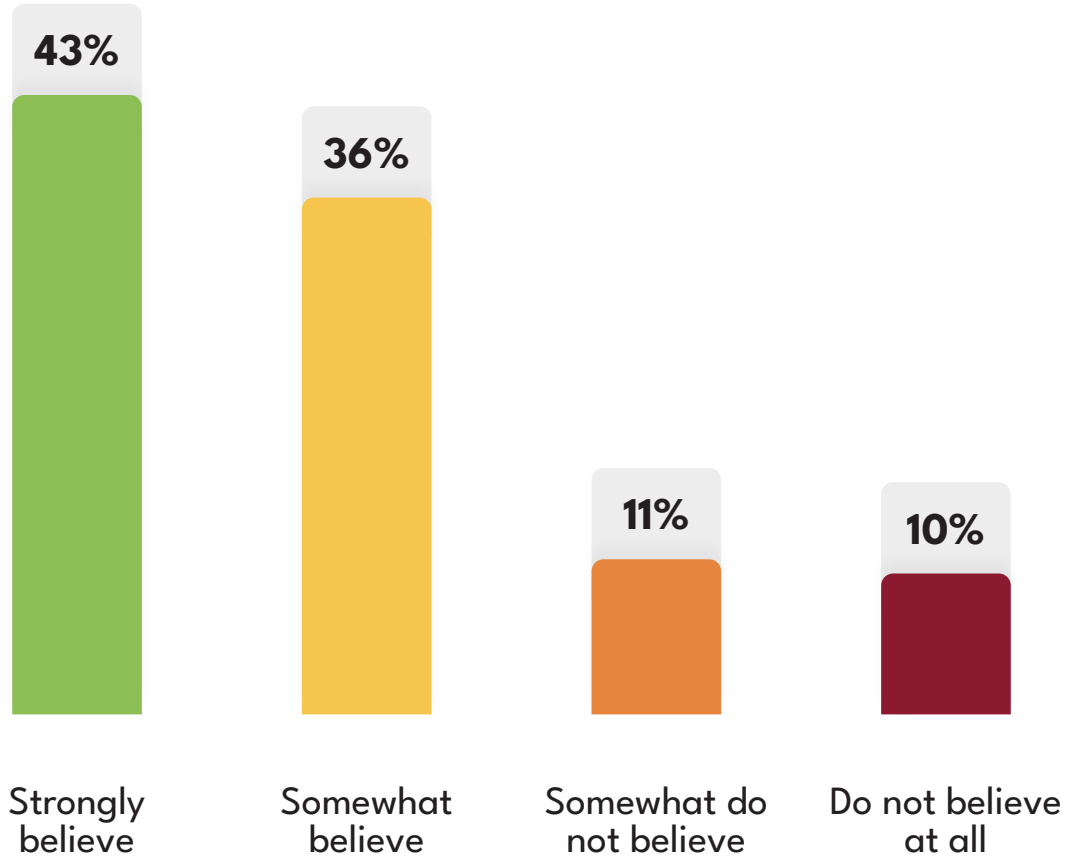
Very pessimistic



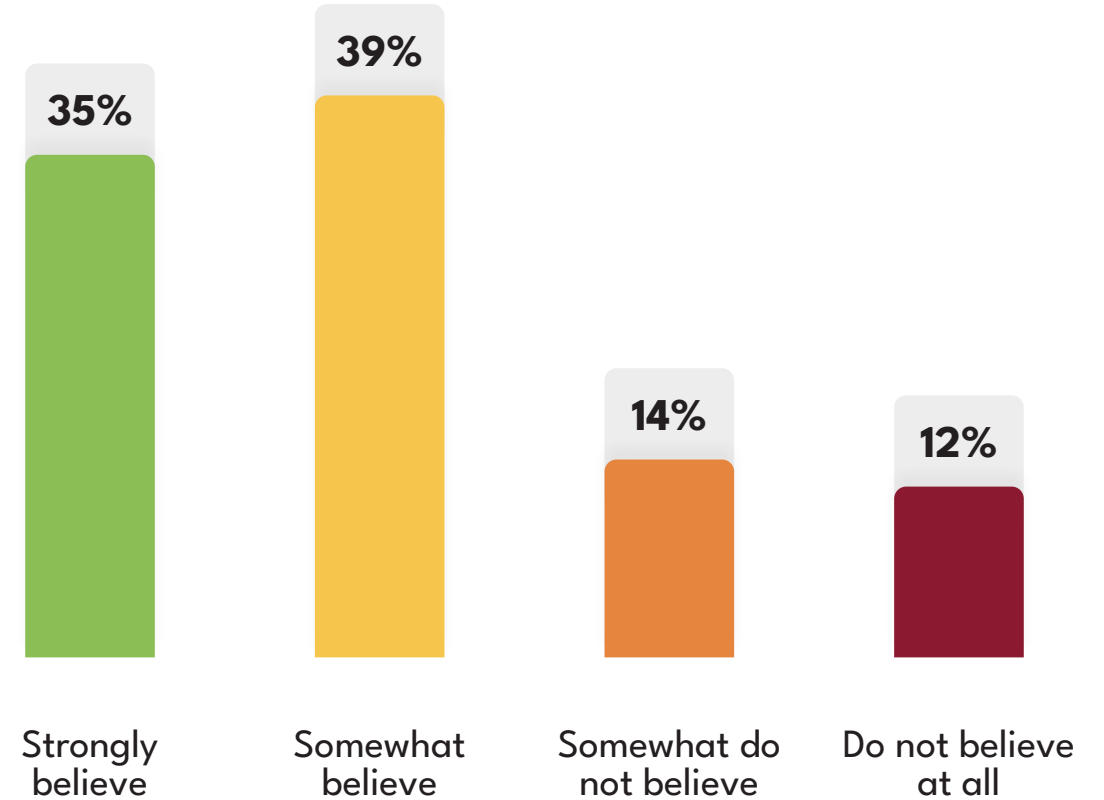
Key Insight: Although respondents worry about our ability to significantly reverse climate change, a majority are optimistic that technology is the key to addressing it.

ISSUES & CONCERNS

Do you believe that failing to address climate change poses a threat to you, your children, and the next generation?



Do you believe that failing to address climate change represents a clear and present danger to America's economic safety and security?



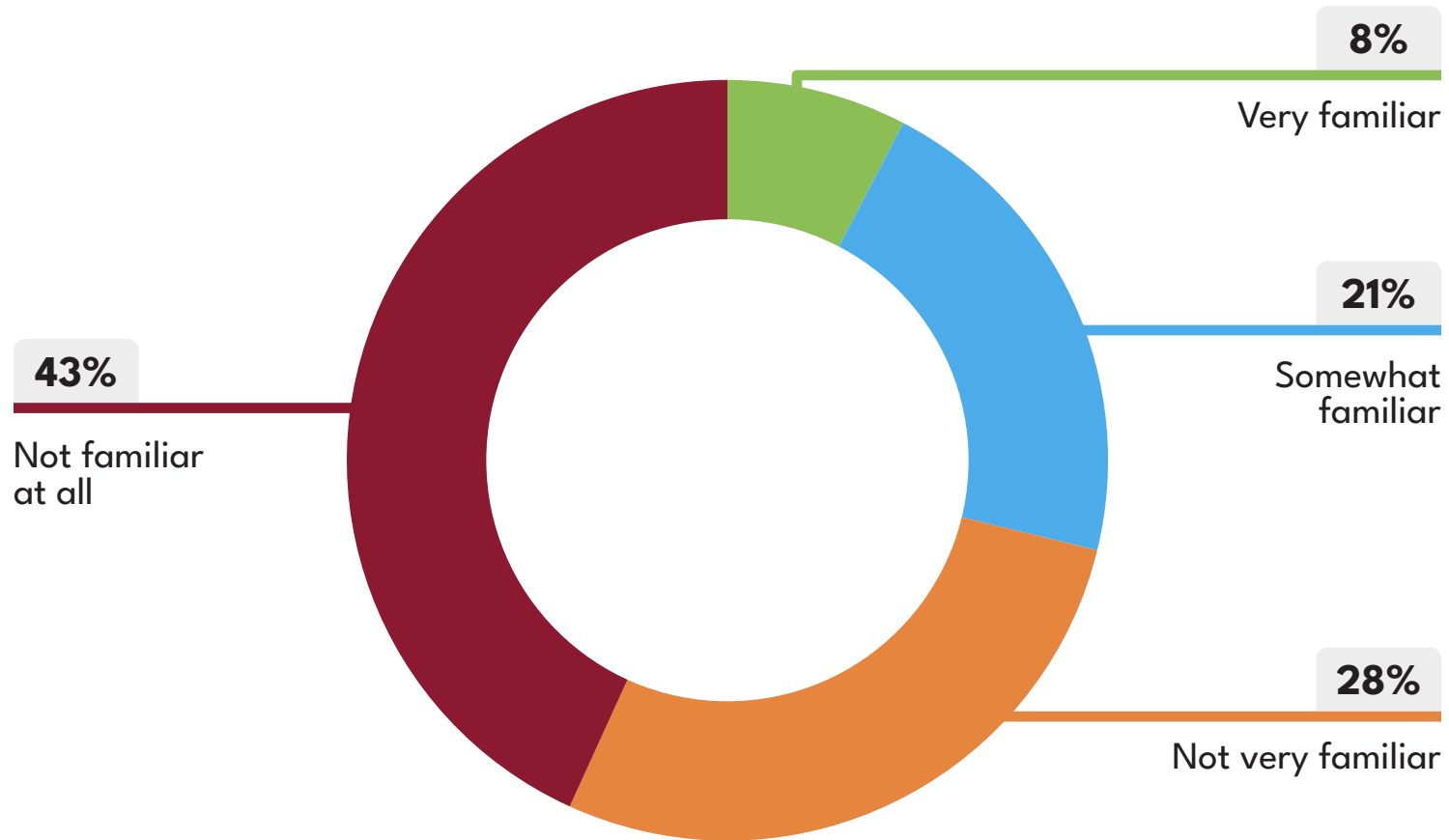
Key Insight: A large majority believes that climate change poses a danger to society and must be addressed.

**IEEE & ELECTRICAL/
POWER ENGINEERS**

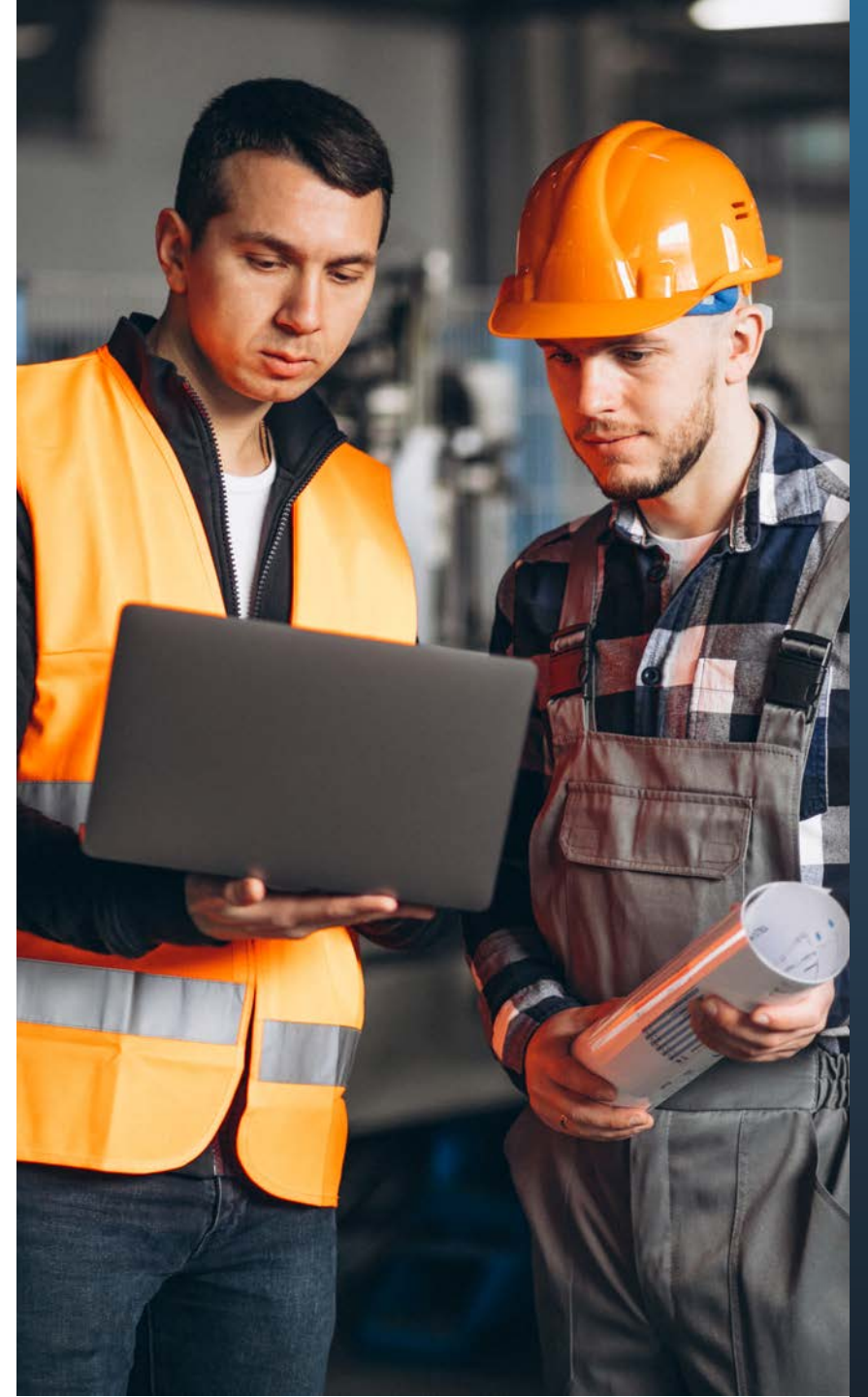
IEEE & ELECTRICAL/POWER ENGINEERS

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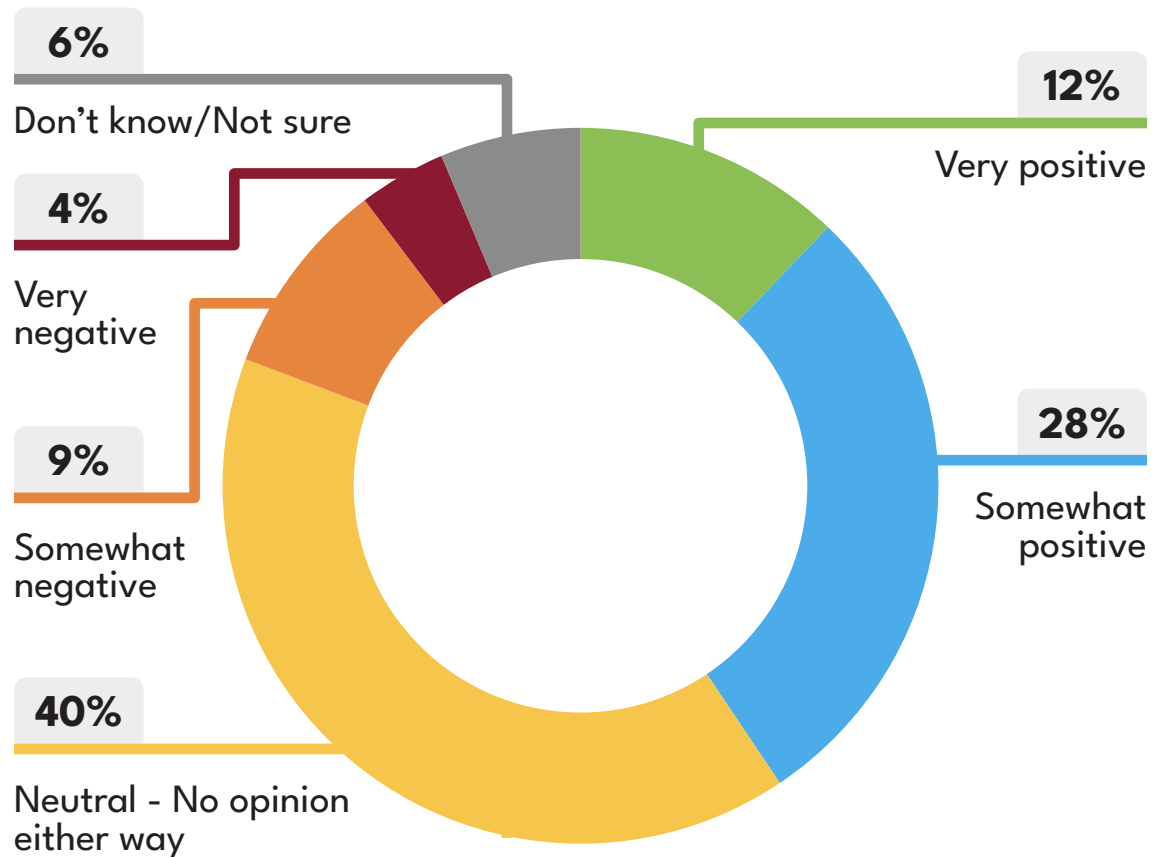
How familiar are you with the Institute of Electrical and Electronic Engineers (IEEE)?



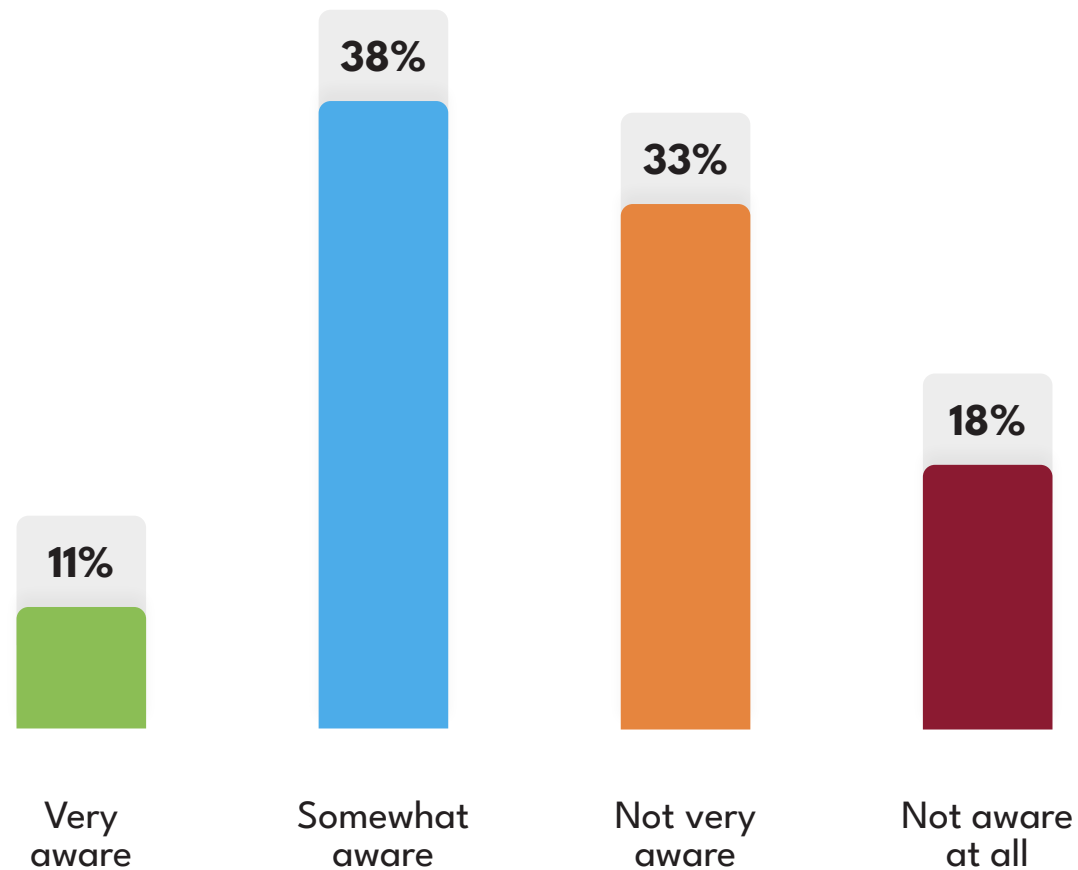
Key Insight: Nearly 3 in 4 respondents (71%) are unfamiliar with the IEEE.



In general, what is your opinion of electrical and/or power engineers and the role they play in addressing climate change?

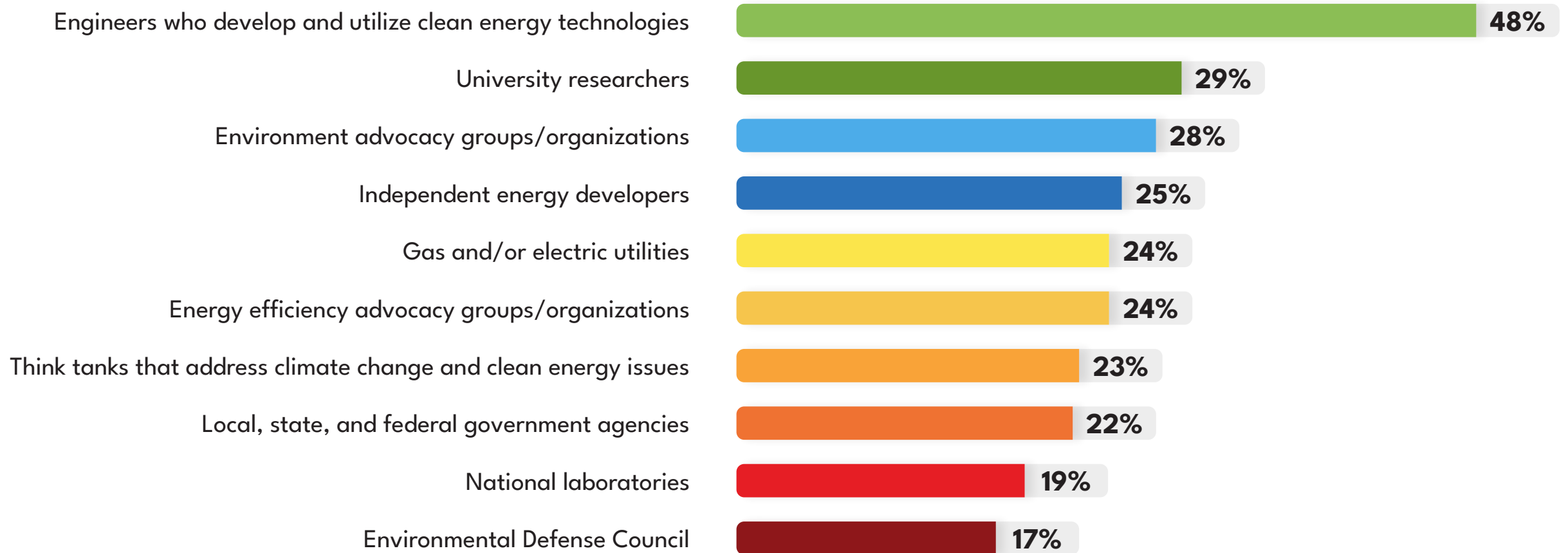


How aware are you, personally, of the role that engineers play in addressing climate change?



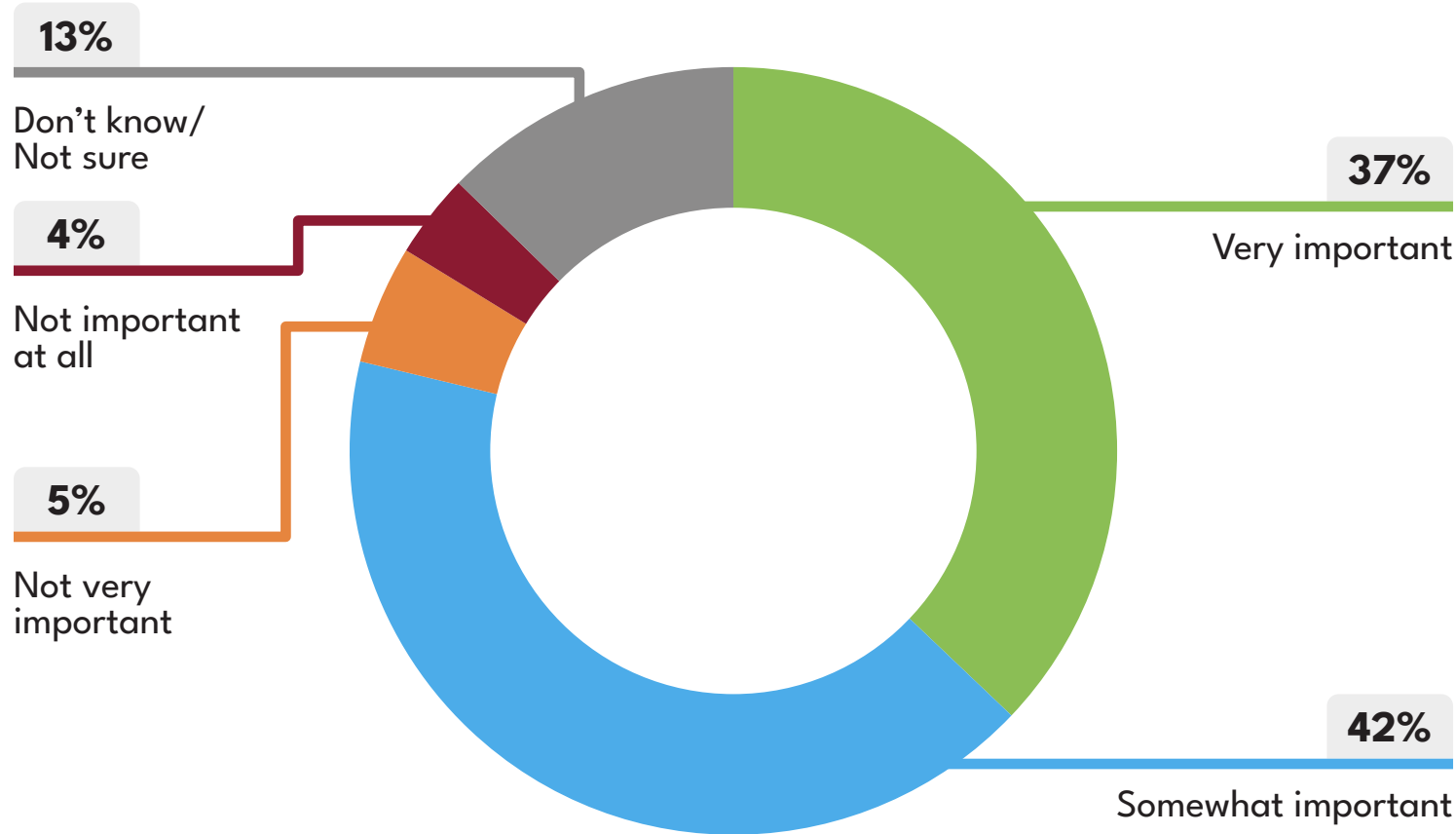
Key Insight: The large percentage of mid-range responses (i.e., “Neutral,” “Somewhat aware,” and “Not very aware”) suggests that a plurality of respondents know little about the role engineers play in addressing climate change.

Which of the following groups, companies, and organizations do you trust the most when it comes to determining and implementing solutions on how we can best fight climate change and achieve a clean energy future? (Select your top 3 choices)

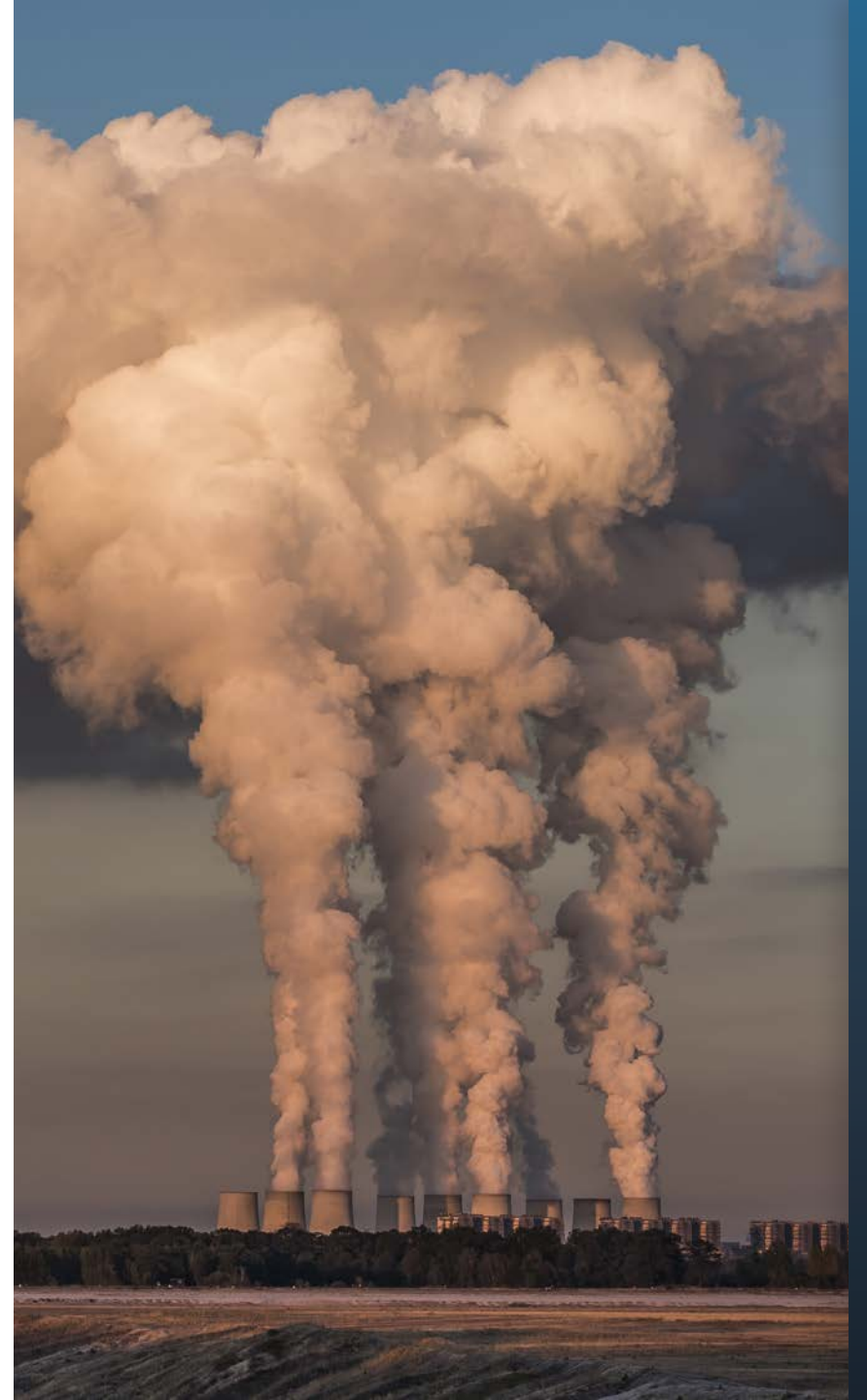


Key Insight: Despite knowing little about the actual role engineers play in addressing climate change, respondents do believe that engineers can be trusted the most to find solutions to achieving a clean energy future.

In your opinion, how important is the role that engineers play in addressing climate change?



Key Insight: Again, respondents may be unsure of what engineers do to address climate change, but most believe their role is an important one.



In your opinion, what should engineers focus on most when it comes to addressing climate change? (Select your top 2 choices)

Researching and developing new forms of renewables, energy storage systems, and clean technology



Reducing carbon emissions by constructing clean technology such as wind turbines, solar panels, and hydroelectric power plants



Modernizing and updating aging electric grids



Being more energy efficient to reduce overall demand



Developing “smart cities,” where the needs of residents are met, while contributing to major improvements in local and global environments



Reducing the incidence of wildfires



Key Insight: A plurality of respondents believe that engineers have the knowledge and skill set necessary to find new, innovative ways to address climate change.

MESSAGES

On a scale of 1 to 10, with 1 being “Extremely negative” and 10 being “Extremely positive,” how would you rate the following statement?

“Engineers play a crucial role in environmental protection by creating and developing sustainable energy sources, encouraging energy efficiency, constructing green buildings, monitoring environmental conditions, and reducing electronic waste.”

Extremely Positive (9-10)



Positive (6-8)



Neutral (5)



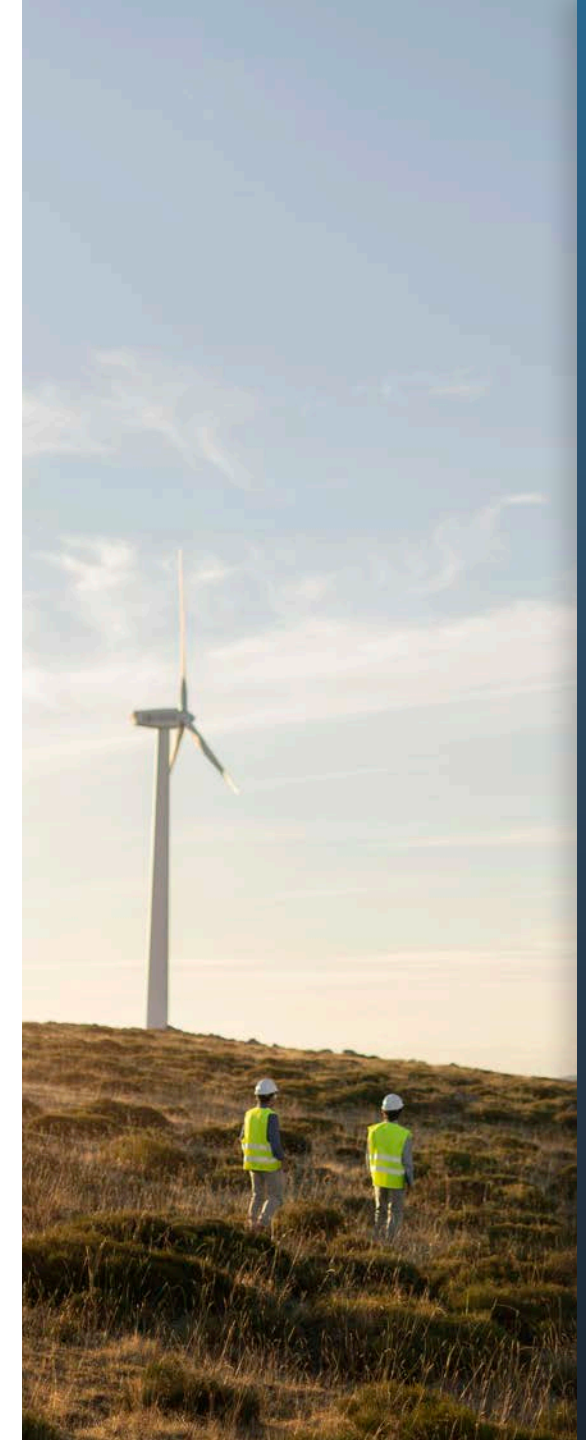
Negative (1-4)



Net “Positive” Score = +76

Net Positive = (Extremely positive + positive) - Negative

Key Insight: Although all of the messages regarding engineers scored highly, this particular message, which provided examples of what engineers do, scored the highest, with a net positive score of 76.



On a scale of 1 to 10, with 1 being “Extremely negative” and 10 being “Extremely positive,” how would you rate the following statement?

“Engineers are among the world’s best and brightest minds, whose creative ideas and innovative solutions are helping transform an electric system that will withstand climate change and build the smarter energy future that this and the next generation expect and deserve.”

Extremely Positive (9-10)



Positive (6-8)



Neutral (5)



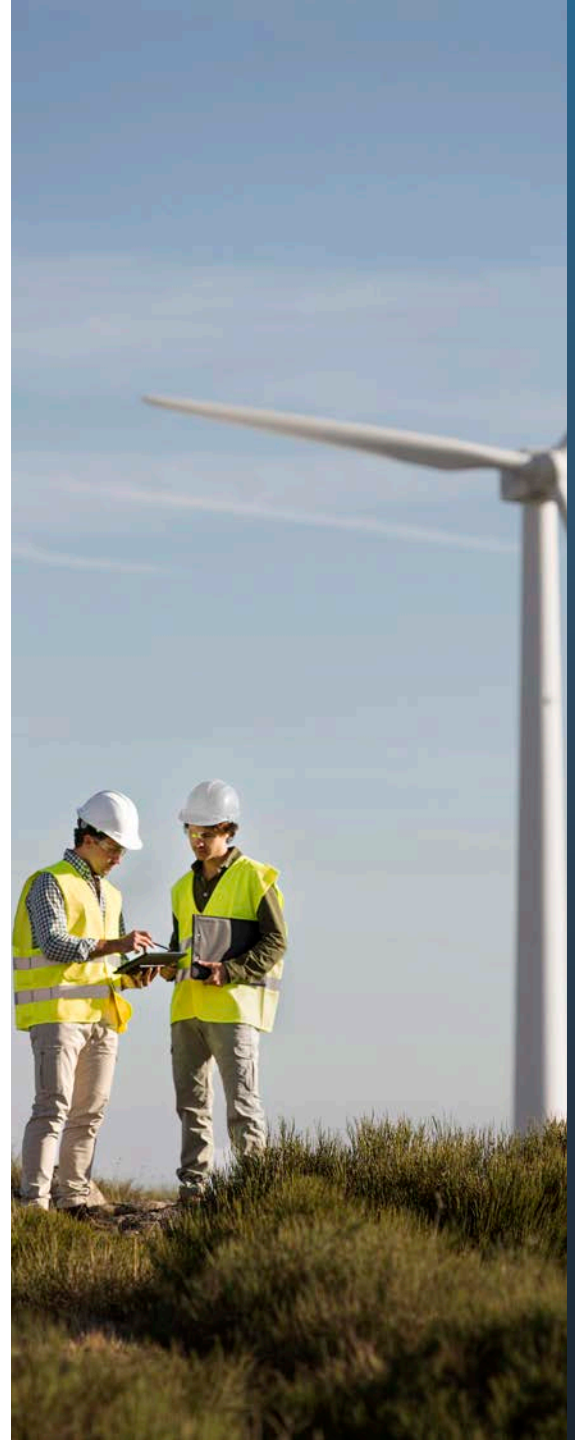
Negative (1-4)



Net “Positive” Score = +71

Net Positive = (Extremely positive + positive) - Negative

Key Insight: As demonstrated by the high Net Positive score (+71), respondents believe that engineers play a key role in building a smarter energy future.



On a scale of 1 to 10, with 1 being “Extremely negative” and 10 being “Extremely positive,” how would you rate the following statement?

“Engineers are leaders in the fight against climate change, developing smart and sustainable energy solutions that will help create a cleaner, more resilient, and more affordable energy future for this and the next generation.”

Extremely Positive (9-10)



Positive (6-8)



Neutral (5)



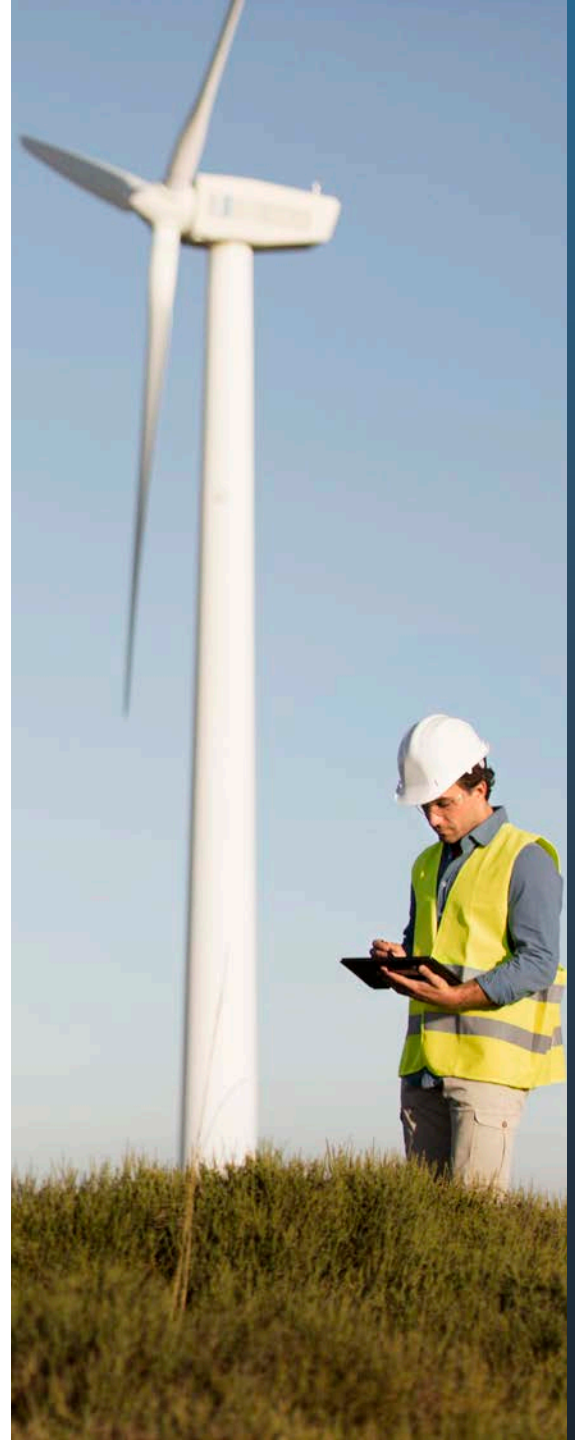
Negative (1-4)



Net “Positive” Score = +70

Net Positive = (Extremely positive + positive) - Negative

Key Insight: Engineers are not simply contributors to a better and cleaner energy future - respondents agree they are *leaders*.



When you think of engineers and the role they play in the world's energy future, what is a negative word that comes to mind?



Key Insight: Respondents often struggled to find a negative word to describe engineers, as noted by the high frequency of “Nothing” and “Don’t Know” responses.

Which of the following phrases do you have the most positive reaction to?

Sustainable energy future



Cleaner energy future



Innovative energy future



Smart energy future



Modernized energy future

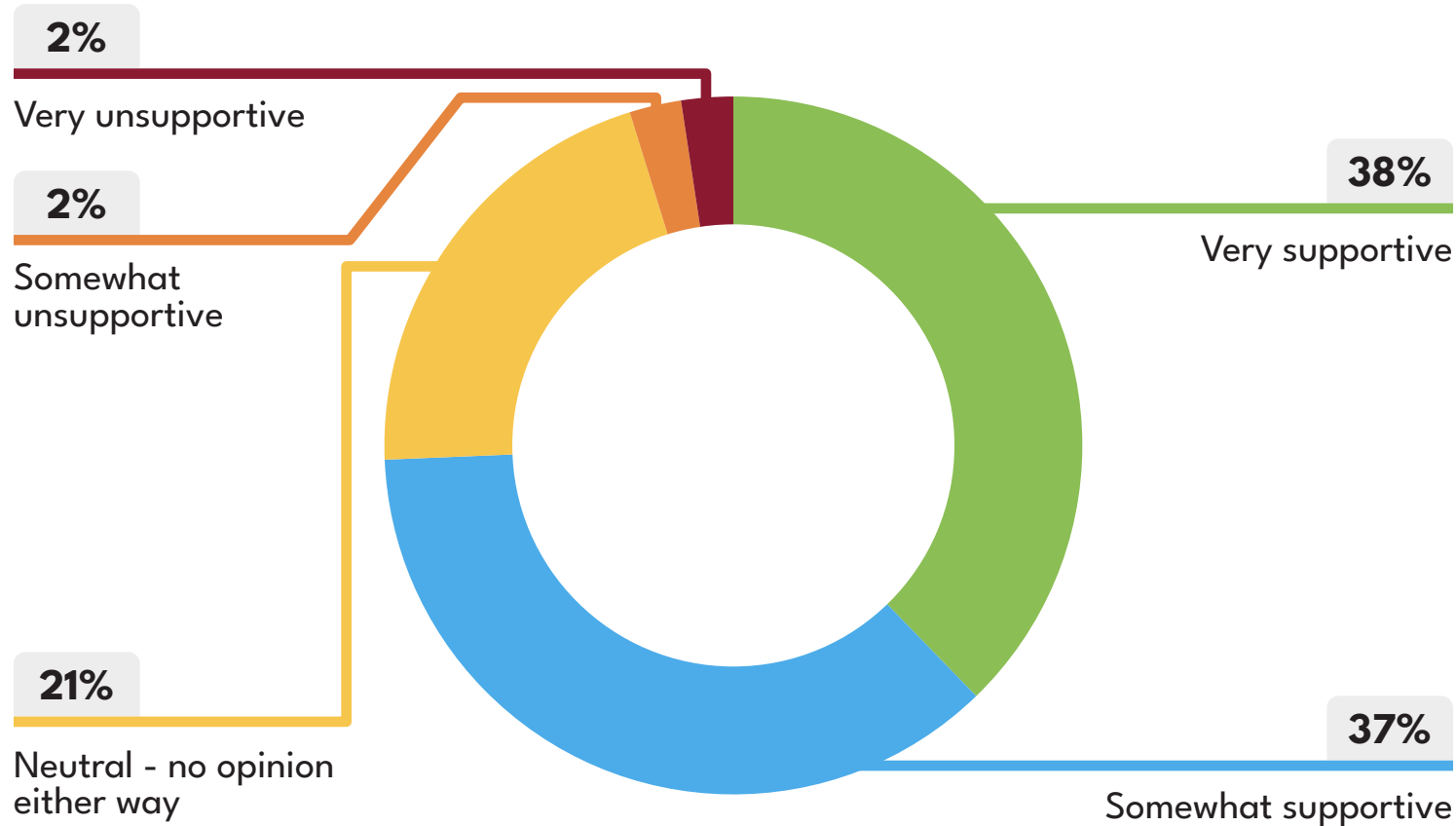


Engineered energy future

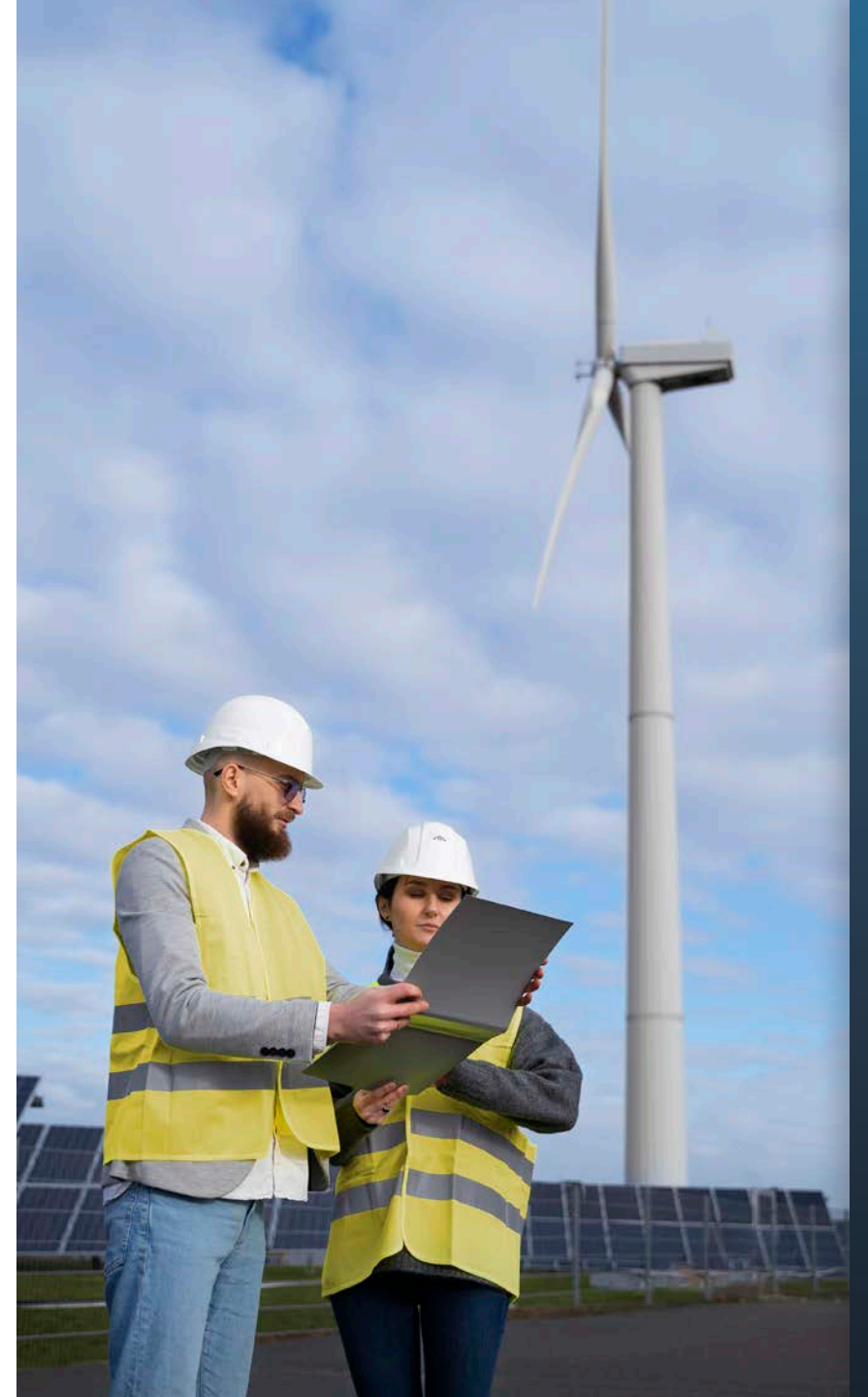


Key Insight: When it comes to describing our energy future, words like “sustainable” and “cleaner” resonate most with respondents.

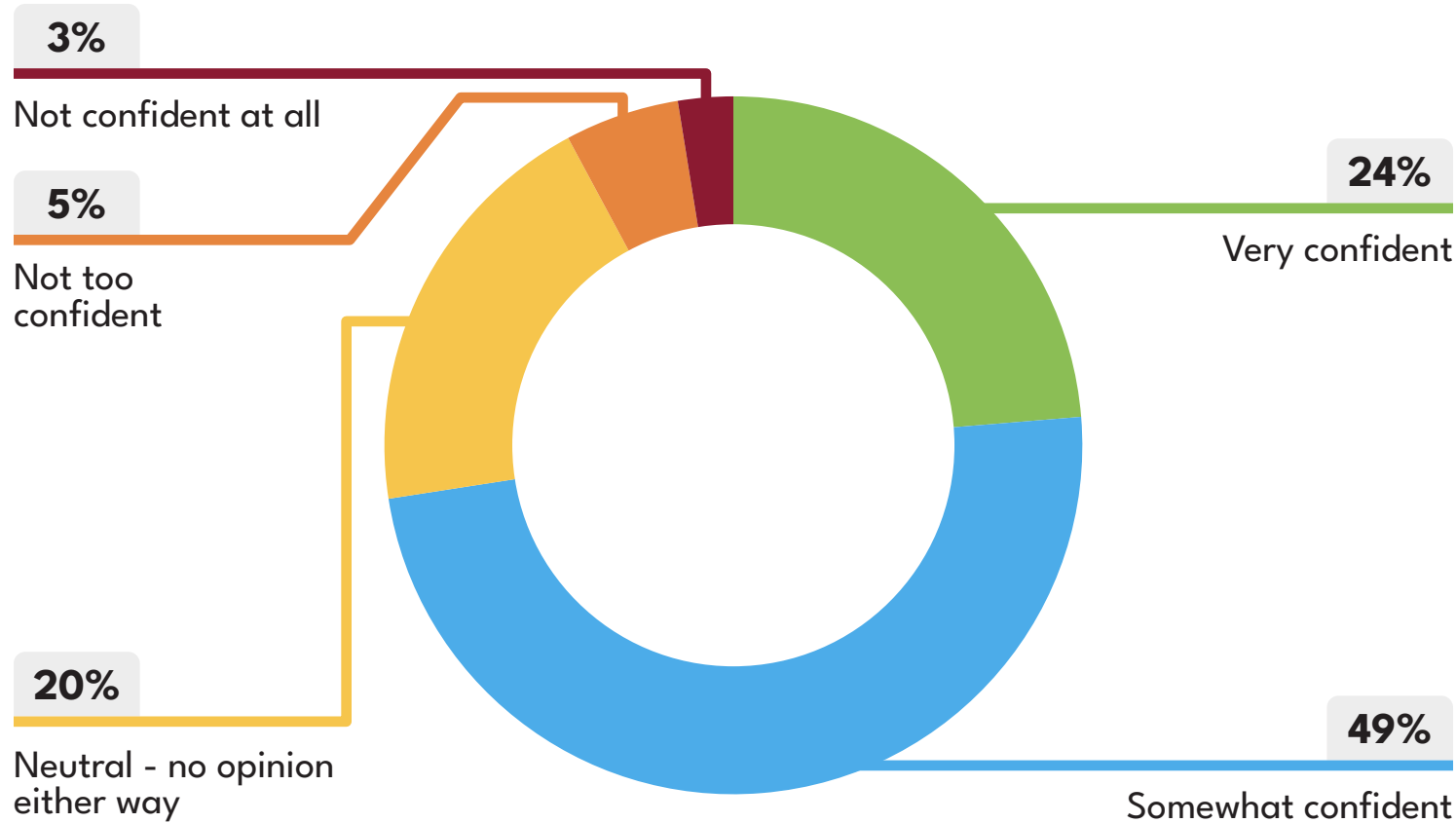
How supportive or unsupportive are you of engineers playing a far more public role in addressing climate change?



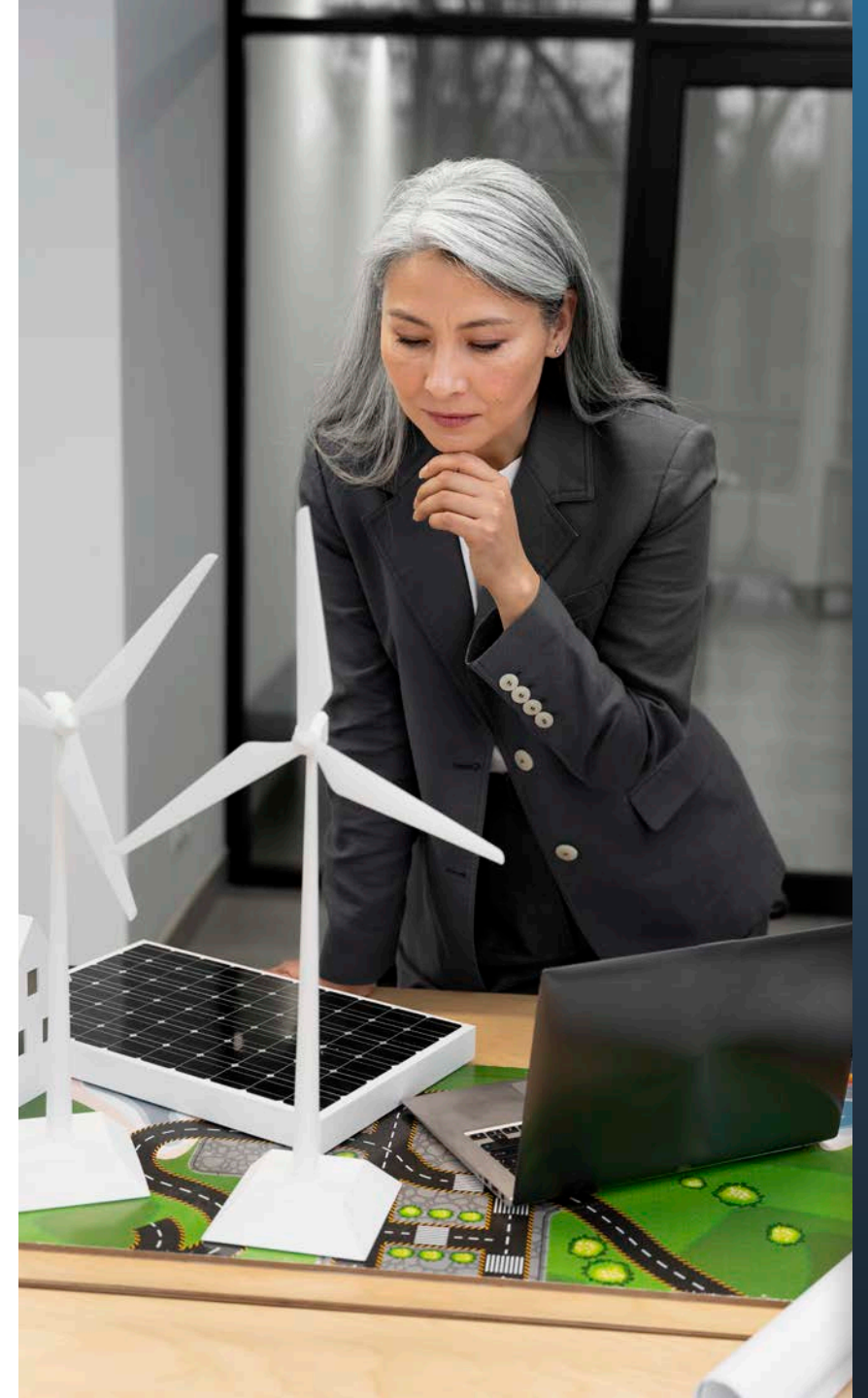
Key Insight: 58% gave a “Somewhat supportive” or “Neutral” response, suggesting that most people are unsure about the specific roles that engineers play in the fight against climate change. Educating the public in this area would be beneficial.



How confident are you that engineers can develop the solutions to help address climate change and help achieve a clean energy future?

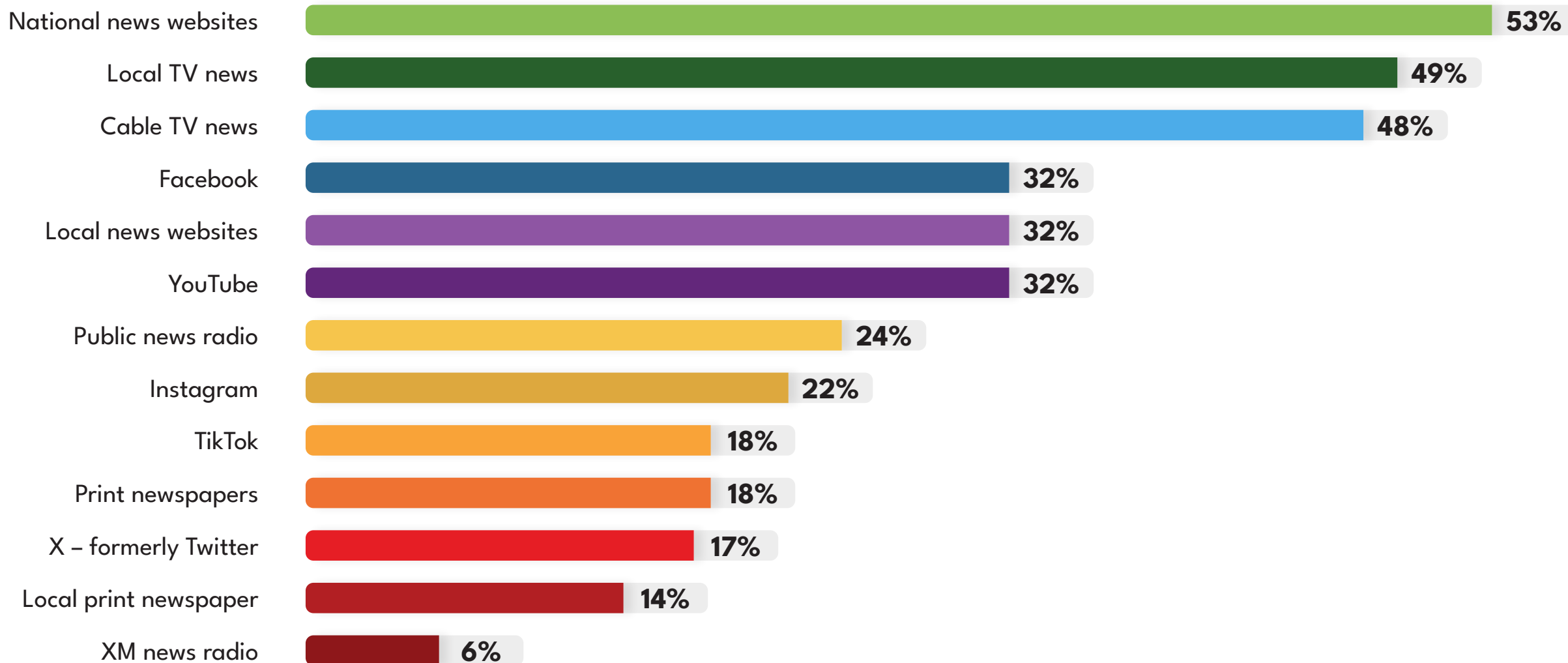


Key Insight: Again, the majority of mid-range responses (“Somewhat confident” or “Neutral”), suggests that although most people view engineers positively, there is uncertainty over their exact role in addressing climate change.



COMMUNICATIONS

Which of the following tools should the Institute of Electrical and Electronic Engineers (IEEE) utilize the most to keep you aware of the actions to address climate change? (Select your top 5 choices)



How interested are you in learning more about what engineers are doing, or planning to do, to address climate change and develop a cleaner energy future?

Very interested



Somewhat interested



Not very interested



Not interested at all



Key Insight: 82% of respondents expressed an interest in learning more about the role that engineers play in the fight against climate change.



Survey Conducted: November 15-21, 2023

Survey Type: Online

Sample Size: Nationwide, n=2000

Margin of Error: +/-2% at 95% Confidence Interval

Due to rounding, percentages in figures may not always sum to exactly 100

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