

## CLIMATE SOLUTIONS: WORKING PAPER 1

# 8 STEPS YOU CAN TAKE TO CUT YOUR HOUSEHOLD'S CARBON FOOTPRINT 50%

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## SUMMARY

### How You as an Individual Can Create a Personalized Climate Action Plan to Cut Your Carbon Footprint by 50%

The average US citizen generates 16.4 tons of CO<sub>2</sub> emissions per year. By 2050 we need to reduce that to zero. Here are practical, achievable ideas on how you can get started doing just that: NOW!

### What is the problem?

Although I work with community members developing Climate Action Plans for their community as a whole, individuals approach me and say with a sense of powerlessness "but what can I do as a single individual to combat climate change?" These human beings are feeling that as just one individual out of 8 billion on the planet, how much impact can they really have?

### How do we solve it?

Well here are 15 positive climate change action ideas that have a real impact on moving to zero and that you can do now. Without doing anything too drastic, you can reduce your carbon footprint by 50% taking these 15 actions in two phases.

Phase One: 13 simple, low-cost/no-cost actions that you can take right away that have substantial impact.

Phase Two: Two additional bigger decisions that you can make that will require planning and investment on your part.

**Background:** The UN Intergovernmental Panel on Climate Change (IPCC) has declared that we need to be at net zero carbon emissions by 2050 to keep global warming below 1.5°C<sup>1</sup>. Emissions are measured in tons of CO<sub>2</sub>. The average US citizen generates 16.4 tons of CO<sub>2</sub> emissions per year. Therefore, over the next 28 years we each need to reduce that to zero. Here are some practical, achievable ideas on how to get started doing just that.

## THE 8 STEPS

### Step One.

Write a Climate Action Plan to reduce your carbon footprint by 50%. This is very important to do if you want success.

The first thing to do in developing your Climate Action Plan is to perform a carbon footprint estimate on your household. I used this great [Quick Carbon Footprint Calculator](#)<sup>2</sup> from the University of California, Berkeley.

In 15 minutes you can complete the Carbon Footprint Calculator with information that you probably have at your fingertips. This calculator prepares a report for you that explains a lot in an easy-to-understand manner. It allows you to see where you are contributing to CO<sub>2</sub> emissions and what practical steps you can take to reduce them.

To give you a working climate action plan template, I will use a real example—our own household's Climate Action Plan for you to use as a springboard:

**Magee Family Climate Action Plan:** Reduce our household's annual CO<sub>2</sub> emissions by 12 tons—or 50% in 12 months.

We found really good information in the footprint calculator. First, our four biggest contributors to emissions are ground transportation, household electricity, food choices, and air travel. We learned that our two-person household generates 24 tons of CO<sub>2</sub> emissions per year, or 12 tons each.

The report gave us a list of actions that we could take to reduce our current footprint. Two other great resource for fine tuning which actions to choose are Mike Berners-Lee's *The Carbon Footprint of Everything*<sup>9</sup> and Project Drawdown<sup>10</sup>.

From these three resources we selected 15 actions that will let us reduce our household's 24 tons per year by 12 tons (or by 50%). So this became our Climate Action Plan's goal.

13 of these are low-cost/no-cost actions that will reduce our carbon footprint by 9.7 tons a year. That is 81% of our 12 ton goal.

Two others will require some planning and financial investment. We chose to install photovoltaic panels on our roof and trading in our current car for an electric car for a 4.9 ton reduction. This could be an additional 41% of our 12 ton goal. Cumulatively, these 15 combined actions exceed our 12 ton goal, so we have some flexibility.

I highly recommend the Carbon Footprint Estimate Calculator. I learned where we are generating carbon emissions, what inexpensive actions we can take to reduce our carbon footprint now, and what more expensive actions could be phased in. In one or two years we can indeed reduce our carbon footprint by 50%.

**Step Two: Have climate conversations to leverage and multiply our results and successes with friends, family, and colleagues.**

Set an example: Become influencers! We will share with people early on about our climate action plan. We might only be two individuals out of the whole planet, but if we can share what we're doing with 10 family members and friends—we could start a snowball effect.

We're part of a WhatsApp family group. Every month as we take one positive step, we can let them know that we've done it, how we did it, how much it cost, and what the impact will be. Maybe our friends and family have in the back of their minds doing something like this too—but aren't sure how to do it—or if it will have a meaningful impact. We can show them: step-by-step.

Become Activists: Speak to a local nonprofit working in climate change. Speak to your local City Council members. You may find that they are already working on a climate action plan and that you could learn from that process. They might also learn from your climate action plan too!

**Step Three. Travel. Reduce our carbon footprint by 2 tons per year: 17% of our 12 ton goal.**

Plan vacations or business trips in order to cut one round-trip flight per year. This will save us 2 tons of carbon emissions per year. According to the Emissions Calculator from the German nonprofit Atmosfair<sup>3</sup>, flying from London to New York and back generates about 1,320kg of CO<sub>2</sub> per passenger. That's over one ton per passenger per round-trip flight. That's a lot.

My wife and I have traditionally taken three international trips per year. Some for work, and some for vacations. So we looked at our plans and realized that we could tack a vacation trip onto the end of a business trip and save one round-trip flight. We won't lose any of the pleasures of vacation time away, but we will drop 2 tons of CO<sub>2</sub> out of our normal annual travel emissions.

Step three doesn't take any time or financial investment. It's just a simple decision to save two tons of CO<sub>2</sub>.

**Step Four. Meat. Reduce our carbon footprint by 1.6 tons per year: 13% of our 12 ton goal.**

Cut our animal protein consumption in half. According to the World Resources Institute (WRI), this will reduce our carbon footprint by 1.6 tons per year<sup>4</sup>. Cattle are the world's third-largest emitter of greenhouse gases, after China and the US.

Plus, we need to face the music anyway. Our physician has been telling us to lose some weight and to reduce our consumption of saturated fats, cholesterol, and salt for years. Now is our chance.

Americans eat over a half of a pound of meat (beef, pork and poultry) per day<sup>11</sup>. So how do we cut that in half? If we did nothing more than begin incorporating guidelines from flexitarian or Mediterranean diets<sup>12,13</sup> into our weekly meals, we would be well on our way to cutting our animal protein by more than one-half without reducing the enjoyment of our delicious meals. We might even find that we will begin to lose a little weight, lower our blood pressure and that our doctor will begin smiling at us again!

**Step Five. Food Waste: Reduce our carbon footprint by 1.8 tons per year: 15% of our 12 ton goal.**

Reduce food waste in our home. One-third of all food produced is either lost in the farm-to-market production and sales process, or simply thrown away by consumers. This amounts to 1 billion tons of food each year, which accounts for 10 per-cent of global greenhouse gas emissions<sup>5</sup>. The FAO study, Food Wastage Footprint & Climate Change<sup>6</sup>, states that the per capita carbon footprint of food wastage for North Americans is 0.9 tons per year: This means 1.8 tons for our 2 person household.

The problem falls into two categories:

- 1) Buying things that sit in our refrigerator that we never get around to using and have to toss out.
- 2) Making meals that are way too big and so we wind up throwing away the leftovers.

There's an old adage for dieters that we can use too: go to the grocery store with a list and stick to it. Don't be tempted by things that you either shouldn't eat or don't need. Planning healthier meals and writing shopping lists in Step 4 can help us avoid food waste by not over buying food.

**Subtotal:** We have now achieved a 45% reduction of our 12 ton goal. During these first five steps we're not actually spending additional money.

**Step Six. Good Habits: Reduce our carbon footprint by 4.3 tons per year. 36% of our 12 ton goal**

These are seven additional low-cost actions don't require much time or money, but they require developing good habits.

Here they are:	
Maintain our vehicle (tune-ups and tire pressure)	0.5 Tons
Practice "eco driving" (takin' it easy)	0.7 Tons
Ride a bike, walk or use public transport for errands	0.5 Tons
Telecommute to work (working virtually or remotely)	1.0 Tons
Turn off lights	0.1 Tons
Switch to LED lights	0.6 Tons
Wash clothes in cold water, hang dry	0.9 Tons <sup>8</sup>
<b>Total:</b>	<b>4.3 Tons/year</b>

**Subtotal:** We have now achieved 81% of our 12 ton goal in Phase One. With the exception of maintaining the car and the LEDs, these are no-cost items.

**PHASE TWO: THINGS THAT WE CAN DO THAT WILL REQUIRE SOME PLANNING AND SOME INVESTMENT ON OUR PART.**

Now we enter into an area of greater expense and planning. If we like, we can elect to take one of the following two actions per year over two years.

**Step Seven. Reduce our carbon footprint by 2.1 tons per year. 17% of our 12 ton goal.**

Trade in our gas-powered car for an electric car. It is estimated that this would cost \$30,000.

**Step Eight. Reduce our carbon footprint by 2.8 tons per year. 23% of our 12 ton goal.**

Install photovoltaic panels on our roof. This will save 2.8 tons per year at a cost of \$12,500, but will reduce our annual electrical bill by \$800.

**Grand Total:** We have now reduced our carbon footprint by 14.6 tons thereby surpassing our 12 ton goal reduction by 22%! Our new household carbon footprint is 9.4 tons per year, down from 24 tons.

**BONUS: Three ideas to reduce the remaining 9.4 tons of our carbon footprint:**

Now, since we completed our initial 50% carbon footprint reduction plan, I'm going to add a third phase for the future: Actions that may be more drastic but will allow us to begin chipping away at the 9.4 tons remaining of our two person footprint.

**Background:** Although the IPCC is recommending zero emissions by 2050, a limit on emissions would need to be set at 2.3 tons per capita of CO<sub>2</sub> per year by 2030 <sup>7</sup>. That would mean a total footprint of 4.6 tons per year for our two-person household. So here are some additional ideas.

**PHASE THREE: STEPS THAT MAY BE MORE DRASTIC BUT WILL ALLOW US TO WORK ON THE NEXT 50% OF OUR FOOTPRINT.**

Since our two-person carbon footprint was reduced to 9.4 tons per year, we need to reduce it another 4.8 tons to get down to 4.6 tons per year for our household by 2030.

**Here are three options:**

Keep our new electric car but drive it 50% less:	1.2 Tons per Year
Reduce our animal protein consumption to 25%:	0.8 Tons per Year
Purchase green electricity:	2.8 tons per year <sup>8</sup>
<b>Total:</b>	<b>4.8 Tons:</b>

100% of our goal!

**References:**

1. The evidence is clear: the time for action is now. <https://www.ipcc.ch/2022/04/04/ipcc-ar6-wgiii-pressrelease/>
2. The CoolClimate Network Quick Carbon Footprint Calculator. University of California, Berkeley. <https://coolclimate.berkeley.edu/calculator>
3. Atmosfair <https://www.atmosfair.de/en/offset/flight/>
4. WRI. World Resources Institute Shifting Diets for A Sustainable Food Future [https://files.wri.org/d8/s3fs-public/Shifting\\_Diets\\_for\\_a\\_Sustainable\\_Food\\_Future\\_1.pdf](https://files.wri.org/d8/s3fs-public/Shifting_Diets_for_a_Sustainable_Food_Future_1.pdf)
- Infographic: [https://wriorg.s3.amazonaws.com/s3fs-public/uploads/16\\_Shifting-Diets-Blog-Graphics\\_07v4.png?\\_ga=2.140325495.519537369.1540904431-1722369491.1540904431](https://wriorg.s3.amazonaws.com/s3fs-public/uploads/16_Shifting-Diets-Blog-Graphics_07v4.png?_ga=2.140325495.519537369.1540904431-1722369491.1540904431)
5. UNEP Food Waste Index Report 2021 <https://www.unep.org/resources/report/unep-food-waste-index-report-2021>
6. Food Wastage Footprint & Climate Change. FAO <https://www.fao.org/3/bb144e/bb144e.pdf>
7. Carbon inequality in 2030. Per capita consumption emissions and the 1.5°C goal. Oxfam <https://www.oxfam.org/en/press-releases/carbon-emissions-richest-1-set-be-30-times-15degc-limit-2030>
8. The climate mitigation gap: education and government recommendations miss the most effective individual actions  
Seth Wynes and Kimberly A Nicholas, Lund University <https://iopscience.iop.org/article/10.1088/1748-9326/aa7541>  
<https://iopscience.iop.org/article/10.1088/1748-9326/aa7541/pdf>
9. The Carbon Footprint of Everything, by Mike Berners-Lee. <https://greystonebooks.com/products/the-carbon-footprint-of-everything>
10. Project Drawdown Table of Solutions. <https://www.drawdown.org/solutions/table-of-solutions>  
Drawdown Lift report and factsheet: Climate–Poverty Connections <https://drawdown.org/drawdown-lift>
11. National Chicken Council <https://www.nationalchickencouncil.org/about-the-industry/statistics/per-capita-consumption-of-poultry-and-livestock-1965-to-estimated-2012-in-pounds/>
12. Climate-friendly diets can make a huge difference. Amanda Schupak <https://www.theguardian.com/environment/2022/jun/04/meat-diets-climate-emissions-plant-based-vegan>
13. Analysis and valuation of the health and climate change cobenefits of dietary change <https://www.pnas.org/doi/10.1073/pnas.1523119113>

We're already enjoying this! We can reduce our carbon footprint to 2.3 tons per person in our household before 2030, and still retain lifestyle pleasures.

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