

# HOW TO REDUCE YOUR CARBON FOOTPRINT AND SAVE MONEY ON HOME ENERGY USE

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LMCCE CLASS

OCTOBER 4, 2021



# PURPOSE

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## Inform You Of Options So You Can:

- Save \$ on your Con Ed bills
- Help your home and our community be healthier, cleaner, and greener
- Do your little bit to address the Climate Change problem of our Planet

# CLIMATE CHANGE IS REAL AND AFFECTING US!

- Temperature rise: 1.8<sup>0</sup>F; expected to rise another 4-11<sup>0</sup>F by 2100
- If this continues, there will be long-term effects on:
  - Our climate (more severe weather)
  - Our ecosystems and oceans,
  - Our health (diseases), and
  - Our markets (availability of crops, tourism, insurance, fuel availability)



# IDA - AFFECTING LARCHMONT/MAMARONECK



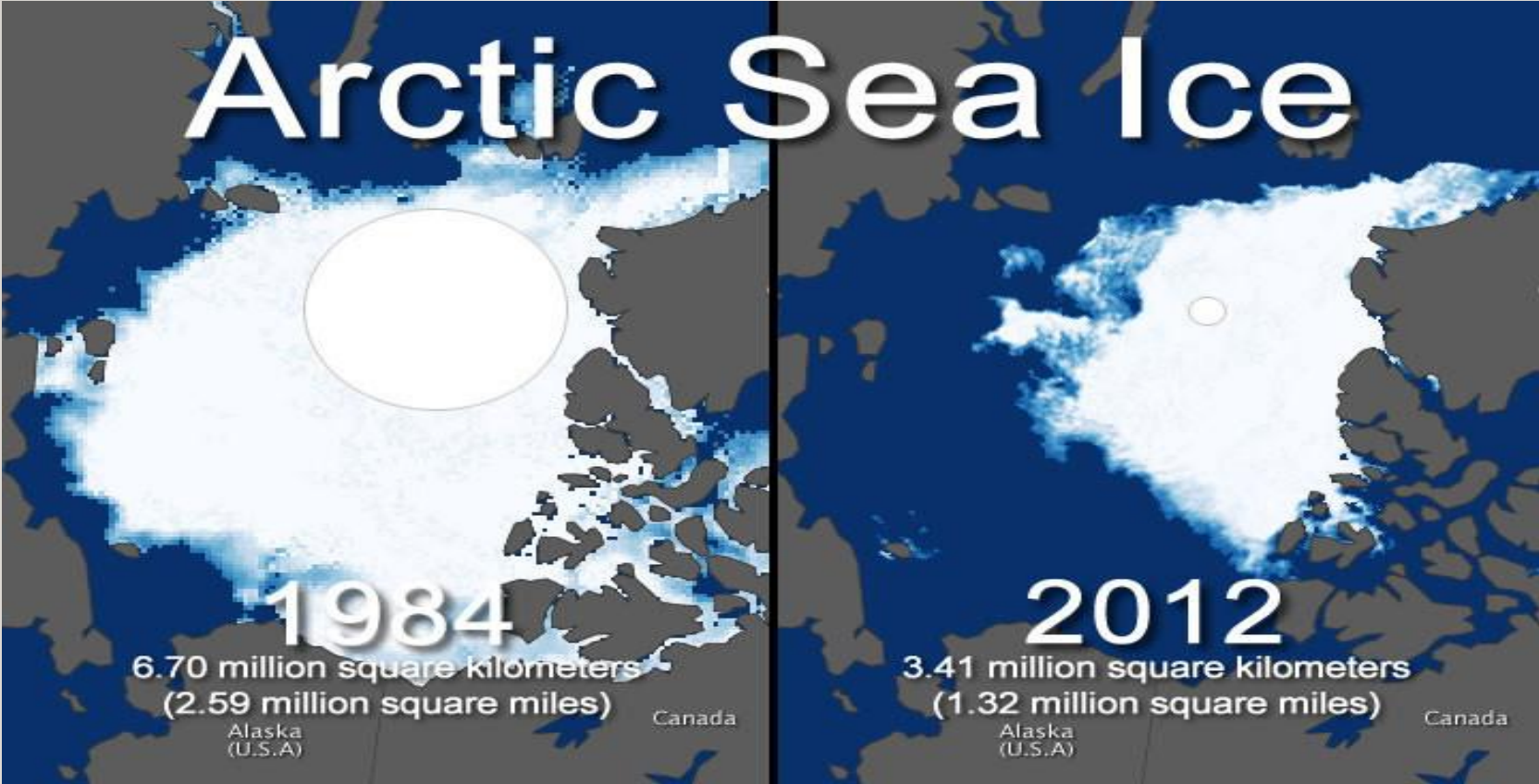
# OK, SO WHAT IS CAUSING CLIMATE CHANGE?

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- Greenhouse gases (GHGs) contribute to the temperature rise.
- CO<sub>2</sub>, the end-product of fuel combustion, is the most common GHG.
- Temperature rise correlates with the rise of GHGs in our atmosphere and our increased use of fossil fuels
- Unanimity: human-caused GHG emissions contributes significantly to Climate Change crisis.



# THE ARCTIC IS MELTING



# SO, WHAT DO WE HAVE TO DO?

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- We must **reduce the quantity of GHGs we cause to enter the atmosphere**
- If we fail, we may reach a “tipping point” – point of no return!
- To reduce GHG emissions, **we all must do our part.**
  - But realize there are major benefits we get for doing our part

# HOW CAN WE REDUCE GHG EMISSIONS?

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3 ways:

1. **Be more energy efficient** – do what you do using less energy
  2. **Use “cleaner” fuels** – energy from sources that emit less GHGs
  3. **Support renewable energy** – energy from sources not using fossil fuels: the sun, wind, geothermal.
- And you know what’s great about this? **It will also help your bottomline!**
  - This talk will introduce you to some options to consider



# WHY BE ENERGY EFFICIENT?

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- **Save you money.** The less energy you use, the less \$ you pay Con Ed (or your oil supplier). Good, right? Cost savings for many years.
- **Make our community healthier.** Lower fuel usage lowers not only GHG emissions, but also those of other compounds directly toxic to our health.
- **Re-brand our area as “green”.** Raise pride, interest, and property values.
- **Feel Good. Spiritual.** It’s what we should do. “Of David. A psalm. The Earth is the LORD’s and all that it holds, ...” Psalms 24:1

# YOU CAN DO IT AND IT WILL HELP YOUR BOTTOMLINE, TOO

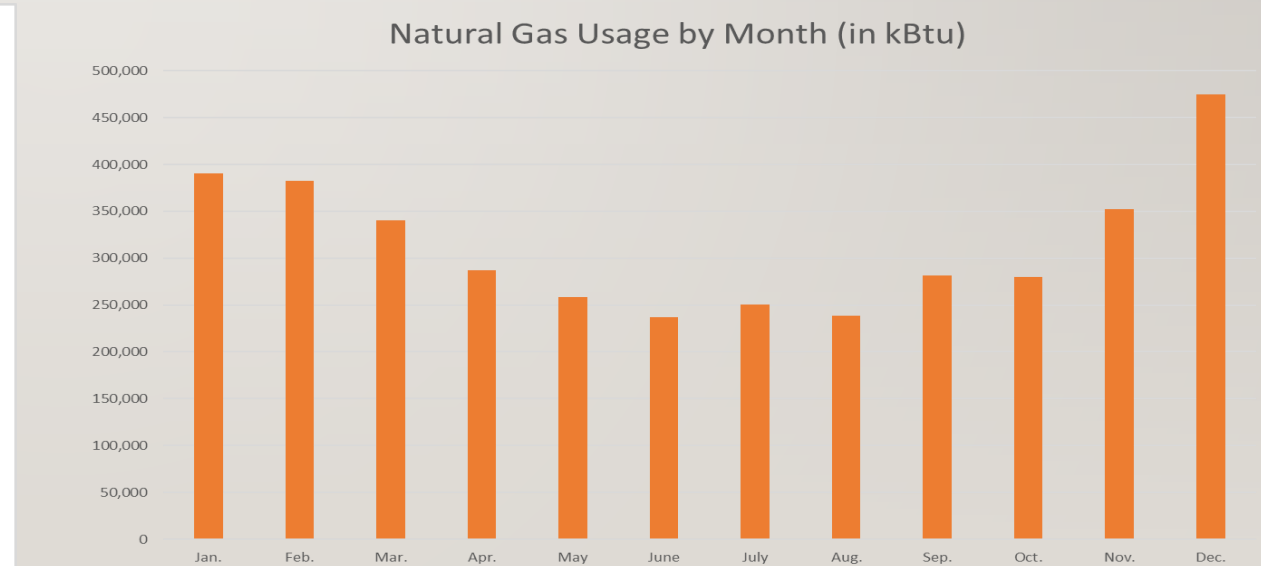
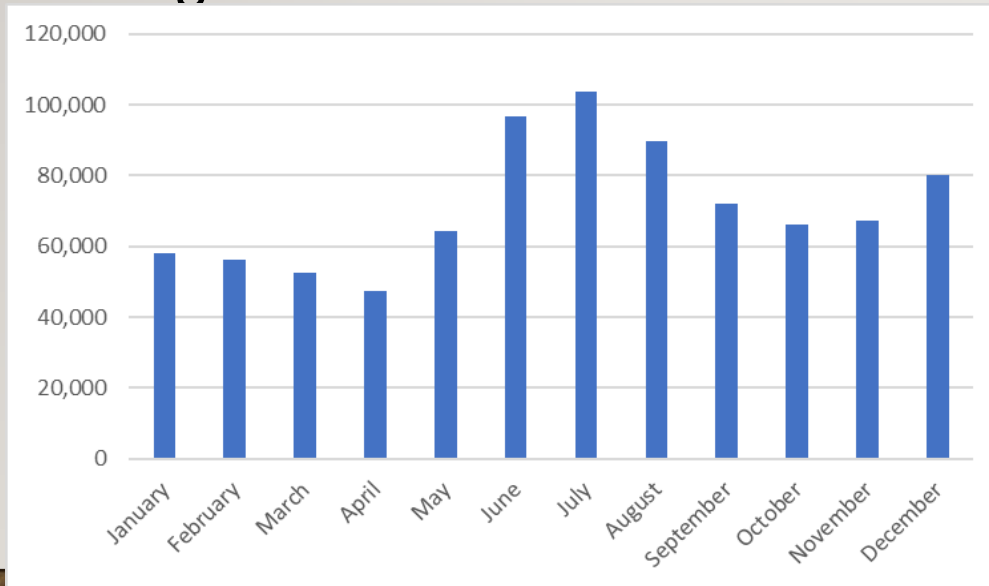
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- **See the options.** You don't have to do all of them or all at once. See what's right for your home, your family.
- **Some options may cost something.** But the savings in your Con Ed or oil bills will pay it back and more in time!
- **Research.** Learn more about the strategies. Talk to experts; talk to friends who've done any of them. Check multiple sources.
- **Think long-term.** Your upgrades are not going to change the world or your family overnight. But in the long-term, you'll have done good!

# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***CHART YOUR ENERGY USAGE***

- Look at your own Con Ed bills. Gather 1 year of bills.
- Your charges are divided into two parts for each: supply and delivery.
- Catalog your annual electricity and gas usage. Your baseline. Does it change with the summer and winter season?



# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***ENERGY SUPPLY***

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- You have the option to pick who supplies your electricity and natural gas. **YOU!**
- Our local municipalities have taken steps on our behalf to supply us with clean energy.
  - **Community Choice Aggregation.** 100% renewable energy for households in our 3 communities (Westchester Power). Any family can opt out.

**Tip: Woo-hoo. Our municipalities have arranged for us all to get 100% renewable energy.**



# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***ENERGY AUDIT***

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- Consider having a professional evaluation performed to analyze your home's performance and see where you may be wasting energy.
- There should be a cost involved, and there is no guarantee that huge savings can be found. But you'll learn a lot about your home.
- Make sure the auditor is experienced.

**Tip: The New York State agency, NYSERDA, has useful information about energy audits at:**

**<https://www.nyserda.ny.gov/Residents-and-Homeowners/At-Home/Home-Energy-Audits-and-Ratings>**



# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS *LIGHTING*

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- Can you remove lights (do you have overlit rooms)?
- Are lights turned off in empty rooms?
- Energy efficient lights
  - LEDs give off more light yet use less than  $\frac{1}{2}$  the electricity of standard lights.
  - LEDs last longer than standard lights (fewer replacements) and reduce AC usage.

**Tip: Don't wait for old lights to die. It's worth it to upgrade lights to LEDs soon!**



# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS “*PLUG LOAD*”

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- Home “stuff” (refrigerators, freezers, microwaves, laundry, PCs, printers, TVs, etc.). Modern? Efficient? Operate well?
- **EnergyStar Program – [www.energystar.gov](http://www.energystar.gov)**
  - Items with the EnergyStar label use 20-30% less energy. Look for it – no, insist on it – when you shop!
  - Just buy it! You don’t have to do anything!
- **Tip: Don’t worry. EnergyStar fridge may cost \$50 more than average one. But you’ll save that in lower Con Ed bills in months. Given lifetime, that’s lots of “gravy”.**



# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## *REPAIR CAFE*

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- **More about home “stuff” (refrigerators, freezers, microwaves, laundry, PCs, printers, TVs).**
  - Change the “It’s broken; throw it out, buy something new” mentality.
- **Repair Café at Mamaroneck Senior Center: Sat., Oct. 16, 12 noon**
  - Bring in “stuff” that is no longer working
  - Friendly neighbors will try to fix it for you (no guarantee) so that it lasts longer and is not thrown out.
- **And it’s FREE!**

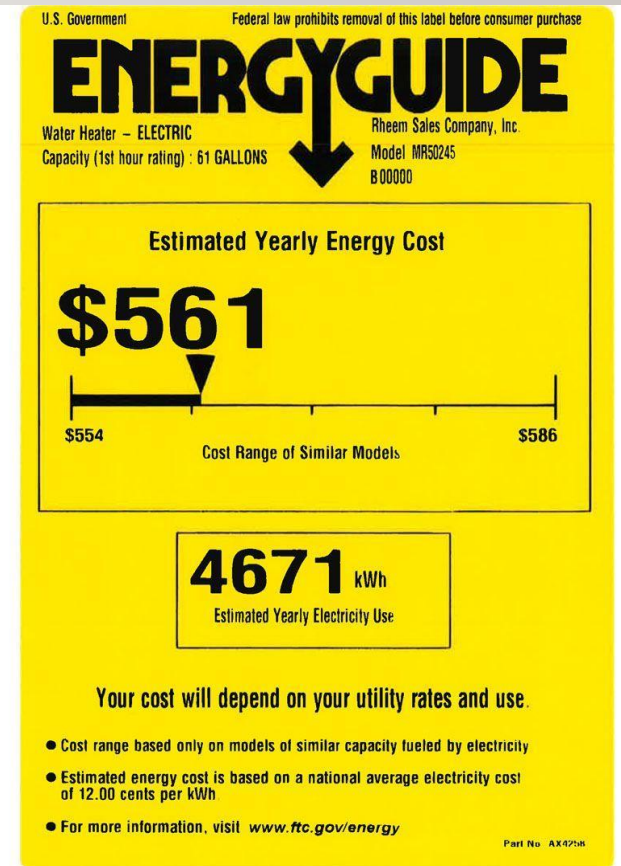




# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## *HVAC*

- **Boilers, air conditioning.** Modern? Efficient? Operate well?
  - Is your equipment serviced regularly and properly?
  - Are temperature controls appropriate? Working?
    - Consider “Smart” thermostats from Con Ed
  - Need to replace/modernize? Check EnergyGuide, Energy Star
- **Tip: When replacing a boiler or AC, have a professional ensure that the new equipment is not only efficient, but right-sized, too.**



# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS *YOUR HOME'S ENVELOPE*

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- Keep the heated or cooled air from escaping.
- Are there areas of obvious loss? Focus on attic and roof.
- Review your home's "envelope." Have an assessment of areas that can use more or new insulation or windows.
- Insulate pipes leading from boiler and hot water heater.

**Tip: Another way to reduce the need for cooling is to plant and conserve more trees.**



# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## *HEAT PUMPS*

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- What is a heat pump? It moves heat from one place to another to heat or cool an area. Moving heat uses less energy than burning a fuel.
- Get rid of fuel combustion (and oil storage) in your home.
- Air, water, or ground-based systems.

**Tip: Do your research. Speak to an experienced dealer / installer. New York State offers significant financial incentives to install heat pumps.**



# SIMPLE THINGS TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS *RENEWABLE POWER*

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- Electricity from natural sources: solar, wind, geothermal – not from the grid
- Why?
  - Electricity from renewable sources will save you \$\$ compared to grid electric.
  - GHG emissions: zero.
  - Large financial incentives, tax breaks.
- **Tip: Check your roof. Contact a local solar company and have a viability analysis done free of charge without a visit. If viable, get multiple bids.**



# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***COMMUNITY SOLAR***

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- If you can't host solar panels, you can sponsor them for others.
- Get a 10% discount on your electricity bill AND
- Help a housing complex or organization get solar for themselves.

<https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Home/Community-Solar>

<https://sustainablewestchester.org/solar/>

# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***REDUCE YOUR SUMMER PEAK DEMAND***

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- The biggest stress on our electric grid is in the summer, when “everyone” has their A/C units on and drawing the most power.
- Has led to power stresses in Westchester and brownouts in NYC
- Reducing electricity usage from 1 – 6 pm on hot, humid days will help our region’s electric grid stay reliable.

**Tip: Consider GridRewards program of Sustainable Westchester. Free app, lets you know upcoming peak demand periods. Voluntary. If you successfully reduce electric usage during those periods, Con Ed will send you a check.**

**[bizdev@sustainablewestchester.org](mailto:bizdev@sustainablewestchester.org)**

# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***ELECTRIC VEHICLES (EV)***

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- Electric cars means no gasoline purchases nor combustion.
- Cleaner air for us all to breathe locally and less GHG emissions.
- Hurray! All 3 local municipalities see the movement toward EVs and have installed EV charging stations and wish to install more. Let our leaders know we need more charging stations.

**Tip: Look into plug-in hybrids, that give you both electric power for your car with gasoline backup.**



# SIMPLE THINGS YOU CAN DO TO REDUCE YOUR ENERGY WASTE AND SAVE COSTS

## ***HOW ABOUT NO CARS?!***

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- Ditch the car from time to time by biking or walking more.
- For local errands or restaurants, ask: “Do I really need to drive there?”
- Good for your health.
- No gasoline combustion at all and no GHGs.
- Fun! Togetherness! Health!
- Support more safe bicycle paths and places for bicycle parking.



# AND HERE'S SOME GOOD NEWS: HAVE SOMEONE ELSE PAY PART OF THE COST OF THESE UPGRADES!

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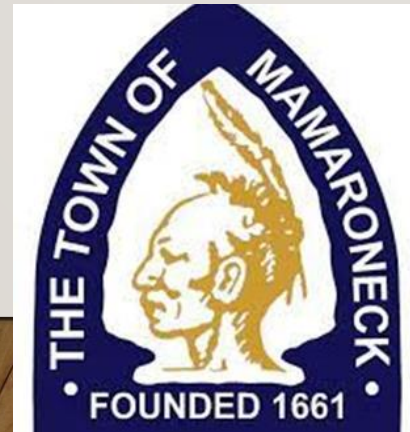
- OK. OK. I know. You want to do good but you have to shell out some \$. Nobody likes that! Remember these strategies allow you to recover the initial outlay and more!
- Believe it or not, NY State & Con Ed want you to upgrade and will pay you back part of the upfront cost, if you qualify! Really!
  - <https://www.nyserda.ny.gov/All-Programs/Programs/Residential-Financing-Options>
  - <https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers>



# AND YOUR NEIGHBORS ARE HERE TO HELP!

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- The municipalities in our community want to help everyone be more energy efficient and move toward cleaner fuels, renewable power, and less driving.
  - All 3 area municipalities have environmental or sustainability committees. Visit one! Learn; meet neighbors; contribute to making our lives healthier, greener, cleaner.
  - ToM "What residents can do about climate change":  
<https://www.townofmamaroneckny.org/DocumentCenter/View/556>
  - Sustainable Westchester: <https://sustainablewestchester.org/>



# SUMMARY CHART OF ENERGY SAVING OPTIONS

Option	Initial Cost	Savings	Work/Change
Lighting - LEDs	Low	Moderate	Very little
Plug Load -ENERGY STAR	Low	Moderate	None
HVAC	High	Moderate - High	High
Building Envelope	High	Moderate - High	High
Heat Pumps	High	Moderate	High
Renewable Energy	Moderate	High	Moderate
Electric Cars	High	High	Moderate
Bikes/Walking	Low	Moderate	High

# SUMMARY CHART OF MUNICIPAL OPTIONS

Option	Initial Cost	Savings	Work/Change
<b>Westchester Power from Sustainable Westchester 100% Renewable Energy</b>	None and automatic for ToM, VoM, VoL residents	Competitive rates negotiated on behalf of 28 Westchester municipalities	None
<b>Grid Rewards™</b>	No initial cost	Refunds based on usage reductions	Some – reduce energy usage when notified (i.e., change settings on AC, etc.)
<b>Community Solar</b>	No cost to participate	10% savings on electric	Sign up with Sustainable Westchester
<b>EV Charging</b>	No initial cost	Rate of \$0.30 / kWh (vs. commercial rates OR \$250-\$500 to install dedicated home charging station + electric usage)	Minimal – just drive up and charge!

# SUMMARY

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- You and our community can make a difference in our battle against Climate Change.
- And the nice thing is that these actions can save us money, too!
- Things to do:
  - Switch to more energy efficient: lighting, HVAC, and everyday “stuff”
  - Improve your home’s insulation
  - Switch your transportation lifestyle to EVs and more biking/walking
  - Support renewable power projects – your own and others.
- Be proud of your contributions and save some dough!

# THANK YOU VERY MUCH

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- And good luck with your energy saving and your community-building activities!