### I. Data needed

### A. General

- 1. Particular Interests
- 2. User's Initial Investment Budget
- 3. Money spent on electricity usage p/m or p/a?
- 4. Type of property
- 5. Property Size
- 6. Access to steady stream on property

### B. Solar

- Average solar energy available per year
- 2. (get long and lat from API, not in survey)
- 3. Roofing Shingle Material (Cannot put panels on wood-shake roof)
- 4. Roof angles
- 5. Roof direction (slant and direction of slant)

## C. EV

- 1. If drive to work daily
- 2. Distance of commute

### D. Smaller investments

- 1. Smart AC
- Smart Lighting and LED (maybe other smart appliances?)

# II. Corresponding Survey Questions:

## A. General

- 1. Are there any technologies you are interested in? (dropdown and/or search)
- 2. What is the maximum amount of money you are willing to invest?
- 3. Approximately, how much do you spend monthly on electricity?
- 4. Are you shopping for industrial, residential, or commercial sustainable solutions?
- 5. How much land/ freespace do you have on your property?
- 6. (If not zero land) How do you power your lawn care devices? (Gas, Plugged in, Battery Charged, I pay someone else to do it, I don't have a lawn).
- 7. Do you have direct access to a moderately steady stream of water on your property?

## B. Solar

- 1. Please enter your latitude and longitude for us to find your geographic solar potential.
- 2. Is your roofing material compatible with rooftop solar panels? (maybe link an article that would help them make this distinction)
- 3. What is the tilt of your roof?
- 4. What direction does your roof face? (maybe have this question appear if they have a tilt above 0deg)
- C. Transportation (Should only appear for residential customers)

- 1. Do you drive a vehicle?
- 2. If so, do you drive a petroleum, diesel, hybrid, or electric vehicle?
- 3. How far do you travel on a daily basis?
- 4. Do you need a lot of trunk/ truck-bed space?

# D. Smaller Scale Technologies

- 1. On a scale from 1-10, how good are you about turning off your lights and appliances when you are not using them?
- 2. On a scale from 1-10, how good are you about turning off your AC and heating systems when you do not need them?
- 3. Do you have a modern, smart AC & Heating System?
- 4. Do you use LED light bulbs?
- 5. Do you use electric stoves, ovens, and/or fireplaces?
- 6. Have you noticed your windows being poor insulators during extreme weather?

## III. Calculations

### IV. Product Results

### A. General

- 1. Behind the Meter Battery Storage
- 2. Small-scale Wind Turbines
- 3. Pico Hydro

### B. Solar

- 1. Solar tiles- Tesla
- 2. Solar Panel-RoofTop
- 3. Solar Panel-Field (Single Axis Tracking?)

### C. EV

- 1. Tesla
- 2. Nissan Leaf
- 3. Electric Trucks-GMC Hummer EV
  - a) Expected start of production: Second half of 2021
  - b) Battery: Capacity unknown
  - c) Range: 350 miles
  - d) Dazzling technical feature: CrabWalking sideways, thanks to four-wheel steering with all four wheels pointed in the same direction.
  - e) Expected price range: \$79,995 to \$112,595
  - f) Available to private buyers? Yes
  - g) Method of sales: GMC dealerships
- 4. 2nd Tier chargers (230V?) -- they come with 15 hour chargers typically, but these make it 3 or 4 hours (perfect for overnight).
- 5. High end Electric Bicycles (for users with short, Urban commitment distances)

### D. Smaller Tech Investments

- 1. LED Lighting
- 2. Smart Lighting (Amazon Alexa with Alexa app + additional appliances like fans work)
- 3. Smart AC & Heating Control Systems
- 4. Electric Stove, Oven, Fireplace
- 5. Replace windows for better insulation