APPENDIX B: USEER 2019 EMPLOYER SURVEY

Introduction:

Hello, my name is ________ and I am calling on behalf of the National Association of State Energy Officials, or NASEO. We are conducting a national survey about the energy, energy-related, and advanced manufacturing industries. May I please speak to the person most knowledgeable about staffing at [organization]?

Is now a convenient time?

This survey uses specific terms to describe various technologies and activities. If you require any definitions for clarification, please ask me at any time.

(If needed): This important survey addresses businesses that research, develop, manufacture, install or work with products that generate, distribute or save energy.

(If needed): This includes organizations involved in fossil and renewable energy production, energy efficiency products and services, motor vehicles, solar, wind, fossil and other energy sources, and other energy related products and services.

(If needed): Your individual responses will not be published; only aggregated information will be used in reporting the survey results.

(If needed): The survey should take approximately 15-30 minutes of your time. Your participation will help determine how investments of time and money should be made to support the industry and prepare the present and future labor pool.

(If needed): If you have any questions about NASEO's involvement in this survey, please contact David Terry at [insert phone]

*   *   *   *

A. Does your organization have at least one location with employees in the United States? (Please count yourself as an employee if you are an owner-operated business or sole proprietor).

1 Yes [CONTINUE]
2 No [TERMINATE]

For this survey, please only answer for your current business location. If your organization has other U.S. locations, please do not include their data. What is the zip code of your current location? [SHOW ADDRESS FROM SAMPLE FILE] ________________ (Accept all five-digit responses)
B. Is your organization involved, in whole or part, with an activity related to energy? (PAUSE, IF UNSURE OR NO READ REMAINDER OF QUESTION, IF YES GO TO SC) We define this as being directly involved with researching, developing, producing, manufacturing, distributing, selling, implementing, installing, or repairing components, goods or services related to Electric Power Generation; Electric Power Transmission, Distribution, and Storage; Energy Efficiency, Including Heating, Cooling and Building Envelope; Fuels, including Extraction, Processing, Production, and Distribution; and Transportation, including Motor Vehicles. This also includes supporting services such as consulting, finance, tax, and legal services related to energy.

1. Yes [CONTINUE]
2. No [TERMINATE]
3. Not sure [TERMINATE]

C. Which of the following industries describes your organization's work? [ALLOW MULTIPLE RESPONSES] [IF NEEDED: If your organization is involved in energy research or professional services for the industry, please select the options that are most relevant to your organization.]

1. Electric Power Generation
2. Electric Power Transmission and Distribution
3. Storage
4. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF NEEDED THIS INCLUDES THERMAL OR HOT WATER SOLAR)
5. Fuels
6. Transportation Vehicles, including Motor Vehicles (IF NEEDED: Including industrial vehicles, such as forklifts, and recreational vehicles, such as golf carts)
7. Component Parts for Transportation Vehicles
8. Carbon Capture and Storage
9. Other (Specify _____) TERMINATE
10. DK/NA TERMINATE

[ASK SCREENER D IF SC COUNT>1]]

D. Which do you consider your organization's primary industry, based on the majority of labor hours performed at your location? [PIPE IN SC CATEGORIES, ACCEPT ONE]

1. Electric Power Generation
2. Electric Power Transmission and Distribution
3. Storage
4. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF NEEDED THIS INCLUDES THERMAL OR HOT WATER SOLAR)
5. Fuels
6. Transportation, including Motor Vehicles (IF NEEDED: Including industrial vehicles, such as forklifts, and recreational vehicles, such as golf carts)
7. Component Parts for Transportation Vehicles
8. Carbon Capture and Storage
CREATE SDPRIME FROM SC IF SC COUNT=1, OR SD IF SC COUNT>1

E. [ASK FOR EACH SC] Which of the following [INSERT SC RESPONSE] technologies is your organization directly engaged with? [READ LIST, ALLOW MULTIPLE RESPONSES]

A. Electric Power Generation (IF SC=1) [RANDOMIZE]

1. Solar Photovoltaic Electric Generation [SET SOLAR=1]
2. Concentrated Solar Electric Generation [SET SOLAR=1]
3. Wind Generation
4. Geothermal Generation
5. Bioenergy/Biomass Generation
6. Low-Impact Hydroelectric Generation including Wave/Kinetic Generation
7. Traditional Hydroelectric Generation
8. Advanced/Low Emission Natural Gas
9. Nuclear Generation
10. Coal Generation
11. Oil and other Petroleum Generation
12. Natural Gas Generation
13. Combined Heat and Power
14. Other Generation (Specify)

B. Electric Power Transmission and Distribution (IF SC=2) [RANDOMIZE]

1. Traditional Transmission and Distribution
2. Smart Grid
3. Micro Grids
4. Other Grid Modernization
5. Other (Specify)

C. Storage (IF SC=3) [RANDOMIZE] [IF SEA=1, “(including battery storage for solar generation)”]

1. Pumped hydro-power storage
2. Battery storage [IF SEA=1, “(including battery storage for solar generation)”]
3. Mechanical storage (flywheels, compressed air energy storage, etc.)
4. Thermal storage
5. Liquefied natural gas
6. Compressed natural gas
7. Crude oil
8. Refined petroleum fuels (liquid)
9. Refined petroleum fuels (gas)
10. Coal storage (piles, domes, etc.)
11. Biofuels, including ethanol and biodiesel
12. Nuclear fuel
13. Other gas fuel (Specify)
14. Other liquid fuel (Specify)
15. Other Storage
16. Other (Specify)

IF SEC=2, ASK C_2 AND C_3

C_2. What type of Battery Storage do you work with? [READ LIST, ALLOW MULTIPLE RESPONSES] [RANDOMIZE]

1. Lithium batteries
2. Lead-based batteries
3. Other solid-electrode batteries (Specify)
4. Vanadium redox flow batteries
5. Other flow batteries (Specify)

C_3. What is the application of your battery storage work? [READ LIST, ALLOW MULTIPLE RESPONSES] [RANDOMIZE]

1. Consumer devices
2. Vehicles or other transportation
3. Buildings or industrial facilities
4. Electric grid
5. Other (Specify)

D. Energy Efficiency, Including Heating, Cooling and Building Envelope (IF SC=4) [RANDOMIZE]

1. Energy Star Appliances
2. LED, CFL and Other Efficient Lighting
3. Traditional HVAC goods, control systems, and services
4. Energy Star/High Efficiency heating and cooling equipment, including boilers and furnaces with an AFUE rating of 90 or greater and air and central air conditioning units of 15 SEER or greater.
5. Solar thermal water heating and cooling [SET SOLAR=1]
6. Other renewable heating and cooling (geothermal, biomass, heat pumps, etc.)
7. Advanced Building Materials/Insulation
8. Recycled building materials
9. Reduced water consumption products and appliance
10. Other (Specify)

E. Fuels (IF SC=5) [RANDOMIZE]

1. Coal
2. Petroleum
3. Natural Gas
4. Other Fossil Fuel
5. Corn Ethanol
6. Other Ethanol/Non-Woody Biomass, including Biodiesel
7. Woody Biomass/Cellulosic Biofuel
8. Other Biofuels
9. Nuclear Fuel
10. Other (Specify)

F. Transportation Vehicles, Including Motor Vehicles (IF SC=6) [RANDOMIZE]

1. Gasoline and Diesel Motor Vehicles (excluding freight transport)
2. Hybrid Electric Vehicles
3. Plug-In Hybrid Vehicles
4. Electric Vehicles
5. Natural Gas Vehicles
6. Hydrogen Vehicles
7. Fuel Cell Vehicles
8. Other (Specify ______)

G. Component Parts for Transportation Vehicles (IF SC=7) [RANDOMIZE]

1. Transportation Vehicle Engine & Drive Parts
2. Transportation Vehicle Exhaust System Parts
3. Transportation Vehicle Body Parts
4. Other Transportation Vehicle Parts (Specify ______)

SET SOLAR=1 IF SEA=1 OR 2, OR TSF=1, AND SED=5

[IF RESPONDENT ONLY IDENTIFIES WITH ONE INDUSTRY AT SCREENER E (QC), USE THAT INDUSTRY FOR THE REMAINDER OF THE SURVEY IN PLACE OF “ENERGY” / IF MORE THAN ONE, CONTINUE TO USE “ENERGY.” EXCEPTION - IF THE ONLY SELECTION AT SCREENER C IS “OTHER” OR “DK/NA,” USE “ENERGY”]

F. Which of the following industry descriptions describe your organization’s focus as it relates to the [energy/ SC] industry? [ALLOW MULTIPLE RESPONSES]
1. An organization that manufactures and/or assembles [energy/ SC] goods or produces components that go into energy products
2. An organization that conducts research and development and related services for [energy/ SC]
3. An organization involved in the wholesale trade and distribution of [energy/ SC] products and services
4. An organization that installs [energy/ SC] systems or provides services for installation of [energy/ SC] systems
5. A public or private utility
6. An organization that provides consulting, engineering, finance, legal, or other professional services related to energy
7. An organization that conducts operations and maintenance (O&M) for [energy/ SC] systems
8. Other support services (Specify: _____)
9. Other (Specify: _____)
10. (DON'T READ) Not sure

[ASK SCREENER G IF MORE THAN ONE SELECTED AT SCREENER F]

G. Which do you consider your organization's primary focus as it relates to the [energy/ SC] industry, based on the labor hours performed at your location

1. An organization that manufactures and/or assembles [energy/ SC] goods or produces components that go into energy products
2. An organization that conducts research and development and related services for [energy/ SC]
3. An organization involved in the wholesale trade and distribution of [energy/ SC] products and services
4. An organization that installs [energy/ SC] systems or provides services for installation of [energy/ SC] systems
5. A public or private utility
6. An organization that provides consulting, engineering, finance, legal, or other professional services related to energy
7. An organization that conducts operations and maintenance (O&M) for [energy/ SC] systems
8. Other support services (Specify: _____)
9. Other (Specify: _____)
10. (DON'T READ) Not sure

SET SGPRIME BASED ON SCREENER G RESPONSE OR SCREENER F RESPONSE IF SCREENER F COUNT=1

IF SGPRIME = 1, 2, 5 ASK SCREENER H, otherwise SKIP
H. Does your organization primarily work with products that are already widely commercially available or in the development stage?

1. Primarily work with products that are already widely commercially available
2. Primarily work with products still, at least in part, under development
3. Work with both products that are already widely commercially available and under development
4. DK/NA

IF SCREENER H = 2, ASK SCREENER I, OTHERWISE SKIP

I. How would you best describe the stage of your primary product(s)?

1. Concept
2. Product Development
3. Pilot
4. DK/NA

* * * *

For this survey, we will just be asking about the employees that work from or directly report to your current location.

1. Including all full-time and part-time employees, how many permanent employees work at or from your current location?

   Record # of employees _________
   (DON'T READ) Have check box for Refused

2. Based on [Take Q1 #] full-time and part-time permanent employees at your location, how many employees do you expect to have at your location 12 months from now?

   1. More [record #_____]
   2. Fewer [record #_____]
   3. (DON'T READ) Same number
   4. (DON'T READ) Refused

[If amount differs by 10% or more in either direction, ask: ]
Just to confirm, you currently have ____ permanent employees at your current location and you expect to have ____ (more/fewer) employees, for a total of ____ permanent employees 12 months from now.
3. Of the [Take Q1 #] full time and part-time permanent employees at your current location, how many of these workers support the [energy/ SC] portion of your business? Please note that your response should include administrative staff supporting the energy portion of your business.

   Record # of employees ___________
   (DON'T READ) Have check box for Refused

[IF NEEDED: SUPPORT WORKERS ARE DEFINED AS THOSE INDIVIDUALS THAT SPEND ANY AMOUNT OF TIME, DIRECTLY WORKING ON ENERGY RELATED PROJECTS INCLUDING ADMINISTRATIVE SUPPORT WORKERS] [Q3 SHOULD BE LESS THAN OR EQUAL TO Q1 - BUILD IN CHECK]

4. How many full-time and part-time permanent employees did you have working at your current location 12 months ago that supported the [energy/SC] portion of your business?

   Record # of employees ___________
   (DON'T READ) Have check box for Refused

5. Based on [Take Q3 #] full-time and part-time permanent employees at your location that support the [energy/SC] portion of your business, how many employees do you expect to have at your location 12 months from now?

   1     More [record #_______]
   2     Fewer [record #_______]
   3     (DON'T READ) Same number
   4     (DON'T READ) Refused

   Just to confirm, you currently have ___ permanent employees supporting the energy portion of your business and you expect that number to be ____ (more/fewer) 12 months from now, for a total of ___

6. Thinking of your [INSERT Q3] energy employees, how many spend at least 50% of their time supporting the energy portion of your business?

   ______

7. Thinking of your [Q3 ANSWER] energy employees, how many spend all of their time supporting the energy portion of your business?

   Record: ______

SECTION 2 – Workforce Profile Questions

If SC COUNT > 1 response, ASK Q8
8. Thinking of your [Take Q3] [energy/ SC] workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the area where they spend the most time.

PIPE IN SCREENER C RESPONSES

Record # of employees ___________

If SC COUNT > 1 response and Q6>0, ASK Q9

9. Thinking of your [Take Q6] [energy/ SC] workers that spend at least 50% of their time supporting the energy portion of your business, please classify them in the following categories. Please count each employee only once and categorize them in the area where they spend the most time.

PIPE IN SCREENER C RESPONSES AND EMPLOYMENT FROM Q8

Record # of employees ___________

BUILD CHECK SO TOTAL MUST = Q6

IF SC = 1 and Screener E.A > 1 response, ASK Q10 OTHERWISE SKIP

USE Q3 IN PLACE OF Q8 IF SELECTED COUNT AT SCREENER C WAS ONE (ONE CHOICE)

10. Thinking of your [PIPE IN Q8/Q3 GENERATION ANSWER] energy generation workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.A RESPONSES

Record # of employees ___________

IF SC = 2 and Screener E.B > 1 response, ASK Q11 OTHERWISE SKIP

11. Thinking of your [PIPE IN Q8/Q3 ELECTRIC POWER TRANSMISSION AND DISTRIBUTION ANSWER] energy transmission, distribution, and storage workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.B RESPONSES

Record # of employees ___________
10

IF SC = 3 and Screener E.C > 1 response, ASK Q12 OTHERWISE SKIP

12. Thinking of your \[PIPE IN Q8/Q3 STORAGE ANSWER\] storage workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.C RESPONSES

Record # of employees __________

IF SC = 4 and Screener E.D > 1 response, ASK Q13 OTHERWISE SKIP

13. Thinking of your \[PIPE IN Q8/Q3 ENERGY EFFICIENCY, INCLUDING HEATING, COOLING AND BUILDING ENVELOPE ANSWER\] energy efficiency, including heating, cooling and building envelope, workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.D RESPONSES

Record # of employees __________

IF SC = 5 and Screener E.E > 1 response, ASK Q14 OTHERWISE SKIP

14. Thinking of your \[PIPE IN Q8/Q3 FUELS ANSWER\] fuels-related workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.E RESPONSES

Record # of employees __________

IF SC = 6 and Screener E.F > 1 response, ASK Q15 OTHERWISE SKIP

15. Thinking of your \[PIPE IN Q8/Q3 TRANSPORTATION VEHICLES ANSWER\] motor-vehicle related workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.F RESPONSES

Record # of employees __________
IF SC = 5 and Screener E.G > 1 response, ASK Q16 OTHERWISE SKIP

16. Thinking of your [PIPE IN Q8/Q3 COMPONENT PARTS ANSWER] energy generation workers at your location, please classify them in the following categories. Please count each employee only once and categorize them in the technology area where they spend the most time.

PIPE IN SCREENER E.F RESPONSES

Record # of employees __________

Demographic questions

17. Thinking of your [Take Q3] [energy/ SC] employees, how many are:

   a) Male: Record # employees __________
   b) Female: Record # of employees ______
   c) Gender non-binary: Record # of employees ______
   d) (DON'T READ) Refused

Q17 a+b must = Q3

18. Thinking of your [Take Q3] [energy/ SC] employees, please indicate the ethnicity:

   (a) Hispanic
   (b) Not Hispanic or Latino
   (c) (DON'T READ) Refused

Q18 a+b must = Q3

19. Thinking of your [Take Q3][energy/SC] employees, please indicate the race and choose all that apply:

   a) American Indian or Alaskan Native: Record # of employees ______
   b) Asian: Record # of employees __________
   c) Black or African American: Record # of employees _________
   d) Native Hawaiian or other Pacific Islander: Record # of employees ___
   e) White Record # of employees _________
   f) Two or more races: Record # of employees_______
   g) (DON'T READ) Refused

Q19 a-e must = Q3
20. Thinking of your [Take Q3] [energy/ SC] employees, how many are:
   a) Veterans of the U.S. Armed Forces Record # of employees _____
   b) 55 and over Record # of employees __________
   c) Union members Record # of employees __________
   d) (DON'T READ) Refused

21. Thinking of the current [Take Q3] [energy/ SC] employees at your location, how many are in the following occupational categories?

   (Please only assign one category to each employee that supports the [energy/ SC] portion of your business. If they fall into more than one category, please assign them to the category in which they devote more of their time.)

   a. Production/Manufacturing positions (includes assembly workers and those involved in the design, quality control and manufacturing process)
      Record # of employees __________
      (DON'T READ) Have check box for Refused

   b. Installation or repair positions (includes technicians, building trades people, and supervisors that are working at project site)
      Record # of employees __________
      (DON'T READ) Have check box for Refused

   c. Administrative positions (includes customer service representatives, clerks, office and operations support)
      Record # of employees __________
      (DON'T READ) Have check box for Refused

   d. Management/Professional positions (does not include those supervisors that spend a majority of their time at project sites or sales managers)
      Record # of employees __________
      (DON'T READ) Have check box for Refused

   e. Sales positions (includes cost estimators, sales representatives and sales managers)
      Record # of employees __________
      (DON'T READ) Have check box for Refused
f. Other (Specify: _______________

Record # of employees __________
(DON'T READ) Have check box for Refused

(CREATE INTERNAL CONTROL SO Q21 A+B+C+D+E+F EQUALS Q3]

SECTION 3 – Workforce Development & Training Needs

22. How many energy workers have you hired over the last 12 months, either for new positions or to replace former workers? Record __________

IF Q22>0, ask Q23-26 otherwise SKIP

23. Thinking of the [Insert Q22] energy workers that you have hired at your location over the last 12 months, please indicate your level of difficulty finding qualified applicants to fill the positions.

1. Very difficult
2. Somewhat difficult
3. Not at all difficult
4. DK/NA

IF Q23 = 1 or 2 ask Q24 and Q25, otherwise SKIP

24. What are the two most significant reasons for the reported difficulty?

25. Please provide the two most difficult positions for your organization to fill at your location. ____

26. You reported [insert Q22] additional workers at your organization over the last 12 months. Of these [insert Q22] positions, how many:

a. Were newly created positions?
   Record # of employees __________

b. Were existing employees that added energy responsibilities?
   Record # of employees __________

c. Were hired to replace workers due to turnover or retirement?
   Record # of employees __________

d. Were positions that required previous work experience related to the position?
   Record # of employees __________
e. Required a bachelors degree or beyond: ________
   Record # of employees ________

f. Required an associate degree or academic certificate from an
   accredited college, but not a bachelors degree: ________
   Record # of employees ________

g. Required a vocational or technical postsecondary certificate or
   credential: _________________
   Record # of employees ________

SECTION 5 – Revenue Questions

Ask Q27 if SGPRIME = 3 or 4

27. Can you name any specific rebates or incentives that can reduce the cost of
   selling, distributing or installing energy for your customers? [Record up to 3]

   Record: ___

ASK Q28 if SE has multiple responses, otherwise SKIP

28. Approximately how much of your organization’s work at your current
   location, in terms of total gross revenue, is related to each of the following
   products or services? (Use numbers to indicate percentages, for instance
   20=20%)

   1. INSERT SE RESPONSE 1 ____%
   2. INSERT SE RESPONSE 2 ____%
   3. INSERT SE RESPONSE 3 ____%
   4. ...
   5. All other revenue not related to energy ____%

Q28 total must equal 100%

SECTION 8 – Technology Specific Questions

ASK Q29 if SDPRIME = 1 & SGPRIME DOES NOT = 5 otherwise SKIP

29. How much of your firm’s work, as a percentage of your total gross energy
   revenue, is attributed to utility projects, including those funded by or owned
   by utilities?

   1. All of it (100%)
   2. Half to most of it (50% to 99%)
3. A quarter to almost half of it (25% to 49%)
4. Less than a quarter (1% to 24%)
5. *(DON'T READ) DK/NA*

ASK Q30 if SDPRIME = 2 and SGPRIME DOES NOT = 5, otherwise SKIP

30. How much of your firm’s work, as a percentage of your total revenue related to transportation and distribution of energy, is attributed to utility grid modernization projects, including those funded by or owned by utilities?

1. All of it (100%)
2. Half to most of it (50% to 99%)
3. A quarter to almost half of it (25% to 49%)
4. Less than a quarter (1% to 24%)
5. *(DON'T READ) DK/NA*

ASK SECTION 6 IF SOLAR=1

**SECTION 6 – Solar Questions**

IF SGPRIME=1, ASK S1

S1. Which solar energy components are manufactured at your location? (select all that apply) [RANDOMIZE]

1. Wafers
2. Cells
3. Modules
4. Inverters
5. Mounting Structures
6. Battery Storage
7. Cables/conduits/wires
8. Monitoring Systems
9. Trackers
10. Other (Specify:______)
11. *(DON'T READ) Not sure*

IF SGPRIME=4, ASK S2 – S8

S2. Does your location install residential, non-residential, community solar, and/or utility-scale solar systems?

a) Residential (installed on a single-family home) Y/N
b) Non-residential (installed on commercial, industrial, agricultural, school, government, and nonprofit buildings) Y/N
c) Community Solar (installations of local solar facilities shared by multiple community subscribers)
   Y/N

d) Utility-scale (installation in which the offtaker of power is a utility-scale or wholesale power market)
   Y/N

S3. How many kilowatts (kW) of solar energy has your location installed over the last 12 months? Installed is defined as a completed installation project and does not include projects that have not yet been completed. (NOTE if respondent answers in megawatts rather than kilowatts, data can be entered as such but please confirm the units the respondent is reporting).

   Record_____kW____MW

IF S2=MULTIPLE RESPONSES, ASK S4 and S5 OTHERWISE SKIP

S4. How many kilowatts (kW) has your location installed in each category? (NOTE if respondent answers in megawatts rather than kilowatts, data can be entered as such but please confirm the units the respondent is reporting).

   [PIPE IN S2 Categories]

   a.) Residential: Record _____kW_____MW
   b.) Non-residential: Record _____kW_____MW
   c.) Community Solar: Record_____kW______MW
   d.) Utility-scale: Record _____kW _____MW

ASK S5 IF S3>0 OR S4a+S4b+S4c+S4d>0, OTHERWISE SKIP

S5. How many of the total (PIPE IN S3 or S4a+S4b+S4c+S4d) (kW or MW) installed over the last 12 months were installed in Minnesota?

   Record_____kW____MW

ASK S6-S8 IF Q10_1+Q10_2+Q13_5>0

S6. Thinking of your [PIPE IN SOLAR EMPLOYMENT] solar employees, please classify them in the following categories. Please count each employee only once and categorize them in the installation area where they spend the most time.

   [PIPE IN S2 Categories]
S7. Thinking of your solar staff working in the field, how many work in the following areas relative to your location?

(Please only assign one category to each employee that supports solar portion of your business. If they fall into more than one category, please assign them to the category in which they devote more of their time.)

a.) In the field as non-electrician installers [Record #] ______

b.) In the field as electrician installers [Record #] ______

c.) In the field on operations and maintenance [Record #] ______

d.) On site evaluation, design, and permitting [Record #]______

e.) On finance, sales, or administrative processes [Record #]_____

S8. Of your solar staff working in the field, please classify them into the area where they spent most of their time over the last 12 months. Please count each employee only once.

a.) In-state within your region/metropolitan area [Record #]______

b.) In-state outside your region/metropolitan area [Record #]______

c.) Out-state [Record #]_____

IF S8c IS > 0, ASK S9

S9. Of the solar staff working out-of-state, do any of those work in Minnesota?

a.) Yes [Record #]________

b.) No

IF S9a>0, ASK S10

S10. Of your solar employees working in Minnesota, please classify them into the area where they spent most of their time over the last 12 months. Please count each employee only once.

a.) Within the seven county Twin Cities metropolitan area [Record #]______

b.) In Greater Minnesota, outside the seven county Twin Cities Metropolitan area [Record #]______

c.) Outside Minnesota [Record #]______

ASK S11 IF S5>0 OR S9>0
S11. What percentage of installation work in Minnesota was performed by non-resident electricians? (Use numbers to indicate percentages, for instance 20=20%):

Record %____________

IF SEC=2, ASK S12

S12. Does your location offer residential, non-residential, and/or utility-scale battery storage systems to be collocated with solar systems?

a.) Residential Y/N
b.) Non-residential Y/N
c.) Utility-scale Y/N

S13. How many kilowatts (kW) of battery storage collocated with solar systems has your location installed over the last 12 months? (Note if respondent answers in megawatts rather than kilowatts, data can be entered as such but please confirm the units the respondent is reporting).

Record _____kW____MW

IF S12 = MULTIPLE RESPONSES, ask S14 and S15 OTHERWISE SKIP

S14. How many kilowatts (kW) of battery storage has your location installed in each category? (NOTE if respondent answers in megawatts rather than kilowatts, data can be entered as such but please confirm the units the respondent is reporting).

[PIPE IN S12 Categories]

a.) Residential: Record _____kW _____MW
b.) Non-residential: Record _____kW _____MW
c.) Utility-scale: Record _____kW _____MW

ASK S15 IF Q12_2>0

S15. Thinking of your [PIPE IN Q12_2 EMPLOYMENT] battery storage employees, please classify them in the following categories. Please count each employee only once and categorize them in the battery storage area where they spend the most time.

[PIPE IN S12 Categories]

a.) Residential: Record ______
b.) Non-residential: Record_______
c.) Utility scale: Record_______
S16. The following is a list of factors that may contribute to difficulty growing a profitable business. Please rate the significance of each factor. [READ ITEM, THEN SAY] is it very significant, somewhat significant, or not at all significant. [RANDOMIZE]

   a. Lack of capital
   b. Lack of qualified talent
   c. Poor demand
   d. Cost or supply of materials
   e. Permitting delays
   f. Interconnection delays
   g. Policy challenges

S17. Please provide any other factors contributing to difficulty growing a profitable business not included above, including any specific policy challenges. __________________________________________

S18. Thinking about your organization's solar related suppliers and vendors, what percent are located (Use numbers to indicate percentages, for instance 20=20%):

   a. In the United States (Enter %)_____
   b. Outside of the United States (Enter %)____ (WEB ONLY SPECIFY COUNTRIES____)
   c. DK/NA

IF S18b>0, ASK S19

S19. What components do you source from suppliers and vendors outside of the United States?

   Record____

S20. Thinking about your organization's solar related customers, are they primarily located:

   1. In-State
   2. In a bordering state but out of state
   3. In the United States, but outside of a bordering state
   4. Outside of the United States (WEB ONLY SPECIFY COUNTRIES ____)
   5. DK/NA

S21: Approximately how much of your organization's work at your current location, in terms of total gross revenue, is related to solar energy?

   Record $:___________
SECTION 7 - Motor Vehicles & Component Parts

ASK Q31 & 32 if SC=7, OTHERWISE SKIP
ASK Q31 IF SF=1

31. Does your firm manufacture products that are intended to help achieve increasing fuel economy standards, such as:
   1. Efficient engines
   2. Drivetrains
   3. Lightweight materials
   4. Low rolling resistant tires
   5. Other (Specify)

32. Of your firm’s gross revenue related to component parts for transportation vehicles, how much is earned from products that increase fuel economy for vehicles?
   1. All of it (100%)
   2. Half to most of it (50% to 99%)
   3. A quarter to almost half of it (25% to 49%)
   4. Less than a quarter (1% to 24%)
   5. (DON’T READ) DK/NA

ASK Q33 if SC = 6, otherwise SKIP

33. With which of the following types of transportation vehicles does your firm primarily design, manufacture, sell, repair, or otherwise work with? [SELECT ONE]
   1. Automobiles
   2. Light Duty Vehicles
   3. Heavy Duty Vehicles
   4. Industrial Vehicles, such as forklifts
   5. Recreational Vehicles, such as golf carts
   6. Rail
   7. Other (specify ________)

ASK Q34-Q36 if SC = 7, otherwise SKIP

34. Does your firm manufacture, design, sell, and/or distribute parts solely used for alternative vehicles, or vehicles with a fuel source other than gasoline or diesel?
   1. Yes
   2. No
   3. Don’t know/ Refused
ASK Q35 IF Q34=1, otherwise SKIP

35. How much of your firm's work, as a percentage of your total revenue, is attributed to parts solely used for alternative vehicles, or vehicles with a fuel source other than gasoline or diesel?

1. All of it (100%)
2. Half to most of it (50% to 99%)
3. A quarter to almost half of it (25% to 49%)
4. Less than a quarter (1% to 24%)
5. (DON'T READ) DK/NA

36. Thinking of the type of fuel used, does your organization offer parts for any of the following types of transportation vehicles? [ALLOW MULTIPLE]

1. Gasoline and Diesel Motor Vehicles (excluding freight transport)
2. Hybrid Electric Vehicles
3. Plug-In Hybrid Vehicles
4. Electric Vehicles
5. Natural Gas Vehicles
6. Hydrogen Vehicles
7. Fuel Cell Vehicles
8. Other (Specify ________)

IF SOLAR=1, ASK S18 & S19

S22. May The Solar Foundation contact you for follow up if needed?

1. Yes
2. No


1. Yes
2. No
Thank you for completing the survey. Since it sometimes becomes necessary for the project manager to confirm responses to certain questions, please verify your contact information.

da. First and Last Name (Interview note enter 99 for REF)
   1. First Name
   2. Last name

db. Position (Interview note enter 99 for REF)
dc. Phone (Interviewer Note 9999999999 for REF)
dd. Email (Interview note enter 99 for REF)
de. Organization Name (Interview note enter 99 for REF)
df. Organization Street Address (Interview note enter 99 for REF)
dg. Organization City (Interview note enter 99 for REF)
dh. Organization State (Interview note enter 99 for REF)
di. Organization Zip (Interviewer Note 99999 for REF)

Thank you very much for your time.

HOW DID THE CALL END?

1. COMPLETED INTERVIEW
2. SURVEY SAID THEY DID NOT QUALIFY
3. CALLBACK NEEDED, PARTIAL
4. REFUSAL
5. SOMETHING ELSE

PLEASE DISPOSITION CALL CORRECTLY.

Thank you for your time.