U.S. Public Perceptions of Large Energy Facilities, Community and Co-Design Processes

- TOPLINE REPORT -

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INTRODUCTION

Efforts to site large energy facilities in the U.S. have often failed because the potential host communities have rarely been able to meaningfully shape the facility design, which is typically predetermined by program goals and regulatory requirements. When consent is sought, community representatives have not been adequately engaged in discussions about how design variations can better align with their community's identity and aspirations, while still meeting regulatory standards. This report offers a brief examination of how lay audiences in the U.S. perceive large scale energy facilities, community, and co-design. The following data are from a representative survey of U.S. adults conducted from November – December 2023.

SUMMARY OF FINDINGS

1. Community Identity, Values, and Participation in Local Governance

U.S. adults are more likely to define their community under city contexts and identify as city people.

- When asked to choose what **defines their community**, the top 3 choices for the participants were **city/town** (38.6%), local neighborhood (26.6%) **and friends and family** (18.5%).
- **More than a third** (35.5%) of participants **identified as a city person**, with suburban person (30.1%), country or rural (16.8%), and small-town person (16.0%) to follow.

Mixed and sometimes conflicting trends arise when participants were asked to think about what they like about their community, community values, and community improvements.

- When asked about things they like most about living in their community, participants were most likely to say they like the **natural surroundings** of their community and least likely to say they like the **employment opportunity** of their community.
- When asked about things they would like to see change or improve about the community where they live, participants were most likely to say that they would want to improve their community's **safety and security** and least likely to say they wanted to improve **strong community bonds**.
- When asked to select values they believe many people in their community share, participants most frequently chose **respect** as a shared value in their community and least frequently chose **environmental stewardship** as a shared value.

Local participation in government is low across all modes of participation.

- When asked how often they talk about local government **with people they know**, like friends and family, a plurality (35.2%) said they occasionally participate, with only 14.8% saying they frequently participate.
- When asked how often they talk about local government **with people they don't know**, such as on Facebook, a plurality (31.2%) said they never participate with only 11.10% saying they frequently participate

- When asked how often they **participate in in-person** local government activities like city council meetings, only 8.6% of participants said they frequently participate. 43.6% said they never participate in in-person local government activities.
- When asked how often they **participate in online** local government activities like signing petitions and/or writing messages in groups that discuss local issues, only 10.6% of participants said they frequently participate. 30% said they never participate in online local government activities.

Age, income, party affiliation, and race all uniquely affected how participants defined community and how likely they were to identify as city people.

- As age increases, the number of participants that define their community shifts from mostly defining based on city/town to mostly defining based on local neighborhood.
- Participants under 50 were much more likely to identify as city people than those older than 50.
- Participants with higher income were also more likely to identify as city people.
- Democrats are most likely to define their community based on city/town and identify as city people.
- Black Americans are the only race where a majority (50.8%) of participants define their community based on city/town) and a majority identified as city people (55.5%).

2. Public Preferences for Energy Facilities and Co-Design Considerations

Health and safety considerations are the dominant concern for large-scale energy facilities.

- Participants were asked to select the top three factors that would be most important when to their communities when considering a facility.
    - When considering ***location and construction***, participants care most about public health and safety, and care least about visual aesthetics of the large-scale facility.
    - When considering the ***physical design of the facility***, participants care most about well-planned emergency response protocols, and care least about aesthetically pleasing features that fit within the community.

There are clear trends in levels of trust when it comes to information about large energy facilities.

- Participants were asked to assess **the level of trust** in information about an energy facility that they may receive from different organizations.
    - A majority of the participants indicated that they would ***trust information*** if it were from the Environmental Protection Agency (EPA) (55.2% trust), University scientists (52.7% trust), or Department of Energy (DOE) (51.1% trust).
    - ***Distrust in information*** was highest for private energy developers (30.5% distrust), utility companies (26.5% distrust), and state government agencies (25.8% distrust).

Participants identified similar benefits and challenges for co-design of all energy facilities.

- When asked to choose from a list of benefits that could be achieved by co-designing the facility and program, participants were most likely to believe that **safety** would be achieved as a benefit for all facility types.
- When asked to choose from a list of challenges that could arise during the co-design process. participants believed that **navigating conflicting interests and priorities** would be a challenge for all facility types.

Perceptions of risks and benefits vary based on energy facility type

- Participants were **more likely to state that the benefits outweighed the risks** when asked about **carbon capture facilities** (36.4%) and a **large-scale energy facility** (45.8%).
- When asked about a **nuclear waste facility**, participants were **more likely to rank the facility as the risks outweighing the benefits** (49.2%).

Overall, younger, more highly educated, and higher income participants support energy facilities.

- Across all three energy facilities, being younger, having more formal education, and having a higher income led to less perceived risk of the facility.

3. Public Perceptions of Energy Sources

U.S. adults have concerns regarding energy availability and affordability.

- A majority (60.1%) of U.S. adults are moderately to extremely concerned about the **affordability** of energy in the next 20 years, and 47.2% are moderately to extremely concerned about the **availability** of energy in the next 20 years.

Beliefs about which energy source should receive more emphasis vary.

- Regarding different energy sources, a majority believe that **more emphasis** needs to be placed **on solar** (66.3%), **wind** (61.4%), **and hydropower** (61.0%).
- They also believe that **coal** (36.8%) and **oil** (30.4%) need to receive [the] **least emphasis**.
- Nuclear power received the most mixed results with participants splitting a lot more evenly between wanting more emphasis (44.9%) and less emphasis (24.0%) compared to other energy sources.

Energy is a highly partisan issue.

- Democrats and Independents are more likely to be concerned about the availability of energy in the next 20 years than Republicans, but there is no significant party divide when it comes to concern for the affordability of energy.
- **Solar Energy**: Democrats were more likely to state that U.S should put more emphasis on producing domestic energy from solar energy compared to Republicans (45.7% vs. 19.0%). Independents and Others fall between these two extremes.
- **Hydro Energy**: Similar to solar energy, Democrats tend to favor more emphasis on hydro energy more (39.7%) than Republicans (34.8%). Independents and Others have relatively balanced views.

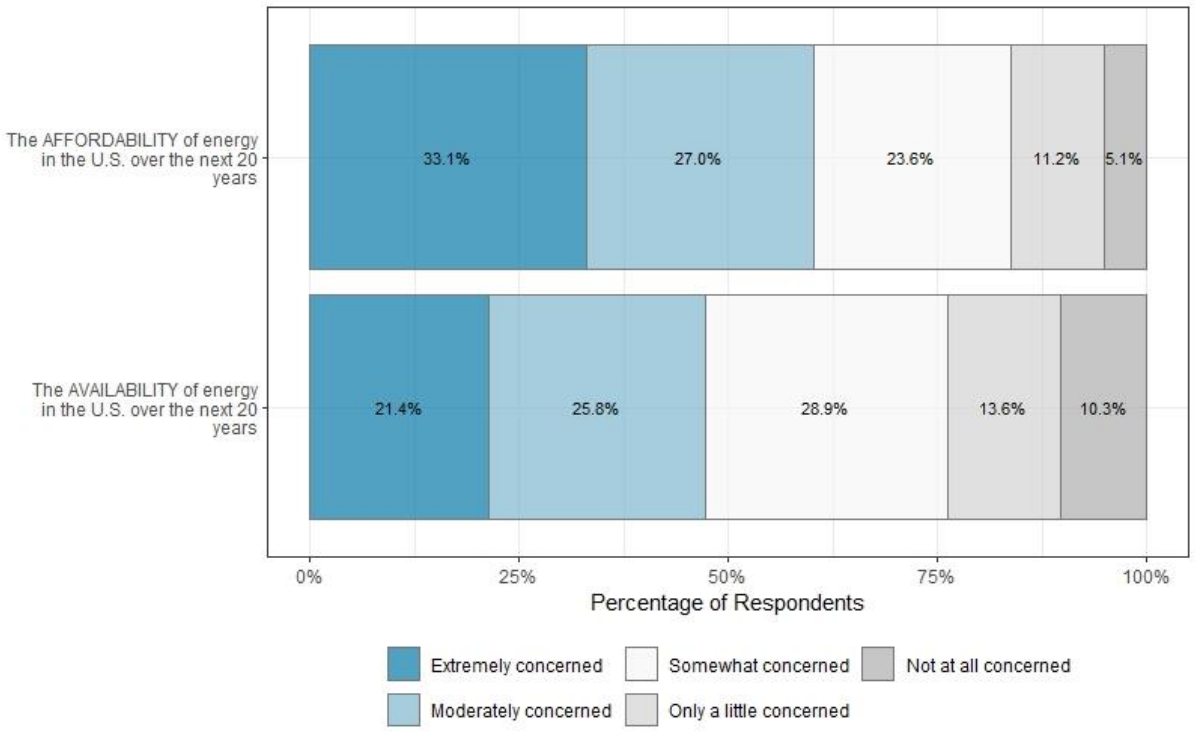
- **Wind Energy**: Democrats are also more likely to support more emphasis for wind energy (37.2%), followed by Independents (34.2%). Republicans show a lower inclination towards wind energy (28.2%).
- **Nuclear Energy**: There's less pronounced difference in opinion on nuclear energy. Democrats and Republicans show relatively similar distributions across all categories, with a slight lean towards "About the same" emphasis on producing domestic energy from nuclear energy for Democrats and "Less emphasis" for Republicans.
- **Fossil Fuels (Coal, Gas, Oil):** Republicans generally show favor placing more emphasis on producing energy from fossil fuels, particularly coal and gas, compared to Democrats. Independents and Others have more varied opinions but tend to lean towards less emphasis on fossil fuels.
- Overall, the data indicates a clear partisan divide on renewable energy sources, with Democrats generally favoring solar, wind, and hydro power. Republicans tend to lean towards traditional energy sources, particularly fossil fuels. Independents and Others exhibit more mixed opinions, often falling between these two extremes.

ABOUT THE SURVEY

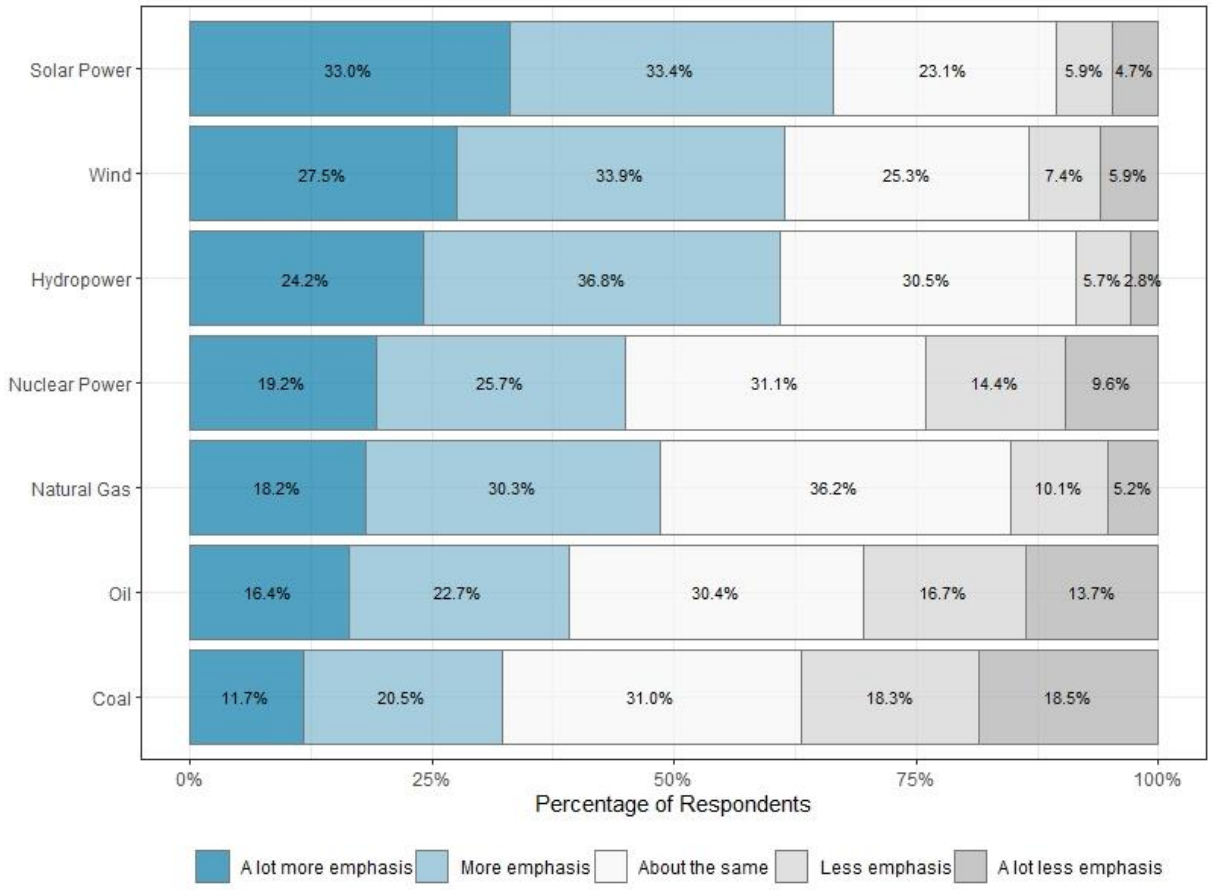
This survey is part of a broader research project funded by the Department of Energy's Consolidated Innovative Nuclear Research program (Grant Number: 89243224NNE000015). The project develops a collaborative co-design approach that directly involves potential host communities and project engineers in creating interim storage facilities for spent nuclear fuel, aiming to meet local needs and regulatory requirements to improve siting success. The Survey was designed and fielded by the Institute for Public Policy Research and Analysis (IPPRA) at the University of Oklahoma and fielded by Verasight, a research and marketing company from November 2023 to December 2023. Final sample for the survey consisted of 1,500 respondents (U.S. residents aged 18 and older living in the contiguous United States), with at least one respondent from each of the 48 contiguous U.S. states. The sample holds representativeness based on comparison to U.S. census on age, gender, race, and ethnicity.

TOPLINE

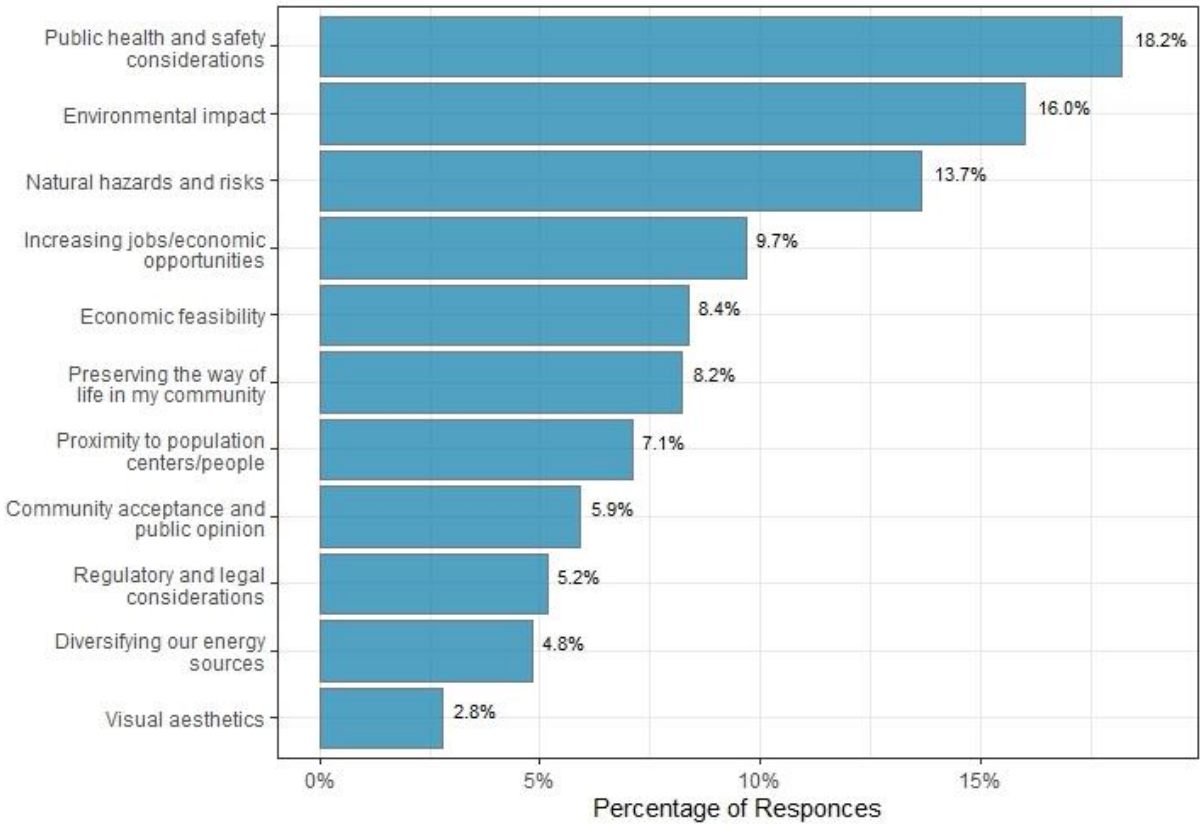
1. How concerned are you about…



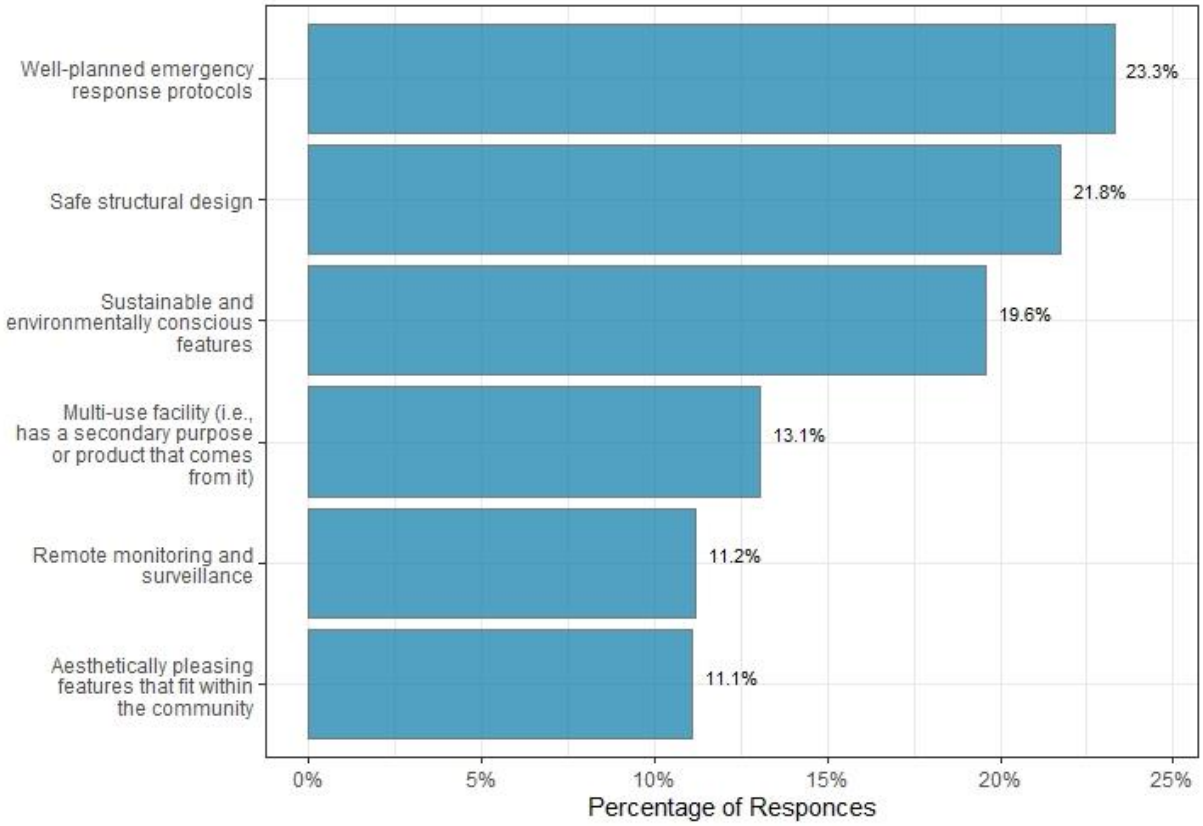
2. Do you think the US should put more emphasis, less emphasis or about the same emphasis as it does now on producing domestic energy from each of the following sources?



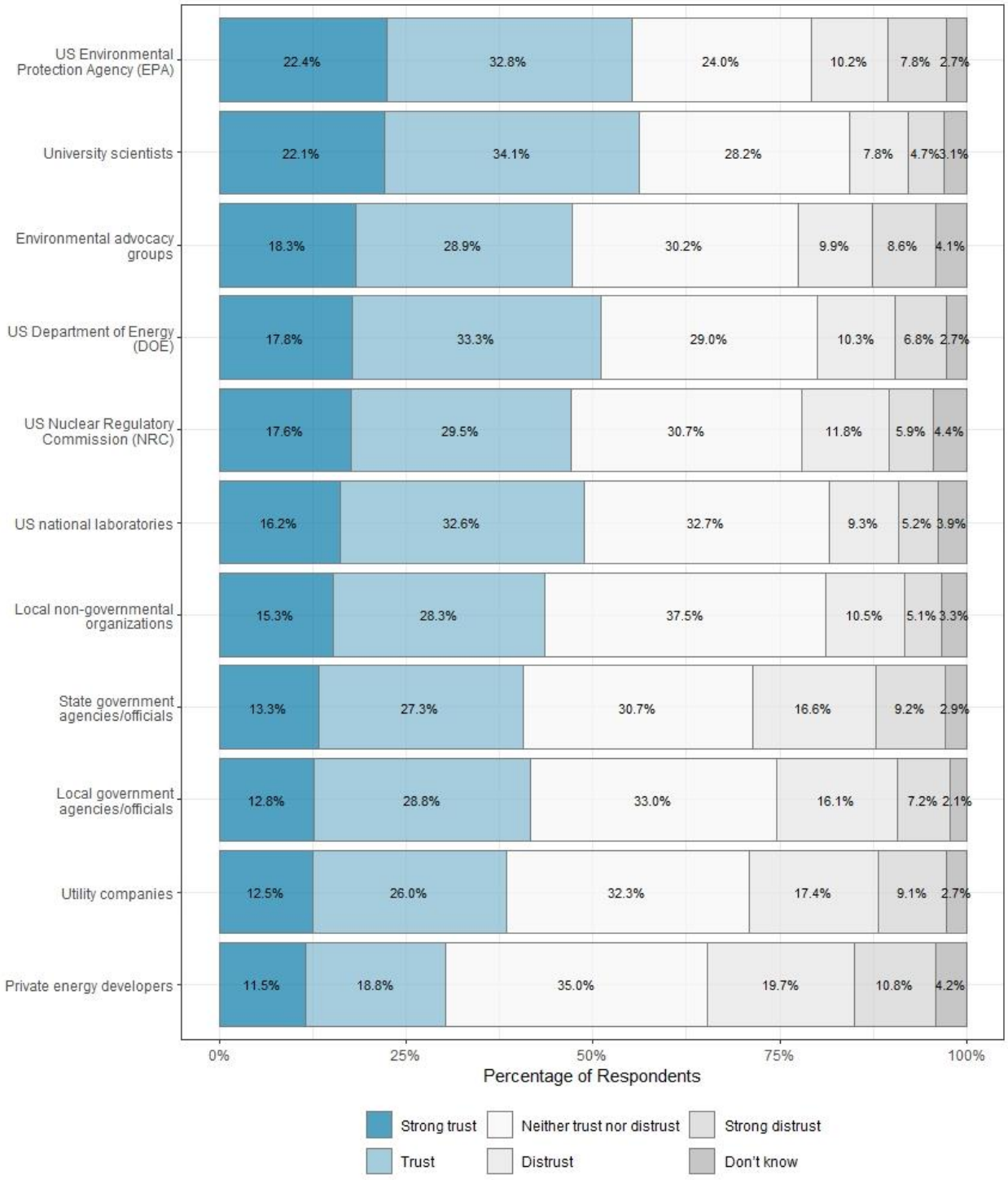
3. Here are many factors that influence decisions about **where to locate and construct (or "site")** large-scale energy facilities. Imagine that there was a proposal to develop a large-scale energy facility in your community. Using the list below, please select the top three factors that would be most important to you if your community were considering a large-scale energy facility?



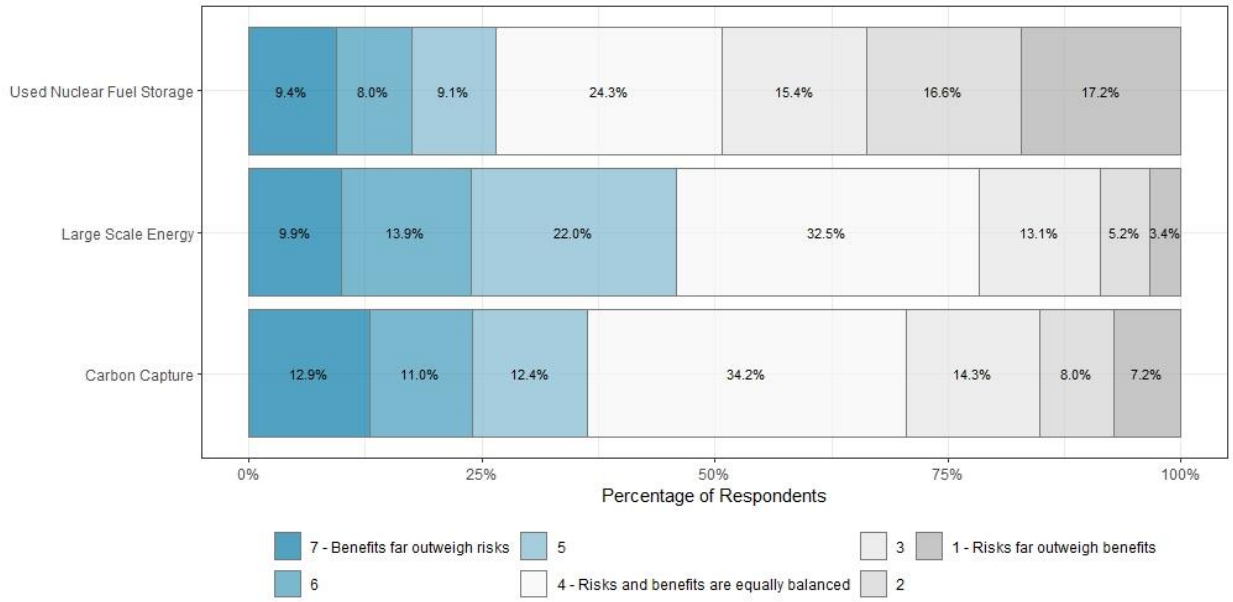
4. As with facility siting, there are many factors that influence decisions about **the physical design of large-scale energy facilities**. Using the list below, please select the top three factors that would be most important to you if your community were considering a large-scale energy facility?



5. Large-scale energy facilities can be technically complex and getting information you can trust is important. Please indicate your level of trust in information about an energy facility that you may receive from each of the following organizations.

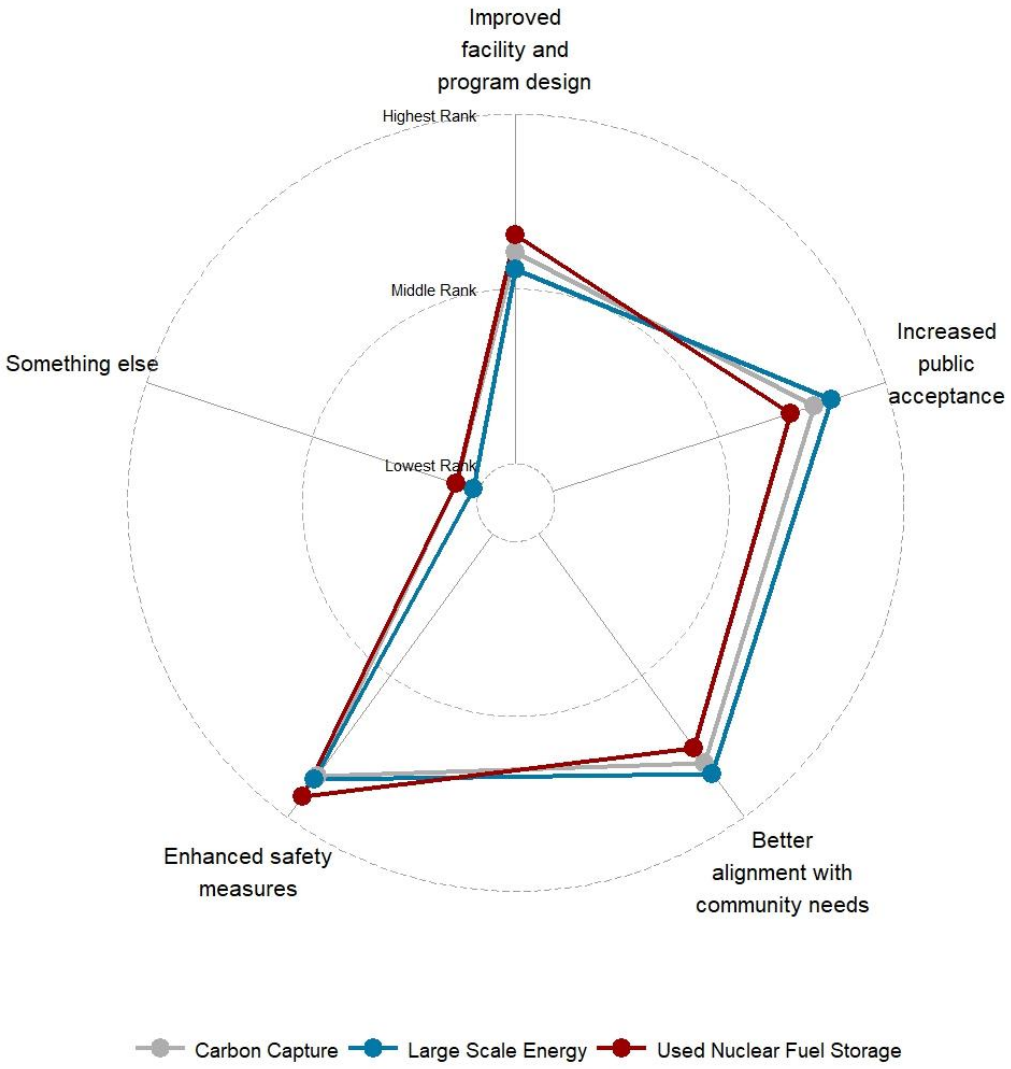


6. How would you rate the overall balance of the risks and benefits of having a _____ in your community?

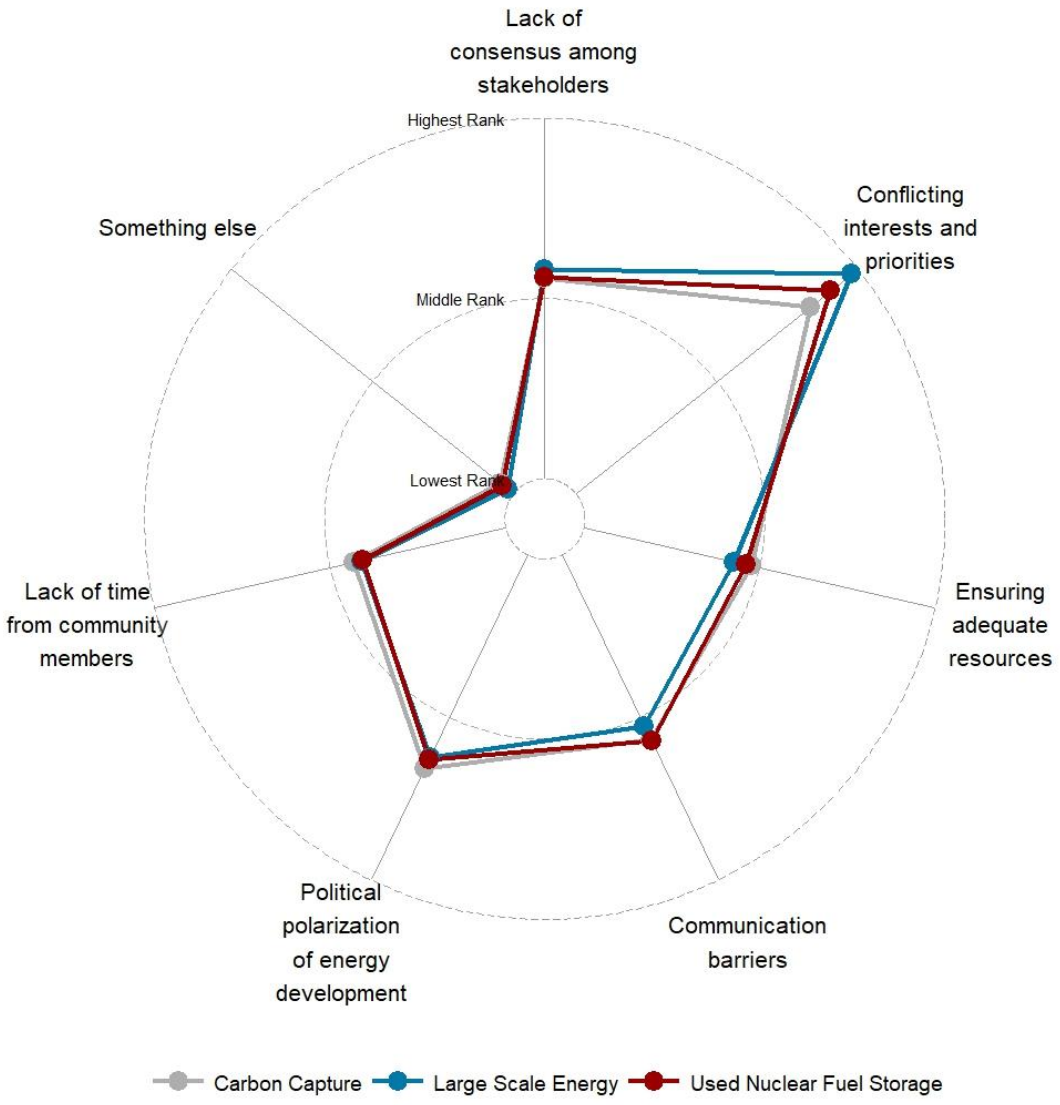


Imagine that your community has expressed an interest in hosting a [carbon capture facility OR large-scale energy facility OR used nuclear fuel storage facility] (note: participants saw one of these three options). Community leaders are suggesting the new co-design approach to facility and program design. In this approach, community members, in collaboration with scientists/engineers and policymakers, will work together to design a facility and program that fits the needs and identity of your community.

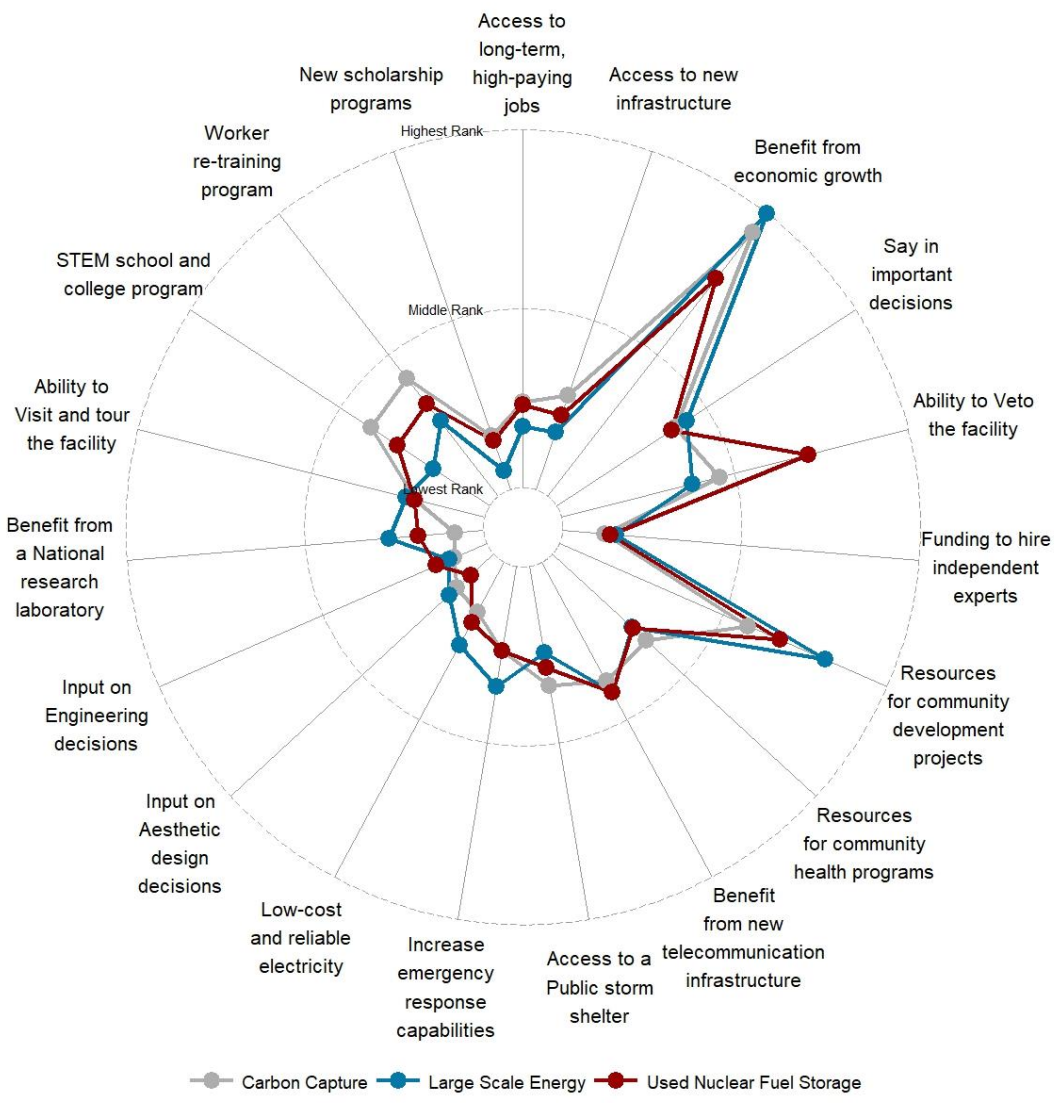
7. Which of these potential benefits do you think may be achieved by co-designing the facility and program? Please select all that apply.



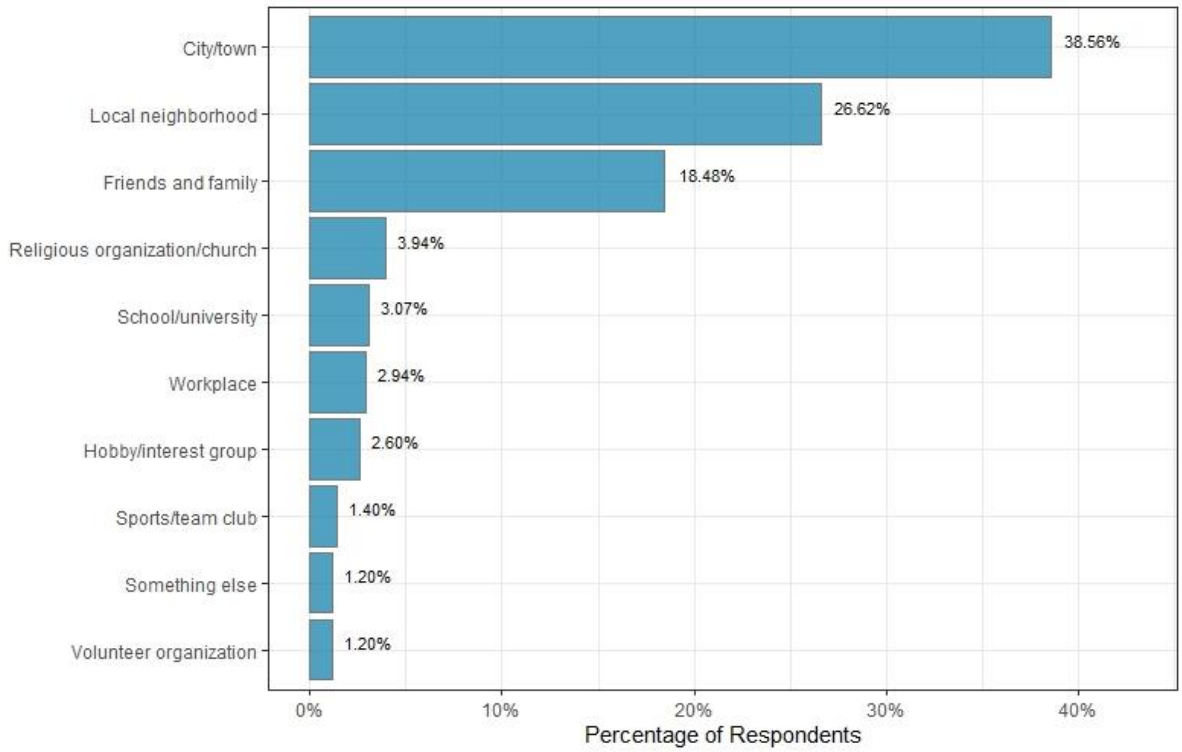
8. Which of these potential challenges do you think may arise during a co-design process? Please select all that apply.



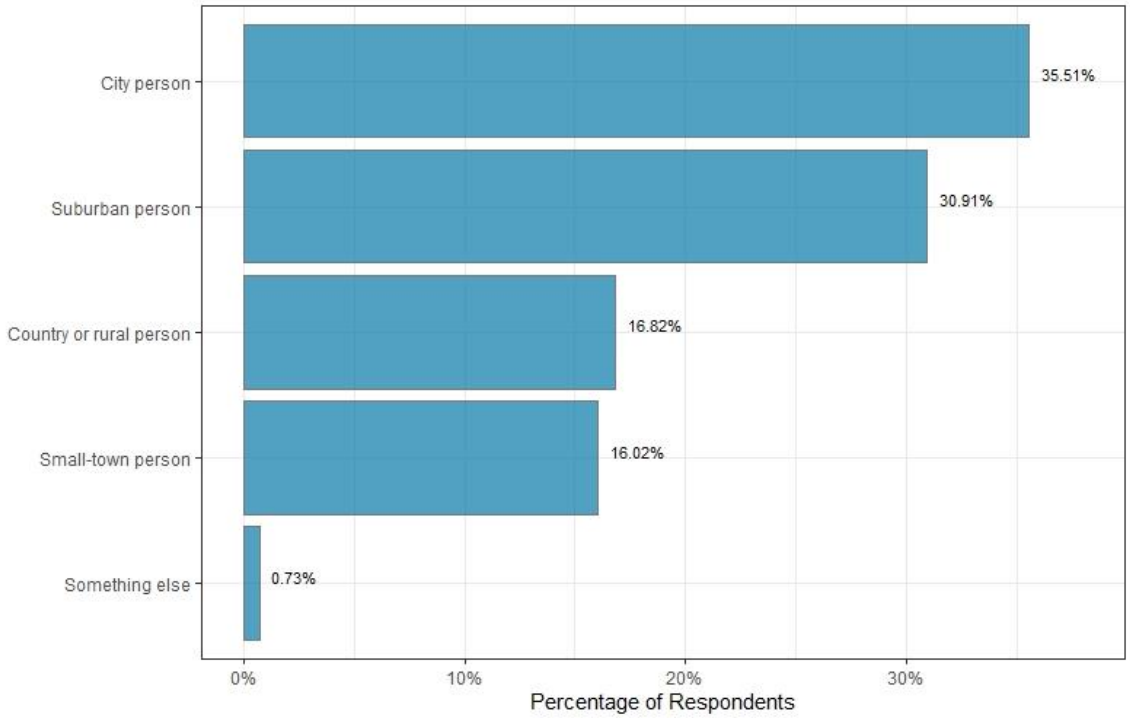
9. Which of these features would you prioritize most if you were co-designing a _____ your community?



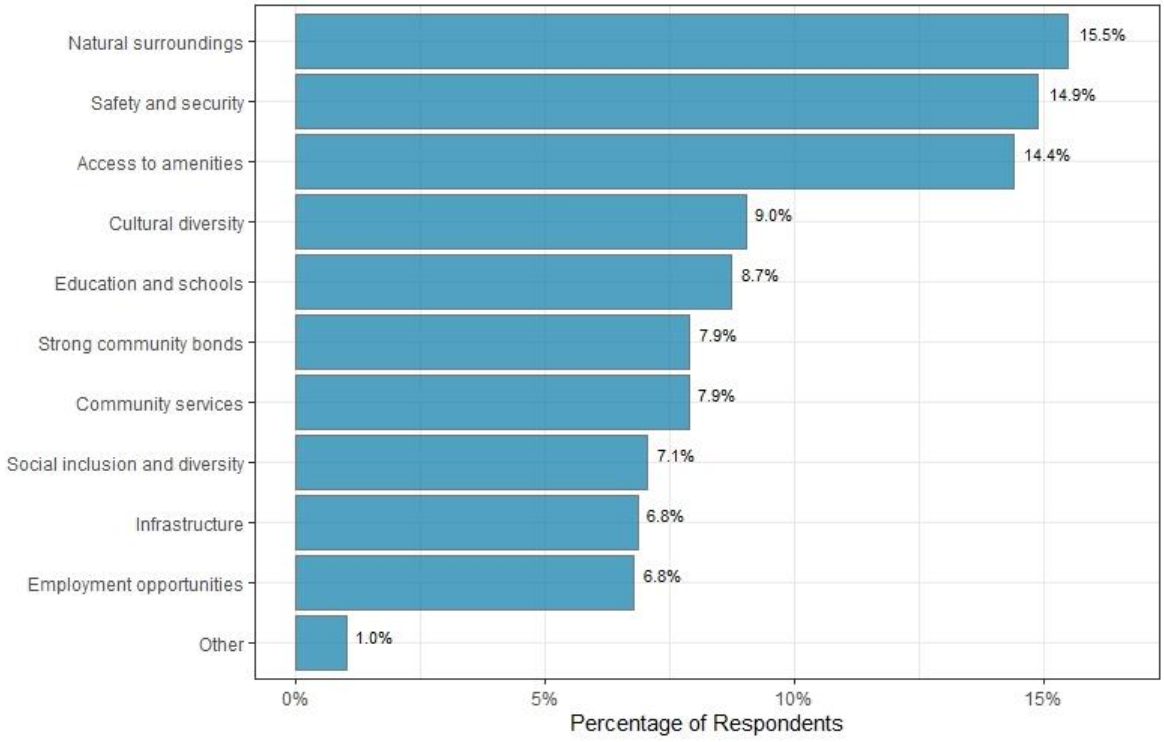
10. Which of the following categories best describes your community?



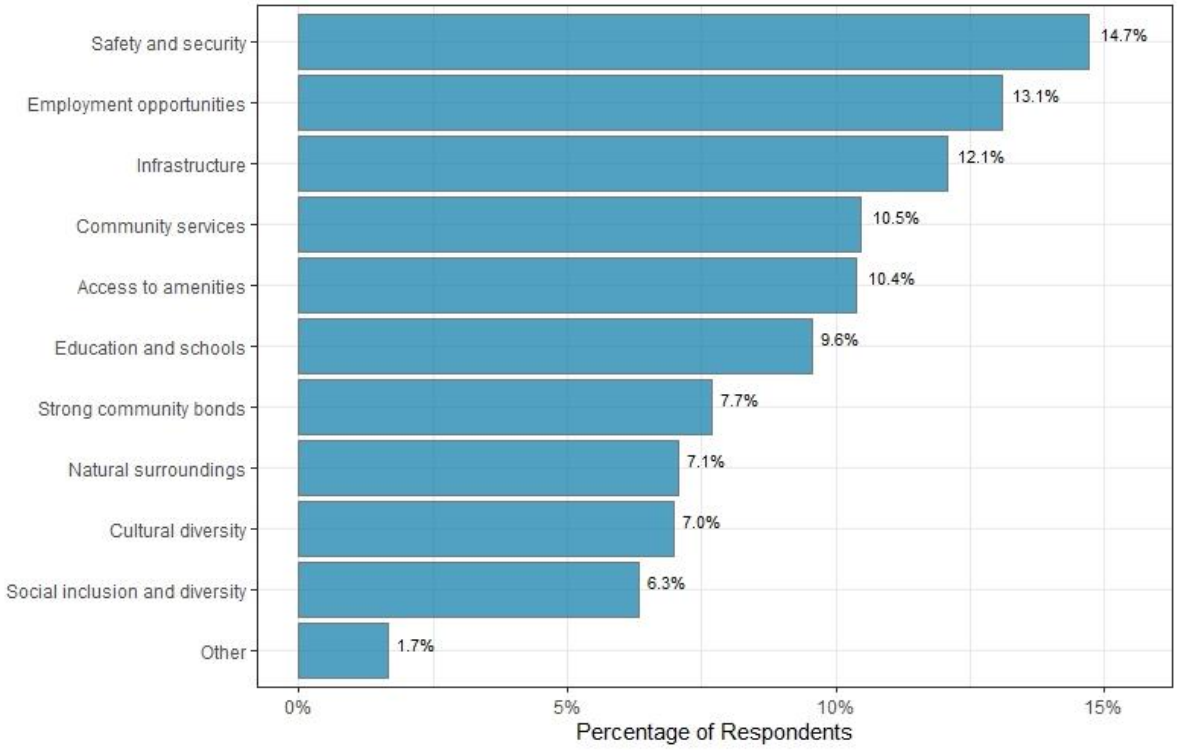
11. Regardless of where you currently live, do you usually think of yourself as a city person, a suburban person, a small-town person, a country or rural person, or something else?



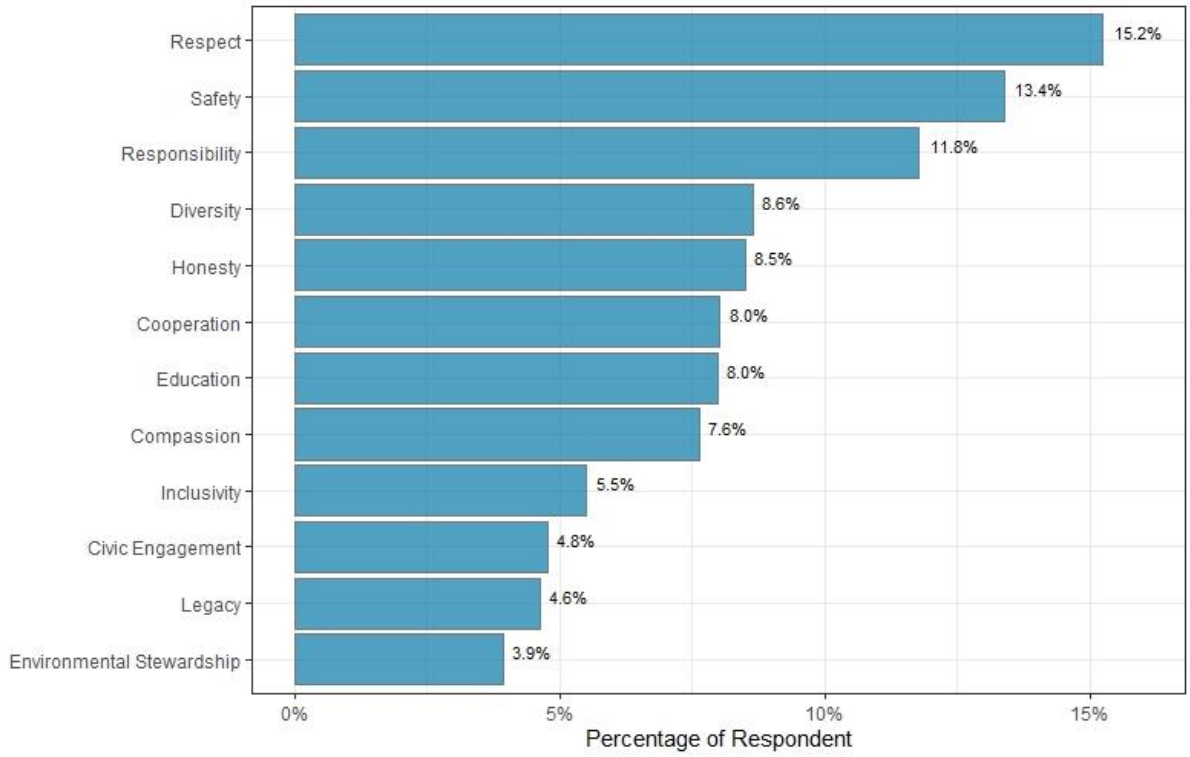
12. What are some things you like most about living in your community? Please select all that apply.



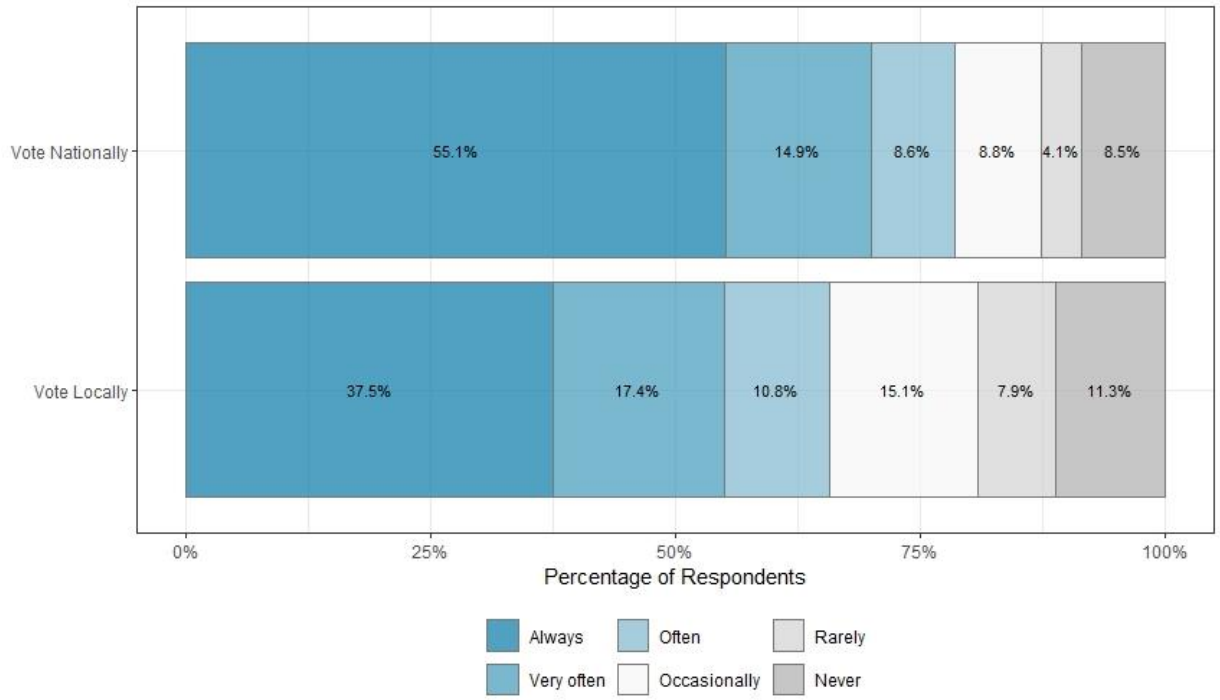
13. What are some things you would like to see change or improve about the community where you live? Please select all that apply.



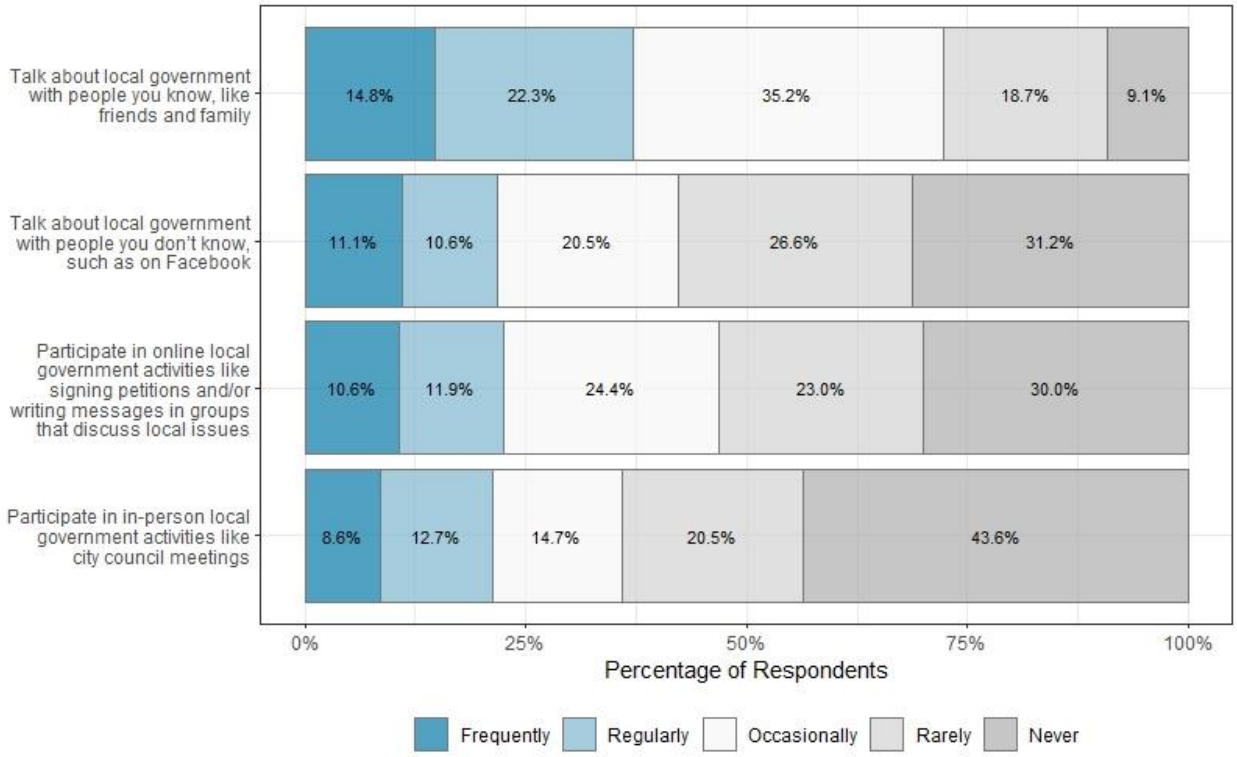
14. Please review this list and select three values that you believe many people share in the community where you live



15. Do you vote in national elections (presidential and congressional elections) or local elections (mayor, city council, and school board elections)?

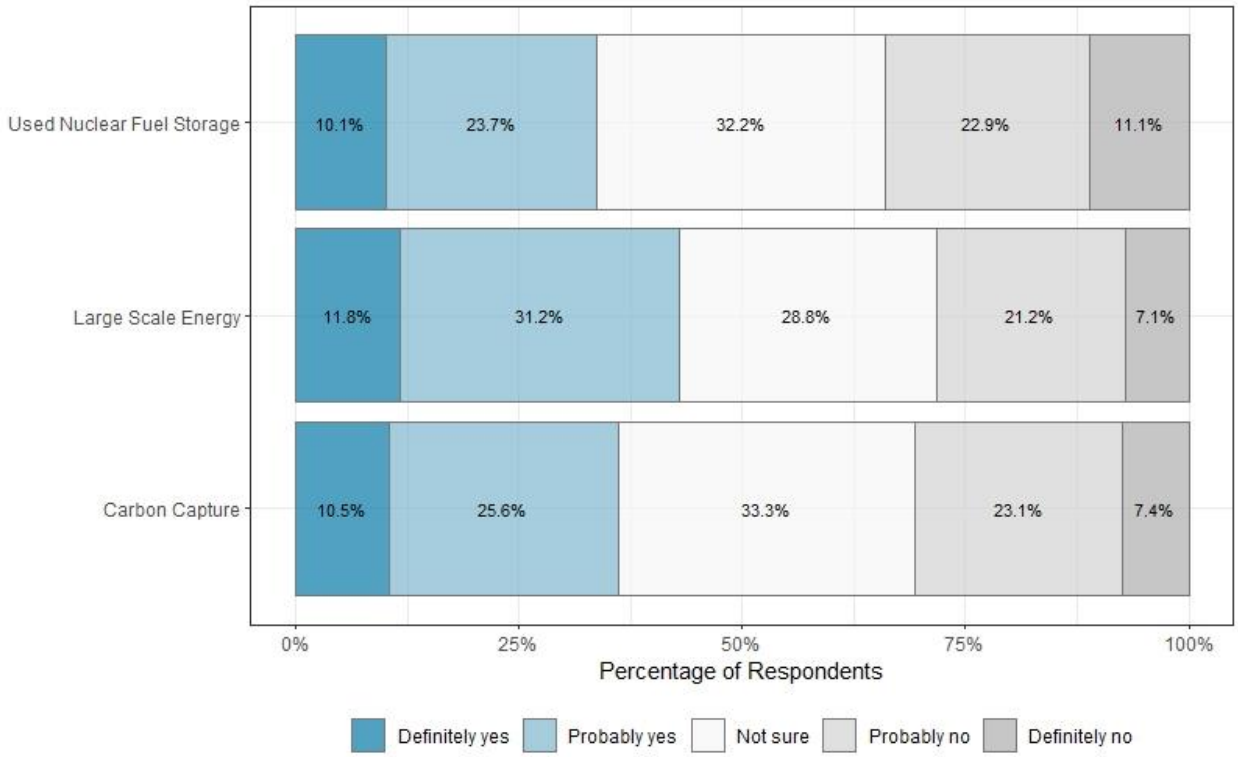


16. How often do you…

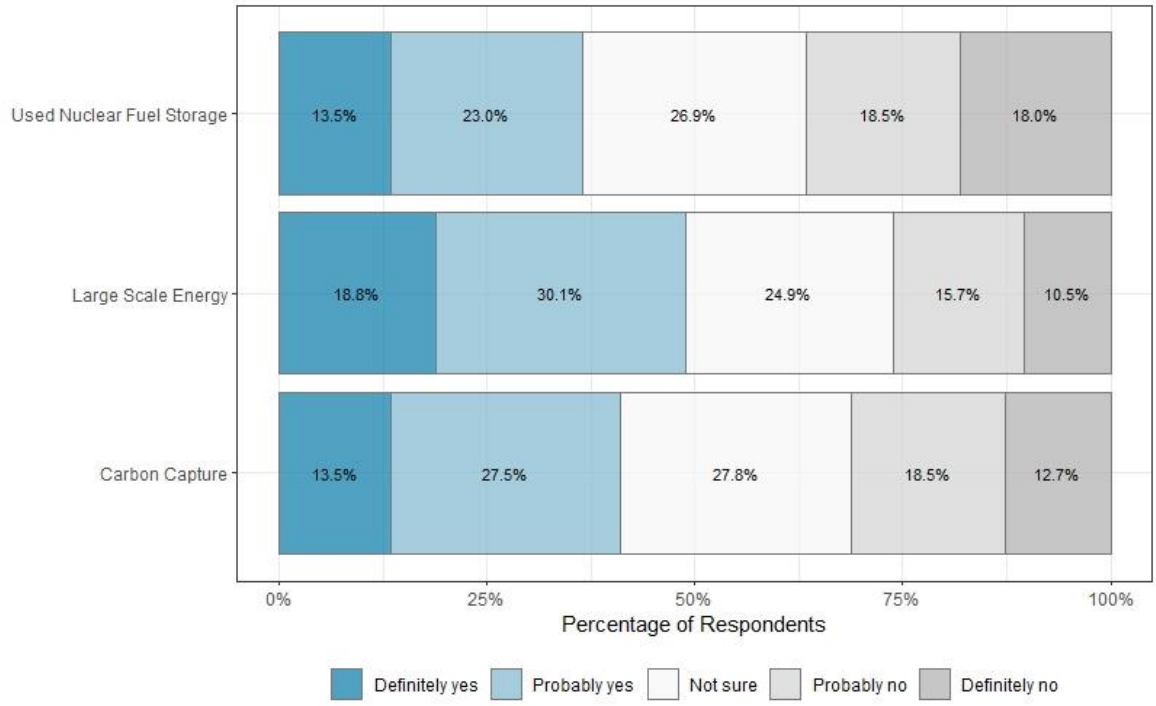


Now, imagine that community leaders are looking for volunteers to serve on a co-design committee. This co-design committee would include community volunteers who would collaborate with scientists/engineers and policymakers to design a [carbon capture facility OR large-scale energy facility OR used nuclear fuel storage facility] (note: participants saw one of these three options) that fits the needs and identity of your community. Collaboration will involve a 90-minute meeting with scientists/engineers and policymakers every month for 12 months.

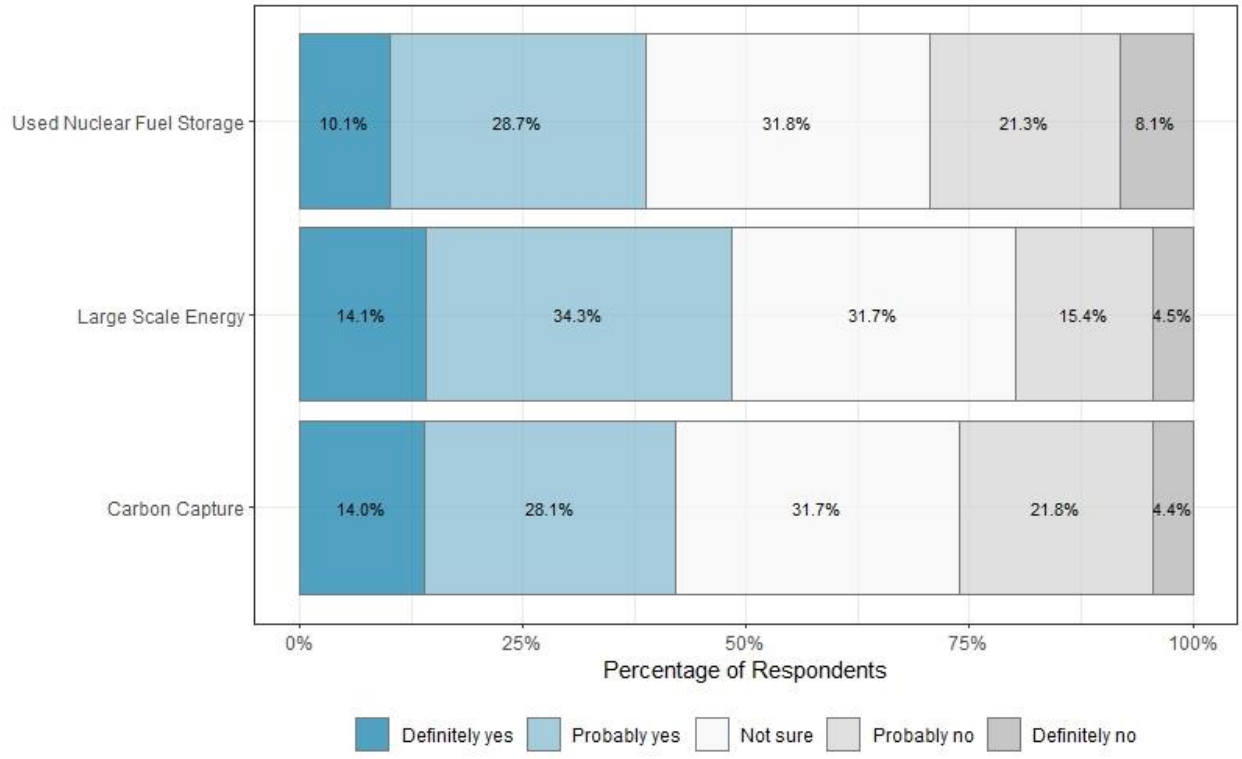
17. Do you think average people in the community where you live would have the capacity (e.g., time, resources, confidence) to serve on this co-design committee?



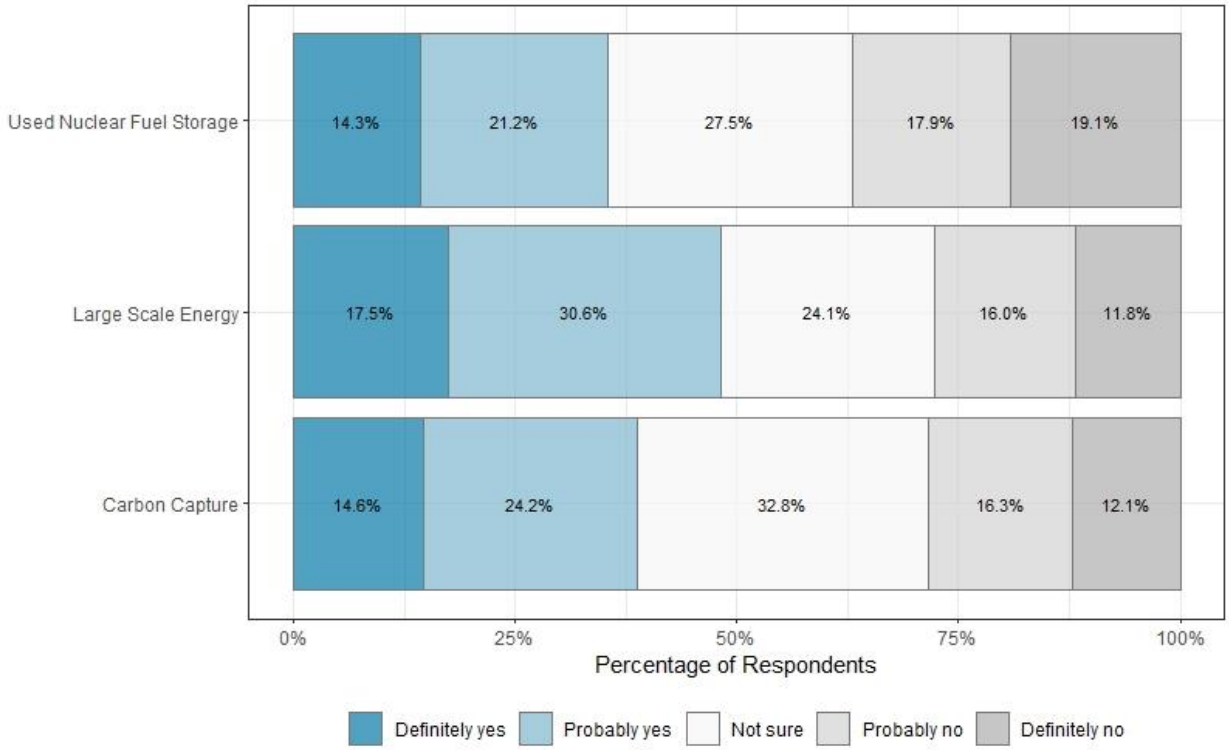
18. Do you think you would have the capacity (e.g., time, resources, confidence) to serve on this co-design committee?



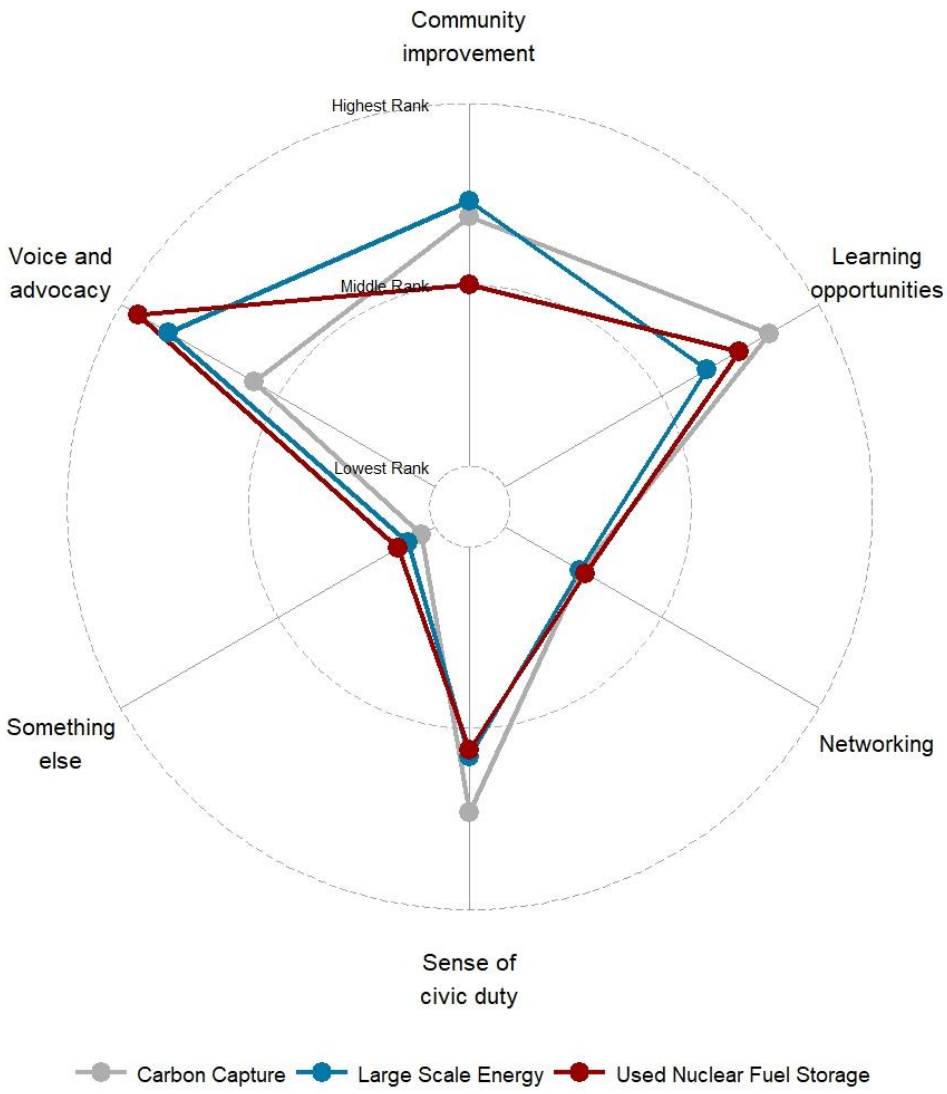
19. Do you think average people in the community where you live would volunteer to serve on this co-design committee?



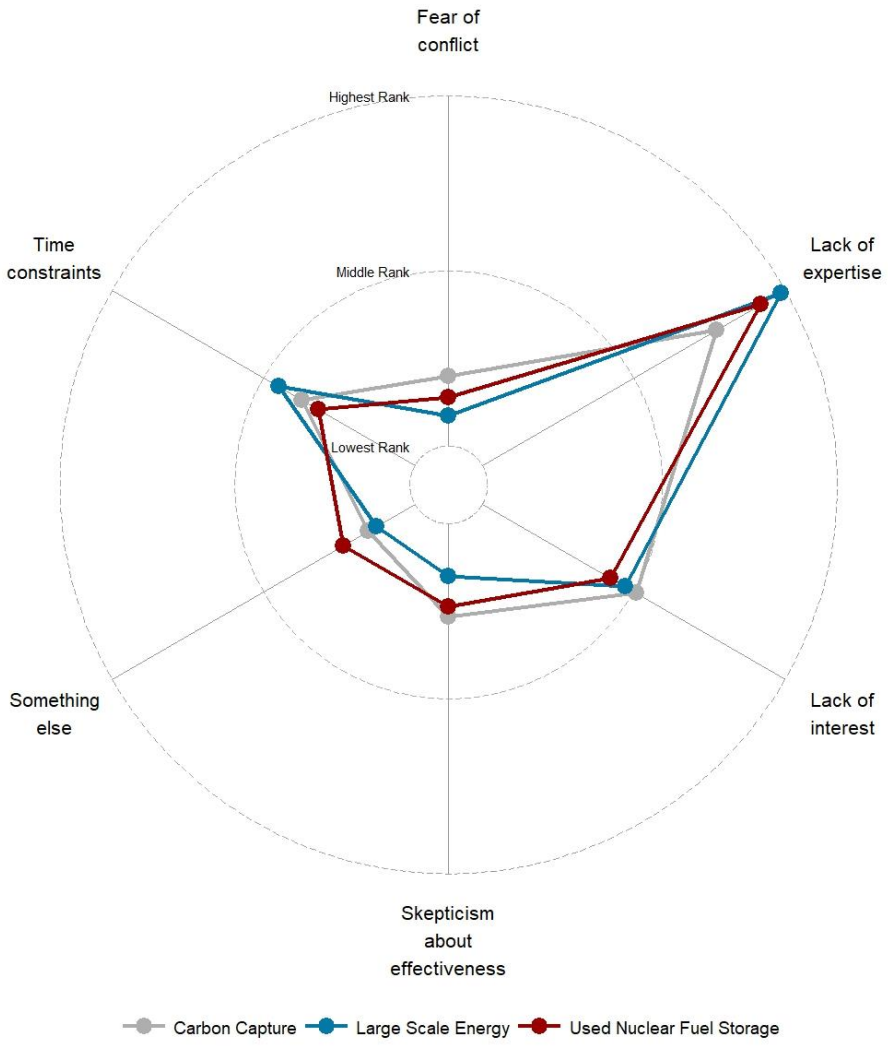
20. Would you volunteer to serve on this co-design committee?



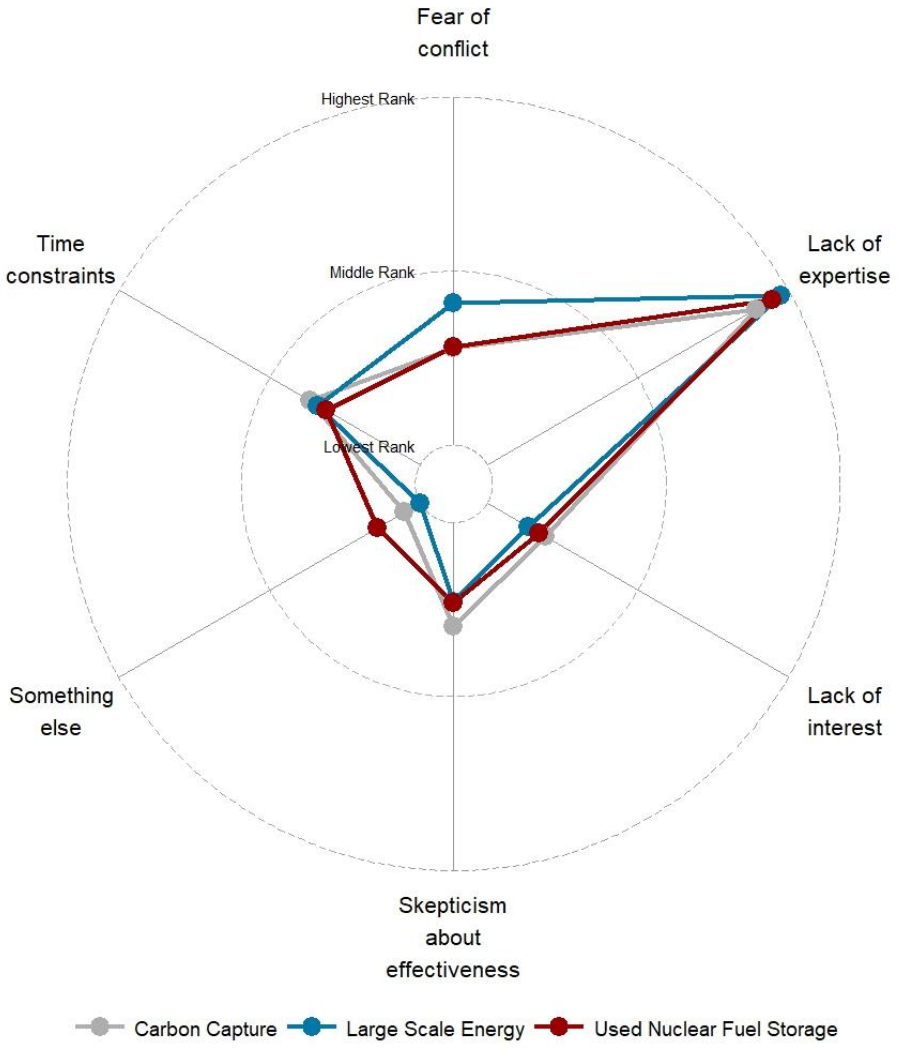
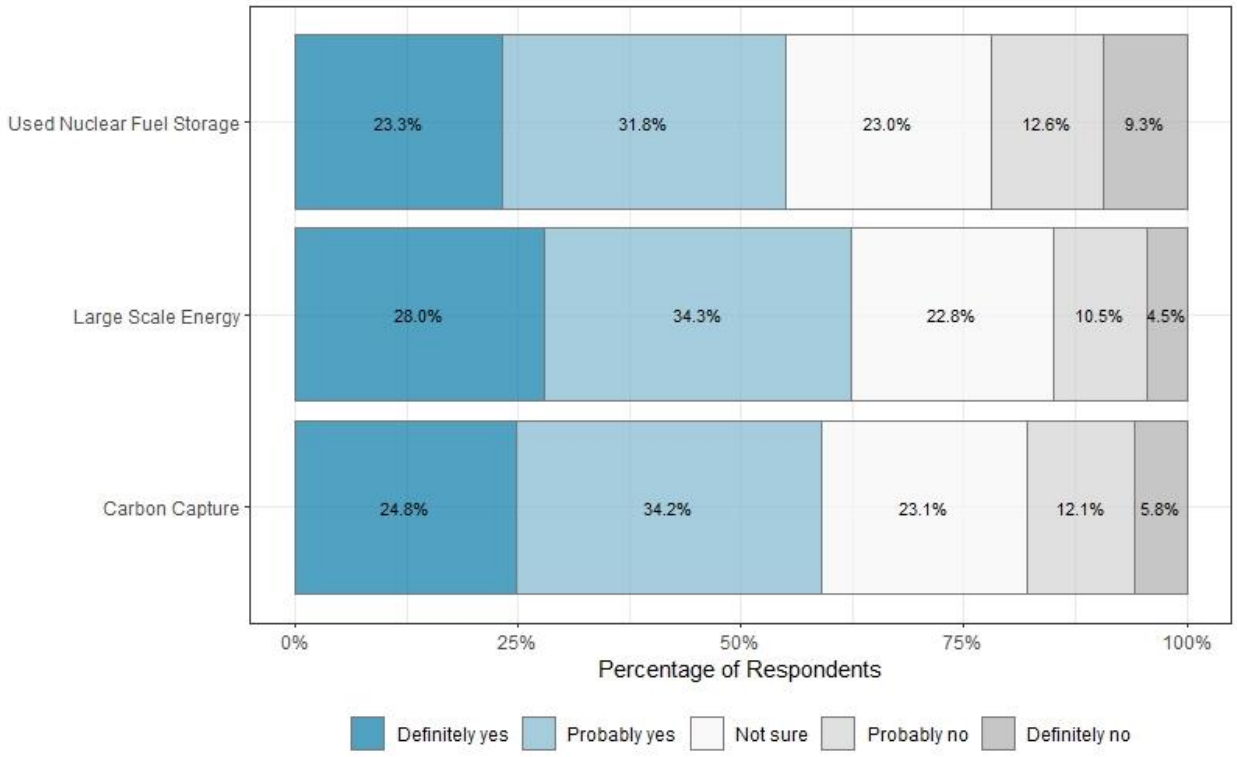
21. Can you briefly explain why you would volunteer to serve on this co-design committee?



22. Can you briefly explain why you would not volunteer to serve on this co-design committee?



23. Can you briefly explain why you are not sure if you would volunteer to serve on this co-design committee?



24. Would you be more likely to serve on this co-design committee if you were compensated for your time?