

## A Roadmap to Carbon Neutrality for Households and Small Organizations

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Climate change is one of the biggest problems of our age – it affects all our kids’ futures. Unfortunately, it can also seem like an impossible problem. How can we do anything meaningful about climate change if the world’s governments are making little progress? Well, it turns out that a typical household in the Kansas City or Lawrence area can go completely carbon neutral - yes, *completely* - for \$100-200 per year. That’s less than your daily coffee. This article will give you step-by-step instructions. These steps will also work for small organizations (businesses, schools, places of worship).

**Step 1: Purchase Renewable Energy Certificates.** For an additional cost of typically just a few dollars a month on your electric bill (for a household – more depending on the size of your electric bill, but always a very small fraction of the bill itself), you can purchase “Renewable Energy Certificates” (RECs) which effectively make it so that 100% of your electricity comes from renewable, carbon-neutral sources.

When a power company generates renewable energy, an independent agency tracks this and issues them RECs according to how much they generate. RECs are a tradeable commodity. You can purchase and retire RECs from the renewable energy producers in an amount equal to the power you consume. This is equivalent to getting renewable energy because electricity in the grid is fungible. Because RECs are tied directly to renewables, and are regulated, signing up pushes the economics so that power companies will build more renewables. Representatives of power companies have assured me that the companies definitely do use REC purchases to help make decisions about future energy projects. This is one of the cheapest and easiest ways to reduce your carbon footprint!

*If you live in the Westar area:*

Westar runs a program called Westar Wind through which they will augment your monthly bill by a small amount (usually \$1-5 for a household) to automatically sell you RECs each month in an amount equal to your usage for the month. Signing up for this program is equivalent to getting all your electrical power from renewables.

Here is how to sign up for Westar Wind if you like the internet:

- Go to [www.westarenergy.com](http://www.westarenergy.com)
- Put in your username and password for your Westar account and log in
- Click “Clean Energy Kansas”, and select “Renewable Energy”
- Click “GET INVOLVED” and select “WESTAR WIND”
- Read the text and then click the blue button that says “Westar Wind Enrollment”
- Read the text and select the percent of your energy use you want to cause to come from renewables – we recommend 100%
- Click the box recognizing the (typically very small) additional charge, and click the blue “Update Westar Wind” button
- Done! Your electrical is now from carbon neutral renewables!

Here is how to sign up for Westar Wind if you prefer to talk to a human:

- Call 800 383 1183
- Ask them to sign you up for Westar Wind

*If you don’t live in the Westar area:*

As far as I know, KC Power and Light does not sell RECs to their customers, and other power companies in the greater KC area may not, either. However, you can buy RECs directly here <http://store.b-e-f.org/make-a-purchase> if you are willing to calculate your own usage in kWh, and companies such as Arcadia Power (<http://store.b-e-f.org/make-a-purchase>) will also sell RECs directly to you in convenient ways coupled to your monthly usage.

Step 2: Calculate your family's or organization's total carbon footprint. This will tell you the number of tons of carbon released into the atmosphere due to your activities. There are many carbon footprint calculators online, but here is an easy and good one: <https://www3.epa.gov/carbon-footprint-calculator/>.

You will need to know or estimate information like your annual electrical and gas usage (though if you sign up for Westar Wind first, or otherwise purchase RECs to cover your electrical usage, then the electrical part of your footprint is effectively 0), and annual miles driven and the mileage of your car(s).

*Some information you may need:*

- Convert from lbs to metric tons by dividing by 2205
- Also, add to the final result from the EPA calculator your CO2 from airplane flights, which can be substantial: 1) add up the numbers of hours spent flying last year by all the members of your household; 2) multiply by  $\frac{1}{4}$ ; 3) that is the number of metric tons CO2 emitted as a result of your flying.
- Getting data on electrical usage from Westar: Only do this step if you live in the Westar area and you did NOT sign up for Westar Wind
  - Go to <https://www.westarenergy.com/customer-login>
  - Log in (blue button in upper right)
  - Scroll down and find the big orange button that says "My energy dashboard"
  - Under "Electric costs" click "details"
  - Click the "Usage" tab
  - Click the "1 year" button to get one year of data
  - Scroll down and find the round green button that says "Download my data", but don't click it, instead click the button next to it for downloading a csv.
  - Open the resulting csv file with a spreadsheet program, look at the total column
  - Compute the average for 12 months – this should be average monthly kWh usage over a year
- Getting data on gas usage from black hills:
  - Go to <https://www.blackhillsenergy.com>
  - Log in (button at top)
  - Click the "Previous bills" button in the billing summary area
  - Scroll down and click "download your usage and payment history"
  - Enter dates for a recent 12-month period
  - Ask for excel format
  - Click "Download History" and save the file
  - Open the resulting file and look at the "Usage" column, which should be in units of Therms
  - Compute your monthly average usage

Step 3: Purchase carbon offsets to offset your carbon. The idea behind carbon offsets is, it can be extremely hard for a family or an organization to stop emitting carbon completely, but as an excellent first step we can pay for other programs that prevent the release of an equivalent amount of

greenhouse gases. For instance, landfills emit methane which can be captured – this helps the fight against climate change, and is much easier than, say, giving up your car. You can pay for someone to capture methane instead of giving up your car, for the same positive impact toward a solution to climate change, but less personal sacrifice. The goal is still to eventually get to a carbon neutral economy, but offsets allow the invisible hand of the market to find the easiest and cheapest first steps to this goal.

There are many carbon offset programs available online, and I invite you to do as much research as you like to choose your own, but in case your time is limited (and whose isn't) I recommend BEF, a nonprofit that sells a variety of carbon offsets (<http://store.b-e-f.org/make-a-purchase>) and engages in other environmentally valuable work. After signing up for Westar Wind, it costs a "typical" household \$50-150 to offset the rest of household emissions for the entire year!

Make sure you buy RECs to cover your electrical consumption before buying carbon offsets, as it is cheaper to get your electrical energy from renewables in the first place than it is to get it from coal and then offset the carbon that coal produced.

**Step 4: Talk about whatever steps you took with your friends and relatives!** Perhaps the biggest problem with climate change is we are not talking about it much in our local communities and networks. Tell people what you did, how much it cost, how easy it was, how it made you feel, and get them onboard!

**Additional resources:**

What is a REC: [https://en.wikipedia.org/wiki/Renewable\\_Energy\\_Certificate\\_\(United\\_States\)](https://en.wikipedia.org/wiki/Renewable_Energy_Certificate_(United_States))

Westar Wind: <https://www.westarenergy.com/content/clean-energy-kansas/get-involved/westar-wind/how-westar-wind-works>

More on carbon offsets: [https://en.wikipedia.org/wiki/Carbon\\_offset](https://en.wikipedia.org/wiki/Carbon_offset)

BEF: <http://www.b-e-f.org/>

Arcadia Power: <https://www.arcadiapower.com/>