**IPPRA Fusion Energy Survey (2023)**

**Web: *n* = 2,016; January 19-30, 2023; Avg. Time = 12 min**

**This research has been approved by the University of Oklahoma, Norman Campus IRB.**

**IRB Number: 0680**

**Approval date: 05/11/2018**

This survey asks about current issues, including your views on environmental and energy issues such as options for future energy sources and the possible effects of energy use on the environment. The survey should take about 20 minutes to complete.

We will begin by asking you a little bit about yourself.

**age:** How old are you? [verbatim; require numeric, if < 18 skip to end of survey] [Median = 46, Mean = 46.9]

**gend:** Are you male or female?

0 - Female [49%]

1 – Male [51%]

**edu:** What is the highest level of education you have COMPLETED?

1 - Less than high school [4%]

2 - High school / GED [32%]

3 - Vocational or Technical Training [3%]

4 - Some College; NO Degree [16%]

5 - 2-year College / Associate’s Degree [9%]

6 - Bachelor’s Degree [24%]

7 - Master’s Degree [9%]

8 - PhD / JD (Law) / MD [2%]

**hisp:** Do you consider yourself to be Hispanic, Latino, or Spanish or to have Hispanic, Latino, or Spanish origins?

0 - No [85%]

1 – Yes [15%]

**race:** Which of the following best describes your race?

1 - White [87%]

2 - Black or African American [9%]

3 - American Indian or Alaska Native [0%]

4 - Asian [3%]

5 - Native Hawaiian or Pacific Islander [0%]

6 - Two or more races [1%]

**state:** Using the dropdown list, please select the state where yourprimary residenceis located.

**zip:** What is the five-digit zip code at your residence? (This information will only be used to compare grouped differences, not to identify you.) [verbatim]

**party**: Generally speaking, do you usually think of yourself as a Republican, a Democrat, an Independent, or what?

1 - Democratic party [37%]

2 - Republican party (or GOP) [31%]

3 - Independent [29%]

4 - Other party (Please specify) [2%]

**inc:** Was the estimated annual income for your household in 2022:

1 - Less than $50,000 [go to **inc50**]

2 - At least $50,000 but less than $100,000 [go to **inc100**]

3 - At least $100,000 but less than $150,000 [go to **inc150**]

4 - $150,000 or more [go to **inc200**]

The rest of this survey will focus on energy (electricity) production in the US. We will start with some questions about [**rand\_word**: ***fusion energy*** *|* ***nuclear fusion*** |***nuclear energy***]. Can you tell us the first three words or phrases that come to you when you think about **rand\_word**.

**word\_1:** First word/phrase: [verbatim]

**word\_1\_feel:** When you think about this word or phrase, do you have positive or negative feelings?

1 - Very negative [“fusion energy” = 5%; “nuclear fusion” = 16%; “nuclear energy” = 18%]
2 – Negative [“fusion energy” = 11%; “nuclear fusion” = 21%; “nuclear energy” = 25%]
3 - Neither positive nor negative [“fusion energy” = 41%; “nuclear fusion” = 28%; “nuclear energy” = 25%]

4 – Positive [“fusion energy” = 27%; “nuclear fusion” = 22%; “nuclear energy” = 18%]
5 - Very positive [“fusion energy” = 16%; “nuclear fusion” = 13%; “nuclear energy” = 14%]

**word\_2:** Second word/phrase: [verbatim]

**word\_2\_feel:** When you think about this word or phrase, do you have positive or negative feelings?

1 - Very negative [“fusion energy” = 6%; “nuclear fusion” = 16%; “nuclear energy” = 19%]
2 – Negative [“fusion energy” = 11%; “nuclear fusion” = 19%; “nuclear energy” = 21%]
3 - Neither positive nor negative [“fusion energy” = 39%; “nuclear fusion” = 31%; “nuclear energy” = 23%]

4 – Positive [“fusion energy” = 30%; “nuclear fusion” = 21%; “nuclear energy” = 20%]
5 - Very positive [“fusion energy” = 14%; “nuclear fusion” = 13%; “nuclear energy” = 17%]

**word\_3:** Third word/phrase: [verbatim]

**word\_3\_feel:** When you think about this word or phrase, do you have positive or negative feelings?

1 - Very negative [“fusion energy” = 7%; “nuclear fusion” = 17%; “nuclear energy” = 20%]
2 – Negative [“fusion energy” = 9%; “nuclear fusion” = 16%; “nuclear energy” = 16%]
3 - Neither positive nor negative [“fusion energy” = 38%; “nuclear fusion” = 28%; “nuclear energy” = 26%]

4 – Positive [“fusion energy” = 29%; “nuclear fusion” = 24%; “nuclear energy” = 22%]
5 - Very positive [“fusion energy” = 16%; “nuclear fusion” = 14%; “nuclear energy” = 15%]

Now we want you to think carefully about ***fusion energy***. Please review this information before you continue.

The US government is providing incentives to accelerate research and development of fusion energy. Fusion is the process of combining two or more small atoms to form a single larger atom. This process, which powers the sun, releases an enormous amount of energy. Some scientists believe that we can harness it on earth to produce a clean, safe, and virtually limitless energy source. While progress has been made in developing fusion as a viable energy source, it is still in the development stage and is not yet ready for widespread use.

**fusion\_know:** Before reading this information, had you heard about ***fusion energy***?

0 – No 39%

1 – Yes 48%

2 - Not sure 13%

[show if **fusion\_know** = 1]

**und\_fusion\_tech:** How would you rate your knowledge of ***fusion energy*** technology? [Mean = 4.85]

0 - Not at all knowledgeable [4%]

1 [5%]

2 [11%]

3 [13%]

4 [11%]

5 [19%]

6 [11%]

7 [11%]

8 [8%]

9 [4%]

10 - Extremely knowledgeable [5%]

As with all energy sources, there are both risks and benefits of fusion energy.

**rskben\_fusion:** How do you rate the overall balance of the risks and benefits of ***fusion energy*** in the US? It is ok if you don’t know very much about the technology. Just give us your first impressions. [Mean = 4.4]

1 - Risks far outweigh benefits [5%]

2 [3%]

3 [11%]

4 - Risks and benefits are equally balanced [41%]

5 [20%]

6 [10%]

7 - Benefits far outweigh risks [10%]

Next, we have some questions about ***nuclear energy*** technology. Here, we want you to focus on the nuclear technology that we currently use to generate electricity. This technology splits a single large atom into two or more smaller atoms. This process releases a considerable amount of energy. Some scientists believe that it is a clean, reliable, and abundant energy source that we ought to use more. There are currently 53 nuclear power plants in the US that provide approximately 20% of the electricity we consume.

**und\_nuc\_tech:** How would you rate your knowledge of ***nuclear energy*** technology? [Mean = 4.54]

0 - Not at all knowledgeable [11%]

1 [6%]

2 [9%]

3 [11%]

4 [10%]

5 [17%]

6 [10%]

7 [10%]

8 [8%]

9 [2%]

10 - Extremely knowledgeable [5%]

As with all energy sources, there are both risks and benefits of nuclear energy.

**rskben\_nuke:** How do you rate the overall balance of the risks and benefits of ***nuclear energy*** in the US? [Mean = 4.17]

1 - Risks far outweigh benefits [8%]

2 [6%]

3 [14%]

4 - Risks and benefits are equally balanced [37%]

5 [16%]

6 [11%]

7 - Benefits far outweigh risks [9%]

**new\_fusion:** How do you feel about the construction and use of ***fusion***power plants to generate electricity in the US? [Mean = 4.82]

1 - Strongly oppose [3%]

2 [3%]

3 [8%]

4 [30%]

5 [24%]

6 [15%]

7 - Strongly support [17%]

**new\_nuke:** How do you feel about the construction and use of new ***nuclear*** power plants to generate electricity in the US? [Mean = 4.38]

1 - Strongly oppose [9%]

2 [5%]

3 [12%]

4 [25%]

5 [22%]

6 [12%]

7 - Strongly support [15%]

Some books and movies portray a future where technology provides products and services that make life better for people. Others portray a future where technology causes environmental and social problems that make life worse for people. How about you?

**future\_tech:** Over the long term, you think that technological changes will lead to a future where people’s lives are better or to a future where people’s lives are worse? [Mean = 2.48]

1 - A lot better [13%]

2 - Mostly better [44%]

3 - Neither better nor worse [28%]

4 - Mostly worse [12%]

5 - A lot worse [3%]

**doright:** On a scale from zero to ten, where zero means *none of the time* and ten means *all the time*, how much of the time do you trust the government in Washington to do what is right for the American people? [Mean = 4.39]

0 - None of the time [12%]

1 [6%]

2 [9%]

3 [11%]

4 [9%]

5 [18%]

6 [10%]

7 [9%]

8 [8%]

9 [3%]

10 - All the time [4%]

**worry\_enrgy:** Energy (including cost and availability) [Mean = 7.82]

0 - Not at all concerned [2%]

1 [0%]

2 [1%]

3 [2%]

4 [3%]

5 [8%]

6 [7%]

7 [14%]

8 [17%]

9 [15%]

10 - Extremely concerned [32%]

**worry\_enviro:** Environment (including pollution and climate change) [Mean = 7.12]

0 - Not at all concerned [5%]

1 [3%]

2 [3%]

3 [4%]

4 [4%]

5 [9%]

6 [8%]

7 [11%]

8 [11%]

9 [12%]

10 - Extremely concerned [30%]

**gccrsk:** On a scale from zero to ten, where zero means *no risk* and ten means *extreme risk*, how much risk do you think global warming poses for people and the environment? [Mean = 7.15]

0 - No risk [4%]

1 [2%]

2 [4%]

3 [3%]

4 [3%]

5 [9%]

6 [10%]

7 [12%]

8 [15%]

9 [10%]

10 - Extreme risk [29%]

New technologies can be technically complex and getting information you can trust is important. Please indicate your level of trust in information about ***fusion energy*** provided by technical experts from each of the following organizations. [random order in table]

**univ\_trust:** University scientists that study fusion energy [Mean = 6.74]

0 - No trust [5%]

1 [2%]

2 [2%]

3 [3%]

4 [5%]

5 [14%]

6 [9%]

7 [14%]

8 [17%]

9 [13%]

10 - Complete trust [16%]

**nas\_trust:** National Academy of Sciences [Mean = 6.57]

0 - No trust [5%]

1 [2%]

2 [3%]

3 [3%]

4 [6%]

5 [16%]

6 [9%]

7 [13%]

8 [16%]

9 [13%]

10 - Complete trust [15%]

**labs\_trust:** [**rand\_lab**: US national laboratories for energy and security | Lawrence Livermore National Laboratory] [Means: General = 6; US National Labs = 6; Lawrence Livermore National Laboratory = 6]

0 - No trust [General = 6%; US National Labs = 5%; Lawrence Livermore National Laboratory = 8%]

1 [General = 3%; US National Labs = 2%; Lawrence Livermore National Laboratory = 3%]

2 [General = 3%; US National Labs = 4%; Lawrence Livermore National Laboratory = 3%]

3 [General = 4%; US National Labs = 3%; Lawrence Livermore National Laboratory = 5%]

4 [General = 7%; US National Labs = 6%; Lawrence Livermore National Laboratory = 8%]

5 [General = 21%; US National Labs = 19%; Lawrence Livermore National Laboratory = 24%]

6 [General = 10%; US National Labs = 10%; Lawrence Livermore National Laboratory = 9%]

7 [General = 13%; US National Labs = 15%; Lawrence Livermore National Laboratory = 10%]

8 [General = 13%; US National Labs = 14%; Lawrence Livermore National Laboratory = 13%]

9 [General = 10%; US National Labs = 12%; Lawrence Livermore National Laboratory = 8%]

10 - Complete trust [General = 11%; US National Labs = 11%; Lawrence Livermore National Laboratory = 10%]

**nrc\_trust:** US Nuclear Regulatory Commission [Mean = 6.15]

0 - No trust [6%]

1 [3%]

2 [3%]

3 [5%]

4 [6%]

5 [16%]

6 [10%]

7 [13%]

8 [15%]

9 [10%]

10 - Complete trust [13%]

**doe\_trust:** US Department of Energy [Mean = 6.15]

0 - No trust [7%]

1 [3%]

2 [3%]

3 [4%]

4 [6%]

5 [16%]

6 [10%]

7 [12%]

8 [15%]

9 [11%]

10 - Complete trust [13%]

**epa\_trust:** US Environmental Protection Agency [Mean = 6.1]

0 - No trust [7%]

1 [3%]

2 [4%]

3 [4%]

4 [7%]

5 [15%]

6 [10%]

7 [12%]

8 [14%]

9 [11%]

10 - Complete trust [13%]

**tech\_trust:** Technologycompanies that are researching and developing fusion energy [Mean = 6.07]

0 - No trust [6%]

1 [2%]

2 [4%]

3 [4%]

4 [7%]

5 [17%]

6 [13%]

7 [13%]

8 [14%]

9 [9%]

10 - Complete trust [11%]

**enviro\_trust:** Environmental advocacy groups [Mean = 5.64]

0 - No trust [9%]

1 [3%]

2 [4%]

3 [6%]

4 [8%]

5 [17%]

6 [11%]

7 [11%]

8 [12%]

9 [8%]

10 - Complete trust [11%]

**media\_trust:** News or media [Mean = 4.39]

0 - No trust [18%]

1 [6%]

2 [7%]

3 [7%]

4 [9%]

5 [15%]

6 [9%]

7 [9%]

8 [8%]

9 [4%]

10 - Complete trust [7%]

**comments**: This survey is part of a project that focuses on ***fusion energy***. Is there anything you want to tell us about your views on ***fusion energy***? [verbatim]

Thank you very much for your participation in this survey! We greatly appreciate your time and attention.