

# Climate Action

Hey Friend,

Erika and I have been doing a good bit of research over the last few years into climate change, and how to prevent it. A lot of changes are needed in a lot of places, but there are a few “set and forget” actions you can personally take today that will have a positive impact.

Here’s the big picture: we need to reduce global greenhouse gas emissions by [55% this decade](#) (oh hello there 2020s!) and get to zero-carbon emissions globally by about 2050 to limit global warming to 1.5°C to minimize widespread environmental damage and human distress. Each of us (and as folks in the developed world, our consumption currently plays an outsized negative role) currently contributes to carbon emissions both directly and indirectly. But it doesn’t have to be that way. Much of the technology needed to shift our economy to be zero-emissions exists today. We need to make sure that at every next buying decision, every individual and business opts for the carbon-neutral option when available, and puts pressure on our lawmakers at every level to put in place the policies that will support the necessary industrial shift. Some of these changes (such as removing our reliance on natural gas in our homes) will likely eventually be mandated on us, but while our government is slow to act, we can get ahead of the curve and decarbonize now.

**Basic** steps help a ton, are low budget (or even cost-saving!), and easy. **Advanced** and **Optimal** steps require bigger investments and make the infrastructural changes that are necessary to move to a zero-carbon world.

Our future decarbonized world is one of fabulous technology and high quality of living — let’s do this!

> The actual miracle is that solar and wind are now the cheapest energy sources, electric cars are better cars than those we already have, electric radiant heating is better than our existing heating systems, and the internet was a practice run and blueprint for the electricity network of the future.

Saul Griffith, [How do we decarbonize?](#)

Home

*We need to move to a 100% clean electricity supply, and switch all of our appliances over to using electricity rather than natural gas. Burning natural gas in each of our homes emits carbon dioxide, and depends on natural gas extraction which leads to methane leaks (which has 34x the global warming potential as compared to carbon dioxide per ton). Heating and cooking*

account for 11% of the average American's carbon footprint. Electricity + heating and cooking account for 25% of the average American's carbon footprint, which these steps would entirely replace.

1. **Basic:** If you pay a power bill, you can (virtually) switch your electricity consumption to renewable-only using [Arcadia Power](#) (and if you rent and the landlord pays the bill, let them know about Arcadia — there are free plans, and depending on where you live it could save them money on their power bill, winning your landlord's love forever). While our electricity supply is still dirty, [find opportunities for reducing your electricity usage](#). Install LED bulbs in all possible lights. Get a smart thermostat (e.g., Nest).
2. **Advanced:** Electrify your house — change your gas hot water heater and furnace to electric, ideally [heat pumps](#) — [Fast Water Heaters](#) will start installing electric heat pumps on the West Coast in the next few months (as on Jan 2020 — they're currently going through training), [Water Heaters Only](#) installs electric heat pump water heaters in most urban areas in California, [Hassler](#) installs in SF East Bay, or geothermal via [Dandelion Energy](#) if you happen to live in Hudson Valley, NY. Change your gas stove to induction electric and your gas oven to electric — easily done with [an induction range](#). Also make sure that you have good insulation so all that energy isn't just heading directly outside! If you're renting, you can still make improvements like putting plastic on your windows or extra towels in door cracks or seams. And if your landlord pays for power, forward them these suggestions, as they will save them money in the long-run.
3. **Optimal:** Clean your electricity supply — in addition to electrifying your house, install solar panels on your roof covering as much of your usage as possible. ([Luminalt](#) is a well-rated installer in SF). Install a home battery if possible, to make better use of your own solar generation and improve the case for distributed storage. Rent or unable to install solar? Contribute to the [Arcadia Community Solar](#) project to invest in local solar projects.

## Transport

*We also need to decarbonize all of our transportation — cars, buses, trains, and planes. Personal cars will likely all go electric, short-haul flights will use electricity and hydrogen, and long-haul flights will likely need to use biofuels long-term.*

1. **Basic:** Reduce long-haul travel whenever possible — [a single flight emits as much carbon as many people in the world use in an entire year](#). Take a vacation in your state or telecon instead of flying for business. For travel that is required, [offset the emissions](#). Opt for public transportation, walking, biking (leg-powered or electric), and electric scootering whenever feasible. Whenever you rent a car, try getting an electric vehicle (ideally) or hybrid (second-best) — carsharing apps such as [Turo](#), [Getaround](#), and [GIG](#) (SF Bay Area+Sacramento for now) offer EVs, as do some [traditional car rental companies](#).

2. **Advanced:** buy, lease or carshare an electric vehicle. There are more options than ever — there are [14 new EVs](#) coming [out in 2020](#), and prices are coming down, [now starting around \\$30k](#), with [tax rebates up to \\$7,500](#). They certainly aren't cheap yet, if it's not the right time to buy a new car, another option is to lease an EV now and then wait to buy one as even more options come out over the next few years. That way, you reduce your emissions starting today and demonstrate demand for EVs to help the overall market shift. If you can't install an electric car charger where you live, there are [many public charging stations](#) throughout the country, with heavy density in urban environments where people are less likely to have their own driveways or garages. If you have room to charge at home you can easily get away with plugging straight into a 110V socket and if you commute less than about 25 miles a day you can fully re-charge overnight. If you occasionally drive further you can go to a public charging station. Even better, maybe you don't need your own car at all, and can car-share EVs ([Turo](#), [Getaround](#), and [GIG](#)) whenever you do need access to a car.
3. **Optimal:** In addition to the above, when applicable, use your influence to reduce the need for large groups to travel. Planning a wedding with guests coming from two coasts? Maybe have a party on each one. Organizing a company offsite or conference? Help make sure that it's at a local destination, and setup shared transport there (ideally an electric bus!).

## Civic

*While we all need to take individual action to decarbonize the pieces of transportation and home infrastructure we control, the biggest improvements will come from government support to shift the economy to be carbon-neutral — from removing fossil fuel subsidies to investing more in cleantech R+D, to offering rebate program and incentives for individuals and businesses to decarbonize.*

1. **Basic:** [register to vote](#) and vote.
2. **Advanced:** join a group like the [League of Conservation Voters](#) or [Citizen Climate Lobby](#) to learn more about the climate and environmental impacts of your voting options, and opportunities to call and mail your elected officials.
3. **Optimal:** Learn about, and help support, non-profits helping shape and push for improved climate policy. A helpful guide is [here](#). Some non-profits we're proud to help support:
  - [Clean Air Task Force](#)
  - [Coalition for Rainforest Nations](#)
  - [Third Way Climate and Energy Program](#)
  - [Carbon180](#)

## Lifestyle

*The above changes help address the roughly 50% of personal emissions contributed by transportation, travel, electricity, and heating and cooking. The remaining 50% of emissions are driven by food consumption, and goods and services we buy and use.*

1. **Basic:** eat less beef and lamb — just by eating chicken instead of beef you can [cut a quarter of your overall food emissions](#), or 0.6 tons of carbon dioxide per year, a.k.a. 3% of the average American's emissions. When you are craving a burger, sausage or meatloaf, try [Impossible Foods](#) or [Beyond Meat](#) — both are nearly indistinguishable from the real thing! Reduce your animal product consumption, even if only a few days per week. Buy less stuff, and less new stuff. Reduce Amazon shipping emissions by using Amazon Day and have all of your stuff delivered once every week (or better yet, walk or bike to your neighborhood stores and help support your local economy). Buy local produce / CSA / farmshare / organic when possible to reduce shipping and fertilizer emissions (there are many CSA services that are just as convenient as other grocery delivery options, here's a [list of 10 in SF](#)). Reduce food waste, and compost and grow what you can.
2. **Advanced/Optimal:** Go vegetarian or vegan to further reduce livestock emissions. (This also [inhibits your mTOR protein kinase](#), likely increasing your healthy life span by triggering autophagy.)

## Carbon Removal and Offsets

*Even with all of the steps above, until all industry goes carbon-neutral, we'll continue indirectly emitting carbon through the goods we buy, the infrastructure we use (cement directly emits carbon dioxide when poured, in addition to the electricity needed to install it), and the food we eat. While it's always preferable to avoid emitting greenhouse gases in the first place, our next best option is to remove or offset our remaining direct and indirect usage.*

1. **Basic:** Calculate and buy your carbon offsets through [Project Wren](#), directly remove carbon through [Nori](#), or donate a recurring monthly equivalent amount to [Clean Air Task Force](#) (working on policy to systematically reduce climate change, [historical effective cost of cutting emissions: \\$1/ton CO2e](#), but not direct emissions or offsets) for transportation, food, and product consumption that doesn't yet have easy, cheap, clean alternatives. Increase your offsets for [every flight you take](#).

## Work

Depending on where you work, the emissions profile of the company and your level of influence can vary, but the categories and ideas above can serve as a rough guide to starting to push for more sustainable policies. Here are some ideas to get you started —

- Form a group with your peers to jointly push for sustainable practices.

- Push your company to start measuring, decreasing, and offsetting their emissions.
- Think about how you can make your role and department more sustainable. See thoughts on this for developer relations from [Matthew Revell](#) and [Bear Douglas](#).
- Ask how your office gets its power. Can solar or wind be installed?
- Ask how your office is heated and cooled, and how water is heated. Can it be switched to electric?
- If food is provided in your office, are local sources chosen when available? Can beef and lamb consumption be reduced?
- When new office locations are chosen, is proximity to public transportation a key deciding factor? If shuttle buses are provided for employees, are they electric? Are EV charge points offered in office or nearby parking garages?
- If you work in fields related to housing (construction, materials, architects, etc.), buildings, food, transportation, is your business using its leverage to encourage individuals and other businesses to make less greenhouse-gas-intensive decisions like those outlined here?
- If your work is related to manufacturing and/or industrial processes ([steel](#), [chemicals](#), [cement](#), [aluminum](#), [pulp and paper](#), etc.), is your company directly (R+D, suppliers) or indirectly (purchasing their products, encouraging adoption) supporting the transition to carbon-neutral manufacturing processes?

## Collective Action

Lastly, think of 5 people you know and forward them this email with a note on which actions you're taking.

We'd love to hear which steps you take, too! We've done, or are in the midst of doing, all of the steps on this list, so if you have any questions about any of these, or run into any roadblocks, please let us know! These are each things that the world depends on gaining much more widespread adoption and support, so any friction you face along the way is well-worth improving upon. And if you want to do even more, let us know, and we'll share more ideas :)

Thanks,  
Peter & Erika