



CLIMATE CHANGE ADVISORY
COMMITTEE
REGULAR MEETING
MAY 17, 2023
5:30 PM
COUNCIL CONFERENCE ROOM
280 MADISON AVENUE N
+ ZOOM WEBINAR

**THE CLIMATE CHANGE ADVISORY COMMITTEE WILL HOLD THIS MEETING
IN PERSON AND USING A VIRTUAL, ZOOM WEBINAR PLATFORM**

**MEMBERS OF THE PUBLIC WILL BE ABLE TO ATTEND AT
CITY HALL OR CALL IN TO THE ZOOM WEBINAR**

PLEASE CLICK THE LINK BELOW TO JOIN THE WEBINAR:

[HTTPS://BAINBRIDGEWA.ZOOM.US/J/91390380790](https://bainbridgewa.zoom.us/j/91390380790)

OR TELEPHONE: 1-253-215-8782

WEBINAR ID: 913 9038 0790

AGENDA

- 5:30 CALL MEETING TO ORDER/ROLL CALL/ACCEPT OF MODIFY AGENDA/CONFLICT OF INTEREST DISCLOSURE**
- 5:35 APPROVE MINUTES FROM APRIL 19, 2023**
- 5:40 PUBLIC COMMENT**
- 5:45 FOLLOW-UP ON CARBON OFFSET PROJECT (Derik, Jens, Autumn)**
- o 5/9/23 Council Meeting Action: Directed the Climate Change Advisory Committee to make a recommendation to City Council on a project for implementation and funding to offset carbon emissions associated with operation of the new Police/Court building
- 6:00 DEVELOPING A CLIMATE LENS FOR THE COMPREHENSIVE PLAN STEERING COMMITTEE (Mike)**
- 6:15 HEAT PUMP PILOT PROGRAM UPDATE (Kevin, Steve, Autumn)**
- 6:30 CLIMATE MANAGER UPDATE**
- o Developing a subgroup to work on development of a community ordinance regarding gas-powered hand tools
 - o Community outreach – committee interest in developing/scheduling a climate-themed trivia night?
 - o General Climate Mitigation & Adaptation Manager updates
- 7:00 UPDATES**
- o Electric Vehicle & Bike Expo this Saturday, May 20th (Mike)
 - o June 21st meeting (Kevin, Autumn)
 - o Latest on ETIPP
 - o Latest on Fehr & Peers
 - o Other
- 7:30 ADJOURN**

Climate Change Advisory Committee
April 19, 2023
Action Minutes

Meeting called to order at 5:33 PM by Kevin Thomas

Roll call: Mike Cox, Kevin Thomas, Julie Matthews, Derek Broekhoff, Jens Boemer, and John Kydd. Council Liaison Leslie Schneider. Climate Mitigation and Adaptation Manager Autumn Salamack.

Agenda modified to prioritize the following for the meeting.

- Police/Court Building Offsets
- Draft City Council Proclamation for Kitsap EV and Bike Expo
- Updates from Climate Officer
- Heat Pump Pilot Project

Julie moves to approve the minutes. Mike seconds. Minutes approved.

Police/Court Building Offsets

- Derik provided an overview of the analysis
- need final report to Autumn by Friday April 28th for May 9th Council Meeting

Action Item: Get comments to Derik/Jens/David as soon as possible

Draft City Council Proclamation for Kitsap EV and Bike Expo

- Proclamation was passed with two minor edits

Action Item: Proclamation will be presented to Council at the May 9th Council meeting

GW Management Plan subcommittee

- Autumn asked for volunteers to serve on groundwater management plan subcommittee

Action Item: Mike Cox volunteered to be on subcommittee.

Volunteer Appreciation

- Autumn acknowledged the great work of committee members and provided certificates of appreciation

ETIPP

- May 31st site visit
- asked for suggestions for areas for microgrids
- suggested Emergency Preparedness hubs or Winslow and Service Centers

Fehr and Peers Study

- They will be presenting recommendations to the Council at the May 16th City Council Study Session.

Earth Day

- Jens and Julie will be helping Autumn at the Saturday April 22nd Earth Day event at Battlepoint Park

Waste Reduction

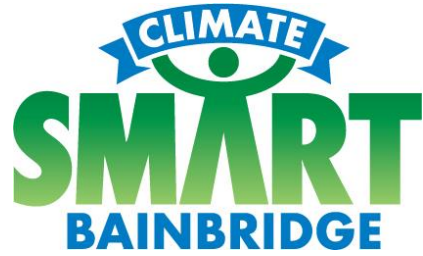
- eliminated the 25-cent charge for cups

Heat Pump Pilot

- Autumn has been working with Kevin, Steve, and David on developing an outline for the heat pump pilot program

Action Item: Get comments to Autumn as soon as possible

The meeting was adjourned at 6:28 because there was no quorum.



Carbon Offset Project Options for the New Police/Court Facility

May 9, 2023

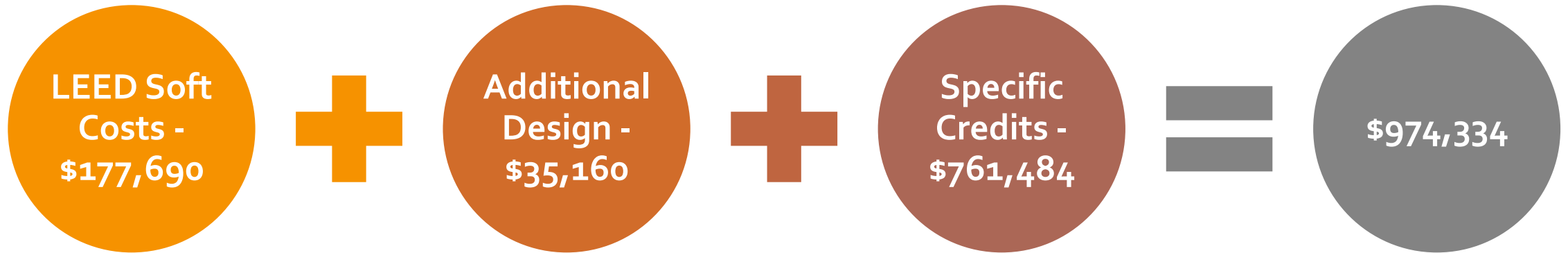
Autumn Salamack

Climate Mitigation & Adaptation Manager

Overview: Carbon Offset Options for the New Police/Court Building

- 2020 LEED Silver Certification analysis
- Updated 2023 analysis from staff and CCAC
- Potential Council action:
 - Direct CCAC to make a recommendation on a preferred carbon offset project (or projects)

LEED Silver Certification: Estimated Costs in 2020 Analysis



Carbon Emissions to Offset (no LEED Silver Certification)

- Original estimate:
 - 64 metric tons of carbon dioxide equivalent (CO₂e) per year
 - 960 metric tons over 15 years
- Updated estimate (using PSE's projected decline in grid emission factors):
 - Average 13 metric tons of CO₂e per year
 - 274 metric tons over 21 years
 - Thru 2045 when PSE's grid is carbon neutral

CETA Requirements



Original Offset Options (2020)

Install 120 kW photovoltaic system elsewhere on Bainbridge Island

- 8,500 Square Feet
- At \$3 installed watt = \$360,000 installation cost
- Estimated generation of 139,200 kWh per year
- Offset ~ 64 tons CO₂e/year



Original Offset Options (2020)

Purchase carbon off-sets that support wind power in the PNW

- Offset ~ 64 tons CO₂e/year
- ~ \$177.50
- Operating life of system of 20 years = \$3,550 in carbon offsets



Image from PSEbainbridge.com

2023 Carbon Offset Options Evaluated

- A. Install 25 kW photovoltaic system on the Police/Court building roof
- B. Install 120 kW photovoltaic system somewhere on Bainbridge Island
- C. Upgrade home heating systems to heat pumps
- D. Install 8 kW solar systems on private property roofs
- E. Replace gasoline lawn mowers with electric mowers

Key Criteria for Evaluation

Additionality

Level of uncertainty

Range of estimated CO₂e
emissions avoided over the
lifetime of the proposed project

Range of estimated costs
associated with the project

2023 Offset Options – Option A

Install 25 kW photovoltaic system on the Police/Court building roof



Additionality	Yes, if PSE will not count the electricity generated by the panels towards its statewide renewable energy goals
Level of Uncertainty	Low
Estimated range of offset	~45 to 72 tons CO ₂ e*
Estimated cost	\$90,000

**Would need to be combined with another option for lifetime savings required for offset.*

2023 Offset Options – Option B

Install 120 kW photovoltaic system somewhere on Bainbridge Island (not City property)



Additionality	Yes, if PSE will not count the electricity generated by the panels towards its statewide renewable energy goals
Level of Uncertainty	Low
Estimated range of offset	~215 to 348 tons CO ₂ e
Estimated cost	\$600,000

2023 Offset Options – Option C

Upgrade home heating systems to heat pumps



Additionality	Hard to guarantee
Level of Uncertainty	Medium
Estimated range of offset	~10 tons CO2e per upgrade ○ Requires 27 upgrades
Estimated cost	\$10,000-15,000 per upgrade ○ \$270,000-405,000 total

2023 Offset Options – Option D

Install 8 kW solar systems on roofs (on private property)



Image from PSE.com

Additionality	Hard to guarantee
Level of Uncertainty	Low
Estimated range of offset	~14 to 23 tons CO ₂ e ○ Requires 12-19 upgrades for total carbon offset
Estimated cost	\$25,000 per property ○ \$300,000 – 475,000

2023 Offset Options – Option E

Replace gasoline lawn mowers with electric mowers



Image from Lowes.com

Additionality	Yes (if done soon)
Level of Uncertainty	High
Estimated range of offset	~25 tons CO2e for 5 years only, assuming heavy usage* ○ Old gas mowers must be scrapped
Estimated cost	\$250 per mower

**Would need to be combined with another option for lifetime savings required for offset.*

Decision Point

Move to have the Climate Change Advisory Committee make a recommendation to City Council on a carbon offset project for implementation.



Climate Lens for Comprehensive Plan Steering Committee

5/9/23

At the April 25, 2023 Council Meeting, Council Adopted [Resolution No. 2023-03](#) Establishing a Steering Committee to Provide Oversight on the Winslow Subarea Plan Update and the Comprehensive Plan Periodic Review. This committee consists of three members of the City Council and three members of the Planning Commission and was formed to provide oversight of the Winslow Subarea Update and the Comprehensive Plan periodic review. Part of this committee's oversight role and purpose is to: "Apply an equity lens consistent with the Government Alliance on Race and Equity's (GARE) Racial Equity Assessment and climate lens to all project work, activities, and outcomes."

Staff developed the draft lens below earlier this year for review and consideration by CCAC members as a guiding document to present to the Steering Committee. Questions for CCAC members:

- Are these the right questions to share with the Steering Committee? If not, what questions would you recommend be included?
- Would a CCAC member be interested in attending a Steering Committee meeting to present this tool for their consideration?

Climate Lens for City Projects: 2023 Pilot Project (DRAFT)

4/21/23

Pilot Project Overview

The City proposes to test a simple tool for use by all staff in developing new projects, programs and policies to ensure that climate change is considered. The tool is designed to provide a preliminary, qualitative understanding of whether a municipal decision will:

- affect climate change (through the production of green house gases) or
- be affected by climate change (through increased exposure to temperature, precipitation or sea level rise).

The goal is to have this tool available for staff use in 2023 with testing by City staff throughout the year. At the end of the year, staff will review use of the tool for continued application and/or the potential to develop/advertise for a more robust tool to incorporate climate change in all City projects and decisions.

To ensure this tool can be readily used by City staff, it must:

- Be easy to use
- Be available for use by staff with little or no knowledge of climate change
- Quick to use (taking 15 minutes or less to complete)
- Require little interpretation
- Require little assistance
- Identify a staff-person who can provide assistance where needed (i.e., the Climate Officer)
- Use data that is readily available or obtainable

Draft Tool Overview

This tool is designed to:

- Help staff consider climate change in all projects
- Help analyze if a decision could contribute to/mitigate climate change
- Help analyze if a decision could be affected by climate change impacts

This tool will not:

- Estimate emissions associated with a decision
- Estimate vulnerability to climate change impacts
- Provide specific direction on next steps for individual projects

Questions to be asked with this tool:

1. Briefly describe the project.
2. Will this project result in the production of greenhouse gases (GHGs)? For example, will it result in electricity/gas use, vehicle fuel use, waste generation, etc.?
 - a. If yes, what steps can be taken to mitigate those emissions?
3. Will the project be modified to reduce GHGs? For example, will steps be taken to reduce building energy use, vehicle fuel use, vehicle miles traveled, waste generation, etc.?
 - a. If yes, please explain.
 - b. If no, why not?
4. Can this project be affected by temperature, precipitation or sea level rise?
 - a. If yes: user directed towards related questions for each applicable topic (see below)

Temperature

- Could the project be impacted by increased temperatures associated with climate change?
 - o If yes, what steps could be taken to reduce that future impact?
- Does the project lead to a reduction in temperature-related exposure?
 - o Examples: outdoor shade (i.e., tree canopy, built structures), indoor climate control (i.e., air conditioning, geothermal), heat island abatement (i.e., white roof, green roof), infrastructure/green infrastructure, human health and vulnerable populations (i.e., programs), agriculture and economy (i.e., experimental crops)
- Could the project be modified to reduce temperature-related exposure?
 - o If yes, through what means? Can this be quantified?
- Will the project be modified to reduce temperature-related exposure?
 - o If yes, please explain.
 - o If no, why not?

Precipitation

- Could the project be impacted by increased precipitation and high intensity storm events associated with climate change?
 - o If yes, what steps could be taken to reduce that future impact?
 - Does the project lead to a reduction in precipitation-related exposure?
-

- o Examples: natural features and processes (i.e., wetland, naturalized structures), urban storm/flood management, infrastructure/green infrastructure, human health and vulnerable populations, agriculture and economy
- Could the project be modified to reduce precipitation-related exposure?
 - o If yes, through what means? Can this be quantified?
- Will the project be modified to reduce precipitation-related exposure?
 - o If no, why not?

Sea Level Rise

- Could the project be impacted by future sea level rise?
 - o If yes, what steps could be taken to reduce that future impact?
- Does the project lead to a reduction in sea level rise-related exposure?
 - o Examples: natural features and processes, infrastructure/green infrastructure, others (TBD)
- Could the project be modified to reduce exposure to sea level rise?
 - o If yes, through what means? Can this be quantified?
- Will the project be modified to reduce exposure to sea level rise?
 - o If yes, please explain.
 - o If no, why not?

When to use the tool:

Applicable

- Substantial reports (including development of major plans for the City)
- Major projects, studies, policies, initiatives
- Major RFPs

Not Applicable

- Routine reports
- Administrative, litigation, legislated reporting, personnel matters, day-to-day operational matters, basic information reports

Next Steps:

- Refine questions in tool and format (web-based survey for staff to use w/built-in decision matrix directing them to the next set of questions?)
 - o Include equity questions in same tool?
 - Outline process for use of tool
 - Develop process for ensuring tool is used
 - o Identify specific decisions/projects that could be used to test the tool
 - o Provide staff training on when/how to use the tool
 - o Develop staff resources (on City intranet page) to support use of the tool
 - Develop form for staff to submit tool feedback to Climate Officer
 - End of 2024: identify next steps for potentially more robust option for considering climate change in City projects and decisions
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DRAFT OUTLINE – COMMUNITY HEAT PUMP PILOT PROGRAM

April 13, 2023

Goal of Pilot Program:

- Educate the community about the benefits of heat pumps and encourage them to upgrade their heating systems.
- Pay for partial or full costs associated with upgrades for a limited number of properties.
- Use pilot program to:
 - o Identify what current demand is for this type of program.
 - o Determine costs, ease of implementation, etc. associated with converting to heat pumps in different types of housing/working with different heating systems.
 - o Identify current, local contractor capacity and skill set for completing this work.
 - o Obtain case studies that can be used to provide additional community education and inform future program development.
 - o Create a proposal for an extended program – determine if additional funding and/or education, or a different program format, is needed to convert more homes to heat pumps (*pilot- w/limited scope and concept is prove out the concept, help a few people get systems, get data – then adjust educational materials, etc. to see what we really need*)

Audience for Pilot Program:

- Educational webinars – everyone
- Funding for installation:
 - o Homeowners on Bainbridge Island (priority focus on lower income homeowners, 80% AMI)
 - o Talk with Housing Authority about potential interest in targeting a limited number of rentals for participation?

Outline for Pilot Program:

1. Provide education for community regarding benefits of heat pumps and how to swap out your existing heating equipment
 - a. Likely 1-4 webinars over a 3-month period
2. Provide funding to help a limited number of homes convert to heat pumps
 - a. Applications would be accepted over a 2–3-month period
 - b. Funding would be income-based (targeting lower income homeowners and providing more money to those with lower incomes)
 - i. Tier 1 – 100% of costs covered (or up to some \$) for income-qualified people
 - ii. Tier 2 - \$XX in incentives for non-income qualified people
 - iii. Align with IRA incentives (build upon those)
 - c. Soliciting applications from a variety of housing types, sizes, heating system types, etc. (see questions below)
3. Format for program: we provide extensive education on heat pumps and IRA funding opportunities along with:
 - a. Contractor(s) to provide home energy assessments as pre-condition of heat pump installation (i.e., make sure home are weatherized, have good insulation, etc. if possible)
 - b. List of contractors who can install heat pumps (easiest would be to provide a list that residents can select from)
 - c. Rebate to offset out-of-pocket cost for heat pump installation (could be larger amount based on income level) OR we contract directly with a contractor and pay them to do

the upgrade so there's no out of pocket expense for the homeowner (if income qualified)

Proposed Process

- City contracts with organization to administer program. Role of program administrator:
 - o Administer application process
 - o Complete site assessment
 - o Connect applicants to contractors (and identifying/partnering with contractors)
 - o Facilitate payments to contractors
 - o Gather and track pre- and post-installation data
 - o Create case studies
- Process for community members:
 - o Attend webinar (could be provided by CCAC/Rewiring America and not as part of program administrator duties)
 - o Submit application
 - o Receive site assessment
 - o If deemed a viable candidate, sign agreement and get equipment installed (and/or apply for rebate)

Proposed criteria for evaluating applications:

- Income (would like to offer more/prioritize lower income homeowners)
- Current heating system type
- Age of home (older homes likely to have less efficient heating systems)
- Housing type/size/# of stories
- Household size (# of people)
- Location (aiming for some geographic distribution if possible)
- Willingness to complete PSE home energy assessment (online process)
- Willingness to participate in data collection program (pre- and post-equipment installation)
 - o *This is a pilot and we'll be seeking/requiring feedback (must be on board with that element for pre- and post-participation): electricity use/cost data (comfort) for a year out (verify that there were some savings) – would that be something that could be built into the program administrator contract or would that be something that the City could receive and track at that one year mark?*

Potential Partners

- PSE – encourage (or require) people to complete their online home energy assessment as part of program; look at how we could work with them to identify contractors, heat pump equipment, etc. to facilitate ease of implementation (and any additional incentives they can provide for participants to either help cover the cost of the equipment and/or weatherize homes?)
- Senior Center – do survey with members to gauge current income levels, current heating systems, interest in program, etc.
- Local HVAC contractors – reach out early to see if they are interested in this type of program, how we could set it up to facilitate their participation, etc.
- Housing Resources Bainbridge – potential to target a few rental properties or homes for lower income residents?
- Kitsap Community Resources – potential to work with them to route eligible residents into their [weatherization program](#) to make homes more efficient and comfortable prior to heat pump installations?

From David - Draft list of qualifying questions to be asked in application process for heat pump pilot program:

1. Would you be interested in participating in a three-year survey and study related to of the conversion existing residential heating systems to high efficiency heat pump technology?
2. The existing system types are defined as the primary heating source for a residential home, must be one of the following; propane, fuel oil, wood stove, or resistance baseboard heaters. Which of these system types is your primary heating source in the home?
 - Propane
 - Fuel oil
 - Wood stove
 - Electric baseboard heaters
3. As a participant in the pilot, it is the expectation that the existing heating system would be decommissioned and removed after the successful installation of the heat pump technology, would you consent to this were you selected to be involved in the pilot program?
4. Would you be willing to provide both historic and future electricity values and consumption data for the purposes of this study?
5. Can you provide basic building information, for example the year built, number of floors, square footage, basic system design and fuel type, existing wall and ceiling insulation types and or values?
6. Would you accept a physical preliminary audit of your home to verify this and other information as deemed necessary to qualify?
7. Are you willing to work with a program administrator during the preliminary assessment as well as implementation of the new technology buy a certified installer?
8. Income level verification would be required has this applies to various rebates and incentives included in this pilot, are you willing to furnish that information?

PSE HOME ENERGY ASSESSMENT QUESTIONS

PSE offers a quick and convenient 3-step process to help you understand and control your home's energy usage.

1. Start by completing an [online assessment](#) to determine how energy is used in your home. This should take about 5 to 7 minutes to complete.
2. Next, review the relevant insights and suggested [ways to save](#) as a result of your online energy assessment.
3. Finally, measure and monitor the impact of changes you make on your overall energy usage by reviewing [usage graphs](#) within your myPSE account.

PSE Assessment Questions (text in red added by staff):

- How many people live in your home?
- What type of home do you live in?
 - o Single-family, Apartment/Condo
- Do you own your home?
- When was your home built?
 - o Before 1990, 1990 or after
- What's the size of your home (square feet)?
- Do you heat your home in the winter?

- What's the primary way you heat your home?
 - o Electric baseboard heaters, electric space heaters, boiler with radiators, **propane stove**, central heat pump with air vents, **wood stove**, something else
- What type of fuel does your heating system use?
 - o Electricity, propane, **Fuel oil/Diesel**, **Wood**, something else
- How old is your heating system?
 - o 0-4 years, 5-10 years, 11+ years
- When was the last time your heating system was serviced?
 - o Less than 2 years ago, 2 or more years ago
- Do you use a wood fireplace?
- Do you have a smart/web enabled thermostat?
- In the winter, where do you set your thermostat when you're home?
- How often do you turn down the heat when you're away from home or asleep?
- Which of the following have air leaks in your home?
 - o Windows, doors, walls
- Do you use air conditioning in the summer?
- What is the primary way you cool your home?
 - o Central AC, central heat pump, room air conditioner, room heat pump, something else
- How often do you use AC in the summer?
- When you're home in the summer, where do you set your thermostat?
- How often do you turn down your AC when you're away from home or asleep?
- What type of water heater do you have?
 - o Conventional storage tank, tankless, heat pump, something else, I'm not billed for it
- What type of fuel does your water heater use?
 - o Electricity, solar, **propane**, something else.
- What portion of your indoor light bulbs are energy efficient (like CFLs or LEDs)?
- Do you turn off lights when nobody is in the room?
- When do you use outdoor lights?
- Which of the following do you use in your home?
 - o Clothes washer/dryer, dishwasher, stand-alone freezer, stove/cooktop, oven, dehumidifier, air purifier, second refrigerator, mini refrigerator
- How often do you use your clothes washer/dryer/dishwasher?
- What type of fuel does your oven use?
 - o Electricity, **propane**, something else
- Which of the following do you use in your home (**long list of electronics**)?
- In a typical day, how often is your TV on?
- Do you own a pool?
- Do you have a backup energy source (battery, generator, etc.)?
- What is your backup energy source (battery, generator, etc.) that you have?
 - o Electric battery backup system, permanent or fixed natural gas/propane powered generator, portable generator
- Do you own or lease a plug-in electric vehicle?
- How many plug-in EVs do you own or lease?
- How often do you charge your EV at home?
- Do you use a level 1 or level 2 charging station when you charge at home?
- How many miles (round trip) do you commute each day in your EV?
- How long have you owned or leased an EV?